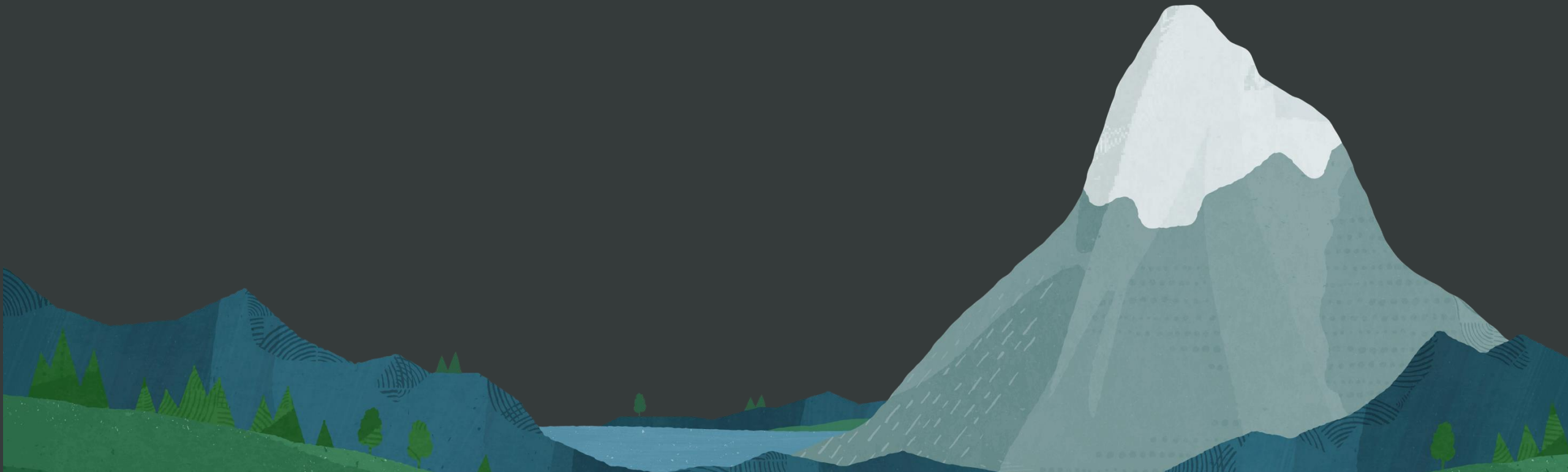


ORACLE | APEX

# Oracle APEX

Build Scalable and Secure Low-Code Apps



# Safe harbor statement

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The following is intended to outline our general product direction. It is intended for information purposes only, and may not be incorporated into any contract. It is not a commitment to deliver any material, code, or functionality, and should not be relied upon in making purchasing decisions. The development, release, timing, and pricing of any features or functionality described for Oracle's products may change and remains at the sole discretion of Oracle Corporation.

# What is a Low-Code Application Platform?

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## What is a Low-Code Application Platform?

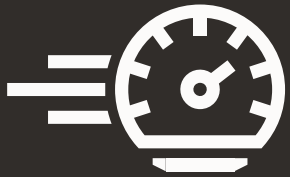
Low-Code application platform (**LCAP**) is used to rapidly develop and deploy custom applications by abstracting and minimizing hand coding.

At a minimum, an LCAP must include low-code capabilities (such as a model-driven or graphical programming approach with scripting) to develop a complete application consisting of user interfaces, business logic, workflow, and data services.

- *Gartner*



# Why low code?



## Speed

- Easy to learn
- Faster development



## Innovation

- More time to focus on making better apps

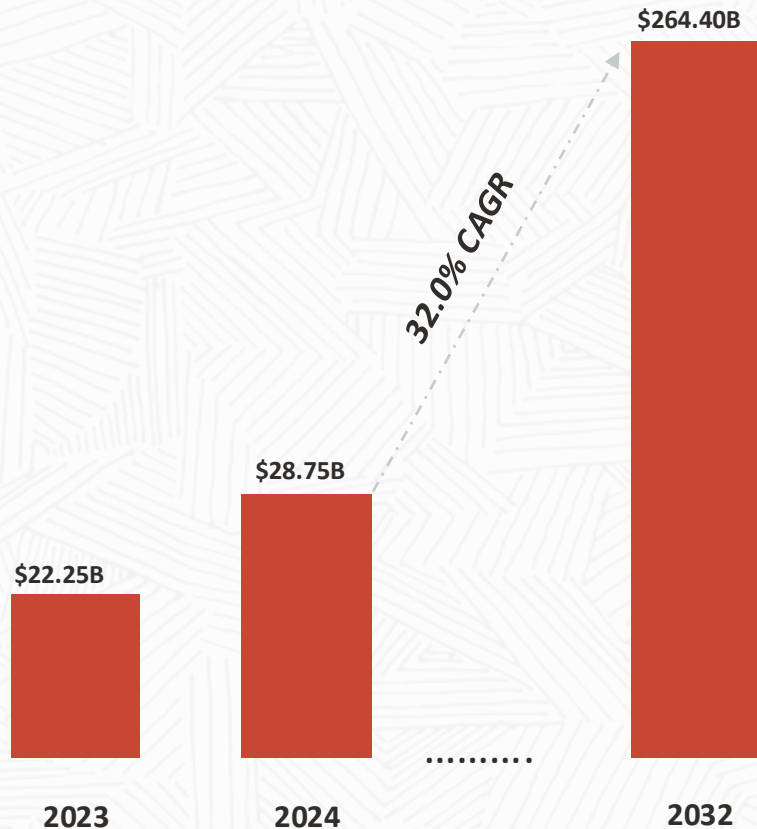


## Agility

- Respond to user requests more quickly

# Low-Code Application Platform (LCAP) Market

Large and fast-growing market



Low-Code Dev Platform Market Size

Source: Fortune Business Insights – “Low Code Development Market Share, 2024-2032”, May 2024

- The global low code development platform market size was valued at USD 22.25 billion in 2023 and is projected to grow from USD 28.75 billion in 2024 to USD 264.40 billion by 2032, exhibiting a CAGR of 32.0% during the forecast period (2024-2032).

Source: Fortune Business Insights – “Low Code Development Market Share, 2024-2032”, May 2024

- “By 2025, **70%** of new applications developed by enterprises will use low-code or no-code technologies, up from less than 25% in 2020.”

Source: Gartner, September 2021



# What is Oracle APEX?

---



“As a developer and someone who writes SQL every day, I know how challenging it can be to remember table names, column names, and syntax I don't frequently use. Having an AI assistant to determine column names contextually, JOINS, and generate complex syntax is a real game changer.”

---

**Michael Hichwa**  
Senior Vice President



# What is Oracle APEX?

Oracle's Strategic Low-Code Application Platform

APEX is the **world's most popular** enterprise **low-code** application platform.

It enables you to build scalable and secure enterprise apps with world-class features **20X** faster with **100X** less code.

Oracle APEX delivers the most productive way to develop and deploy **Mobile, Web, and Desktop** apps everywhere - cloud and on-premises.



**ā'pěks**  
(#orclapex)

**21 Million +**

apps created till date

**7,000+**

APEX apps created daily

**850,000+**

APEX developers worldwide

**100,000+**

customers across 150 countries

**90%**

of Fortune 500 use Oracle APEX



# The Oracle APEX Advantage

---



## Quickly create apps that meet business objectives

Focus on the intent of the app – not how to code it, and spend less time on maintenance going forward



## Add AI to your apps

Add AI capabilities to apps even if you're not an AI expert – giving users flexible options for using apps, and shortening their learning curve



## Build enterprise-ready applications

Get the security, scalability, performance and reliability of Oracle Database.

APEX is included with Oracle Database at no extra cost

# Oracle APEX

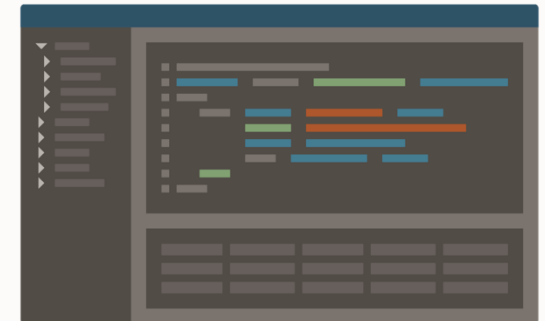
Database-centric web application development framework



Develop desktop and mobile web apps

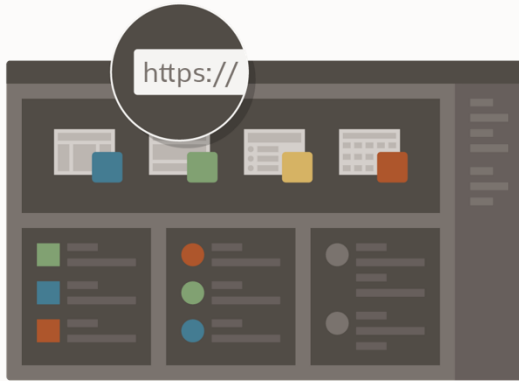


Visualize and maintain database data



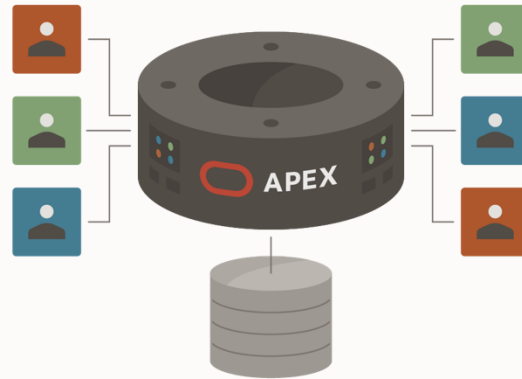
Leverage SQL Skills and database capabilities

# Distinguishing Characteristics



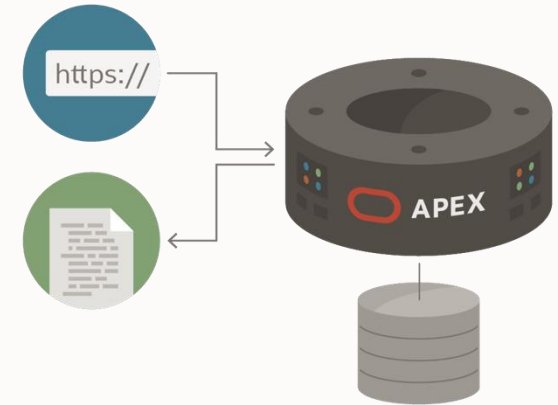
App Development IDE is a web browser

**No client software needed**



App Definitions are stored in the database as meta data

**Declarative – No code generation**



Page generation is efficient with only one request and one response

**Data processing done in the Database**



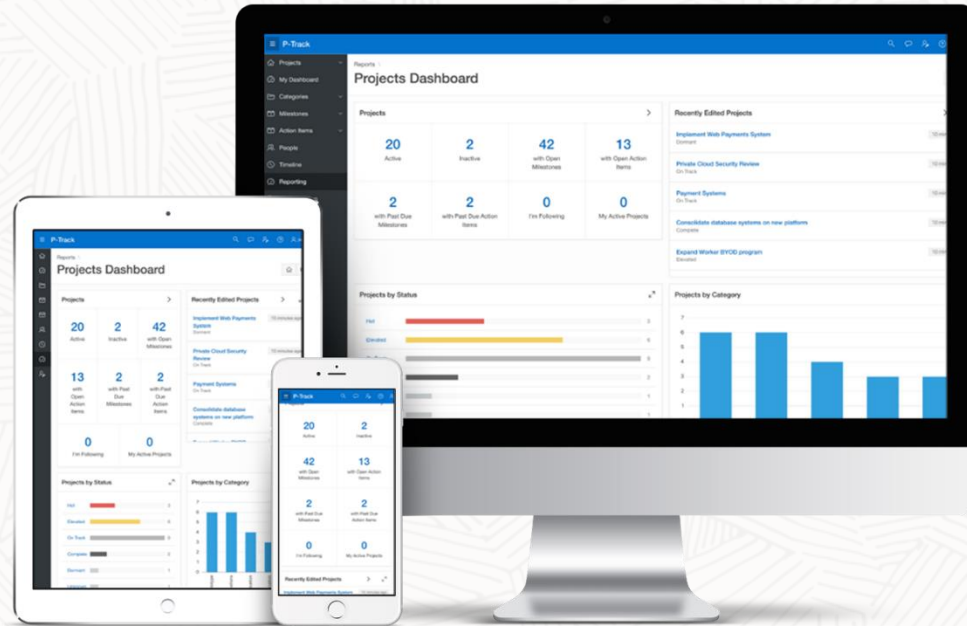
# Oracle APEX

Comprehensive Low-Code Platform



- **Build** powerful cloud and mobile apps using a web browser
- **Generate** Applications using AI
- **Import/export** data
- Publish **REST APIs**
- **Integrate** local and remote data
- **Automate & Integrate** processes and apps

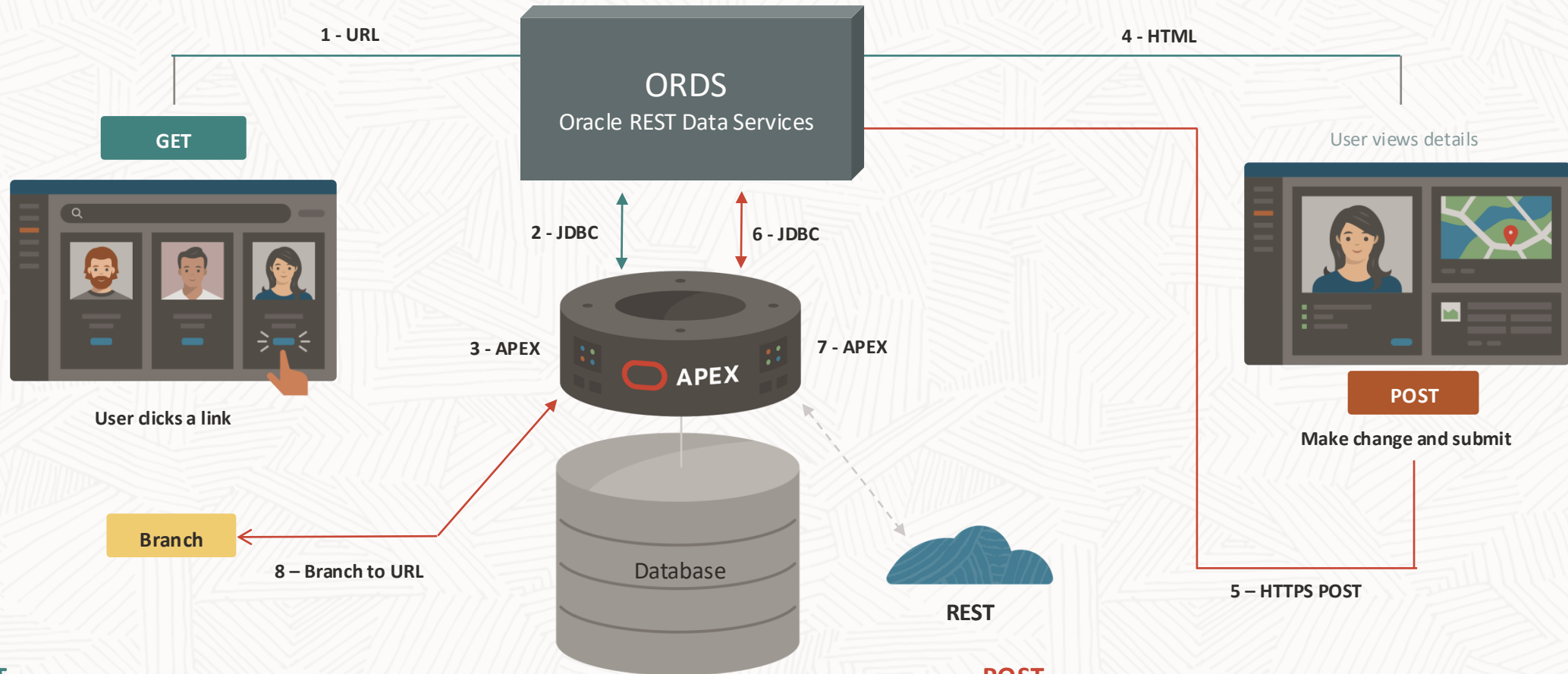
# User Interface for Any Device



**Modern, intuitive, accessible UI for any device  
fully customizable and responsive apps**



# APEX Architecture



## GET

1. User clicks a link which sends HTTPS GET request to ORDS
2. ORDS makes a database JDBC call to the APEX Engine
3. APEX generates HTML page (full page or partial)
4. ORDS returns the generated HTML back to the browser

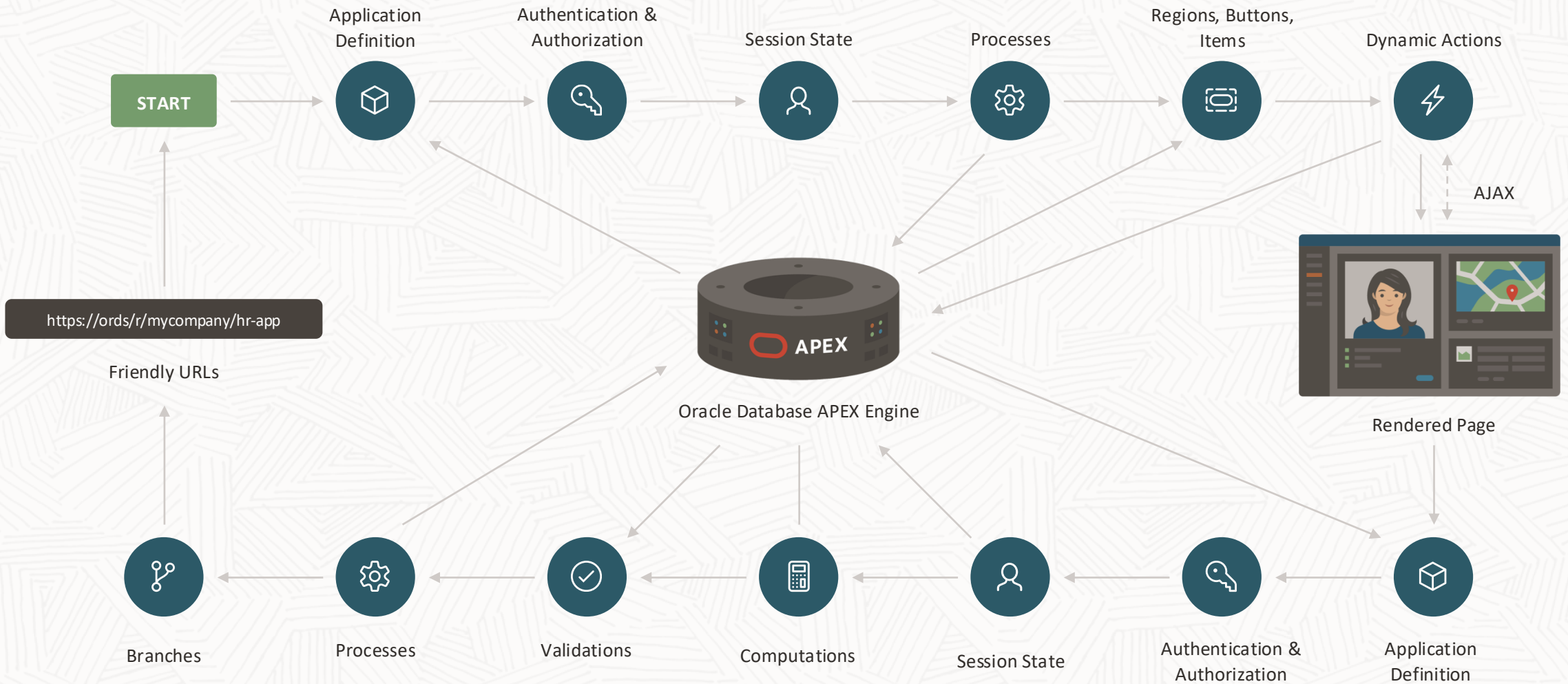
## POST

5. User clicks a button which does an HTTP POST to ORDS
6. ORDS makes a database JDBC call to the APEX Engine
7. APEX processes the request
8. APEX determines URL and branches

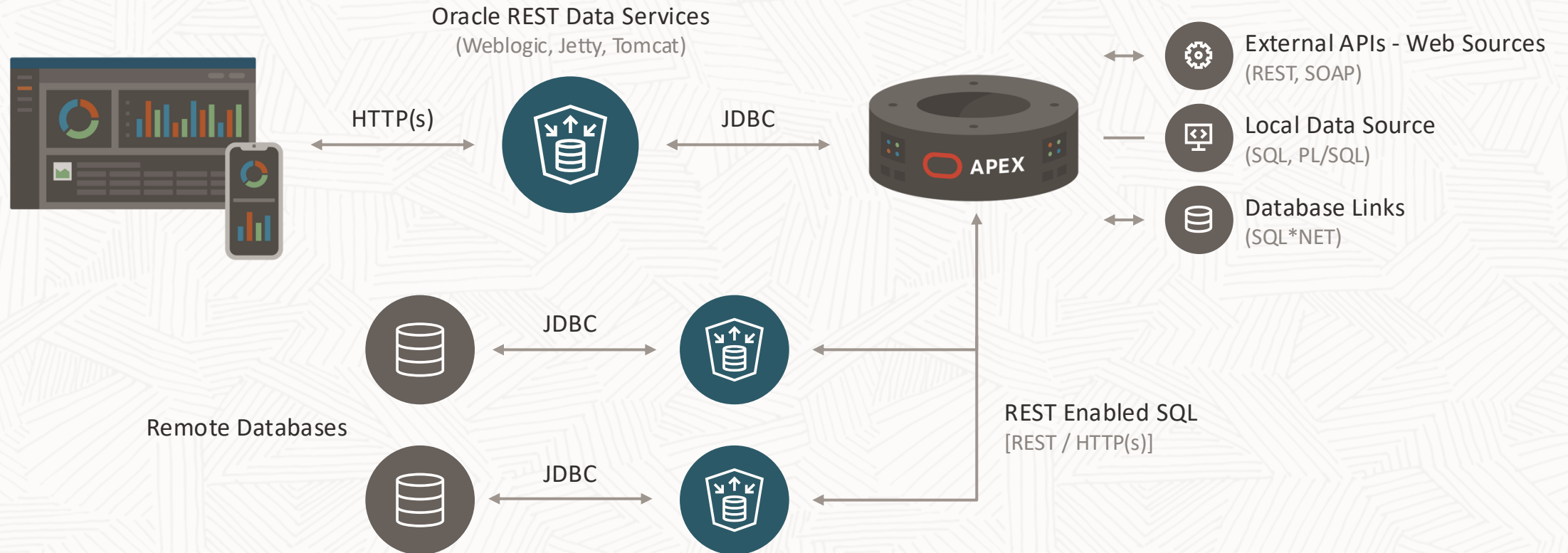


# Browser Requests

Detailed processing from URL entered to page response



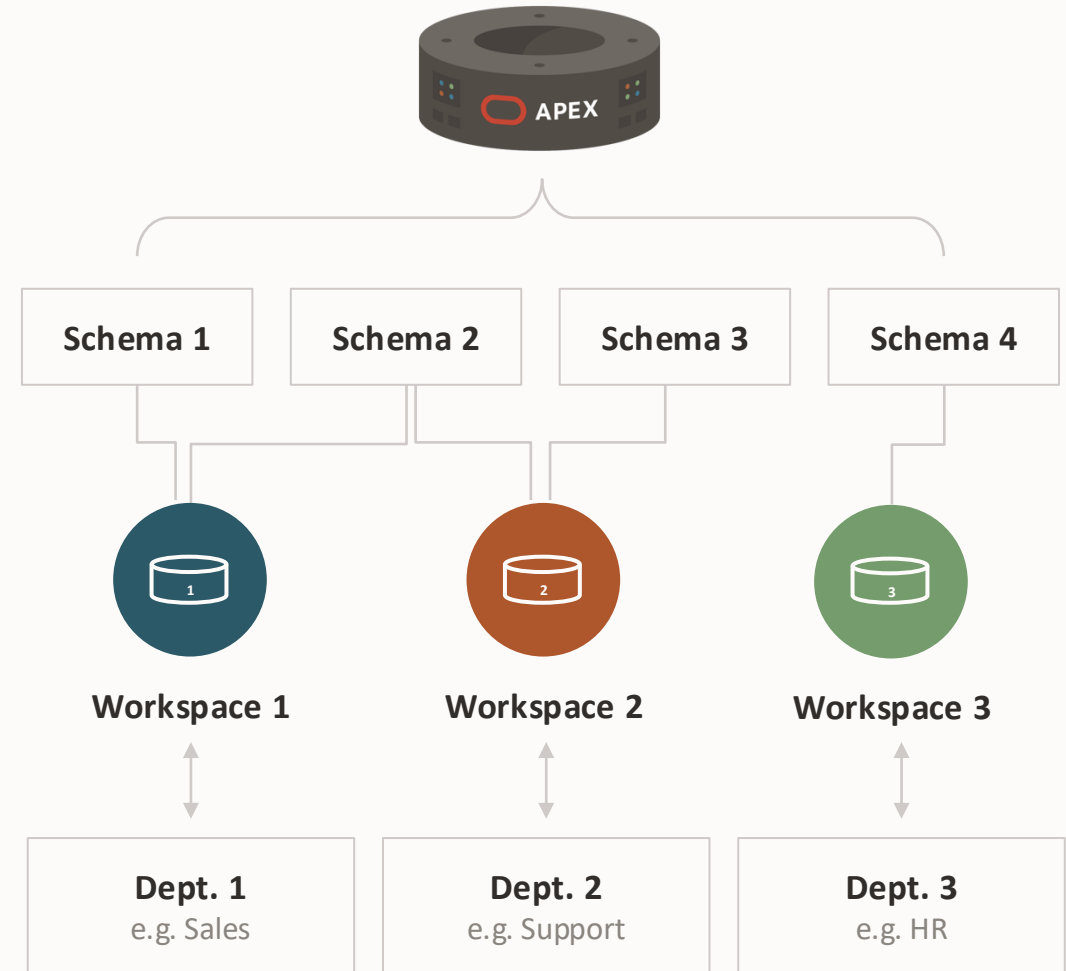
# APEX Data Sources



# Single Database Instance and Multiple Workspaces

## Oracle Database with APEX

- Workspaces used to define application definitions / Schemas hold data
- The many-to-many relationship between Workspaces and Schemas
- Instance Administrators manage the environment and schema access
- Departments can request more space and access to a new schema
- For example, Oracle’s internal-only service <https://apex.oraclecorp.com/en/> has over 9000 Workspaces, covering every line of business in Oracle



# Product Timeline

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# Oracle APEX Release History – 5-Year Review

## APEX 20.1

April 23, 2020

- APEX + Redwood
- Friendly URLs
- Native PDF Printing

## APEX 21.1

May 12, 2021

- Maps Region
- New Application Data Loading
- Native Markdown Support

## APEX 22.1

May 3, 2022

- Approvals & Unified Task List
- Simplified Page Creation
- Readable Application Export in JSON or YAML
- PWA Service Worker Customization

## APEX 23.1

May 17, 2023

- Template Components
- PWA Push Notifications
- Modernized Object Browser

## APEX 24.1

June 17, 2024

- AI-Assisted Development
- Document Generator Integration
- Workflow and Approval Enhancements
- Working Copy Enhancements

## APEX 20.2

October 21, 2020

- Cards Region
- Automations
- REST Data Source Synchronization

## APEX 21.2

November 4, 2021

- Smart Filters
- Progressive Web Apps
- Geocoding and Map Items

## APEX 22.2

November 10, 2022

- Application Search
- Invoke API Processes
- New and Updated Components
- PWA, and Mobile Updates

## APEX 23.2

November 14, 2023

- Application Working Copies
- Workflows
- New Page Items
- Custom Map Backgrounds

## APEX 24.2

Jan 15, 2025

- AI Configurations and RAG Sources
- Integrating with Fusion Applications
- JSON Data Sources
- Workflow and Approval Enhancements



# Oracle APEX is Available Everywhere

## Oracle Cloud

- APEX Service
- All workload types of Autonomous Database
- Oracle Base Database Service
- Oracle Exadata Cloud Service
- Always Free APEX Service
- Always Free Autonomous Database

## On-Premises

- All Oracle editions
- Oracle Exadata
- Oracle Database Free

## Other Clouds

- Autonomous Database on Azure
- Amazon RDS for Oracle Database
- All other major clouds via VM

Oracle APEX is a **fully supported no-cost feature** of Oracle Autonomous Database and all Oracle Database editions.



# Oracle APEX on OCI

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# Oracle APEX on ADBS: Workload-Optimized Instances

## Oracle Autonomous Database Serverless with APEX



### Data Warehouse (ADW)

Full ADBS service optimized for **data warehousing** and **analytic** workloads



### Transaction Processing (ATP)

Full ADBS service optimized for **transactional** and **mixed** workloads

One-click, data-preserving operation:



= **Workload Type Conversion**



### JSON Database

Specialized JSON service,  
limited relational storage,  
low price



### APEX Service

Specialized APEX service,  
no SQL\*Net connectivity,  
low price



# Oracle APEX Application Development Service

Easy to use, fully managed, enterprise-class service on Oracle Cloud



APEX Application Development  
& Deployment

+



Oracle Autonomous Database

+



Exadata Cloud Infrastructure

**Best low-code environment on best cloud database on best database infrastructure**



# Oracle APEX Application Development Service

Fully managed, mission-critical stack for as low as **\$122.39/month**

- \$120.08 for 2 ECPUs and \$2.31 for 20 GB per month



Automatically scales up and down - supports dozens to millions of users

- Automatically Scales Compute and Storage
- Supports hundreds of thousands of page views per hour

- Lower costs
- Pay-per-use subscription model
- All-inclusive pricing—no per application, per user fees
- The free version you can use for an unlimited time

Try APEX Service on  
Oracle Cloud Free Tier!

# Development / Deployment Options



## Local

- Install on stand-alone laptops using Oracle Express Edition (XE) or the full database version
- Simply upgrade APEX to the required version
- Can work completely disconnected



## On-Premise

- Typically run by the IT Department
- IT generally both production operations service, and a service provider
- Departments responsible for application development



## Cloud

- Deploy Internet applications
- Leveraged for fast application development, user acceptance, and training
- Prototyping & Proof-of-Concept
- Consulting companies develop for deployment on customer premise

**Browser based application development framework enables efficient development & deployment**

**Shoot someone a URL – Check this out – Application Development**

# What does APEX do for you?

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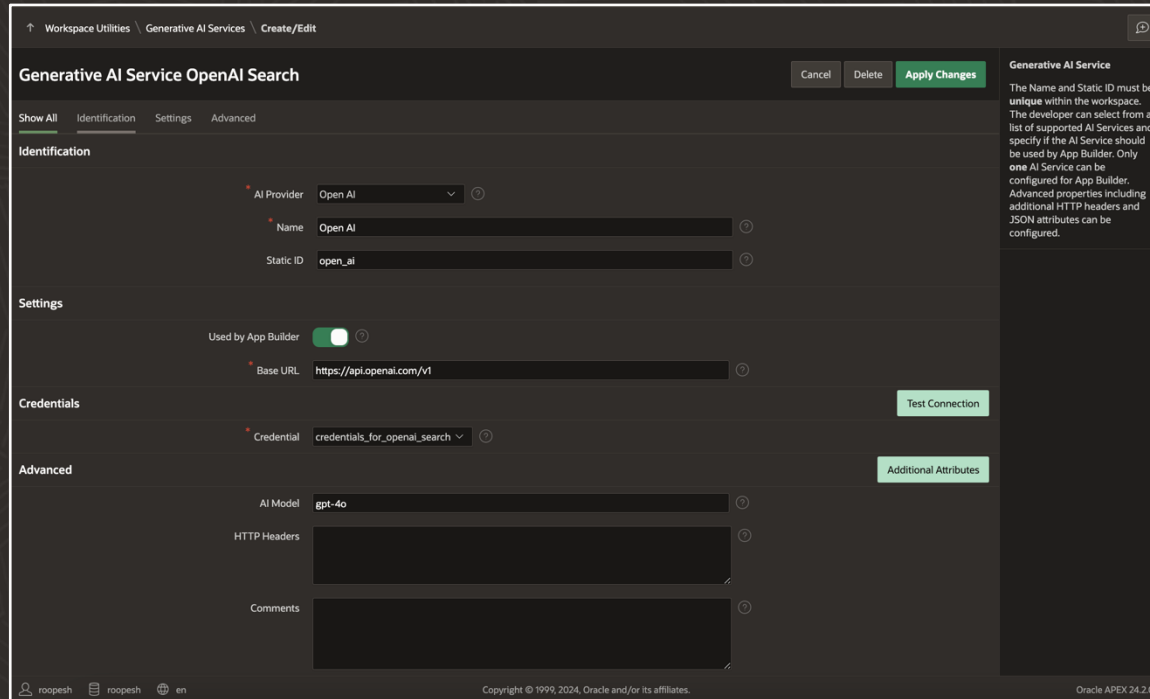


- User Interface
- Data Access
- Visualization
- Security
- Globalization
- Performance

# AI-Assisted Development

---

# Generative AI Service



- An abstraction to popular commercial **Generative AI products** like OCI Generative AI, Open AI, and Cohere
- Authenticates using **Web Credentials** in Oracle APEX
- Users can **Validate Information** before setting up a connection
- Used by **App Builder, AI Assistant & APEX\_AI PL/SQL API**
- Can be enabled/disabled on APEX at **Instance** and **Workspace** levels



# Create a Data Model from a Prompt

**APEX Assistant**
✕

Create a data model with the prefix PM to manage projects, milestones, tasks, task to-dos, task links, and comments, including multiple rows of data for each table. RT

Certainly! Here's an optimized data model for managing projects, milestones, tasks, task-to-dos, task links, and comments, along with constraints, sequences, and trigger definitions. The multiple rows of data inserts will be added to provide sample data for each table.

```
sql
-- create projects table
create table pm_projects (
  id                number          generated by default on null as identity
                    constraint pm_projects_pk primary key,
  name              varchar2(255)  not null,
  description       varchar2(4000),
  created_on        date            not null,
  created_by        varchar2(255)  not null,
  updated_on        date            not null,
  updated_by        varchar2(255)  not null,
  row_version       integer         not null )
/
```

I have created the tables with appropriate relationships, constraints, and triggers for the data model. Each table also has multiple rows of sample data inserted.

1. Do you need any additional attributes for any specific entity?
2. Any specific integrity constraints or business rules you want to implement in this data model?

Create SQL Script

Type your message here

SQL Format
**Oracle SQL**
Quick SQL

- Create your **Own Schemas** from a Prompt
- Generate scripts either in **Oracle SQL** or **Quick SQL format**
- Build a **Data Model** and generate **Sample Data**



# Create App from a Prompt

**APEX Assistant** [Close]

[User] Let's create an app together. Describe the app you want to create, including the data or tables it will use.

[Assistant] Build an app on project tasks, project status, project milestones, project task todos, and projects, that includes pages for a smart filters, classic report, chart, and interactive report. [RT]

[User] Sure, I can create an application called **Project Management Suite** with the following pages:

- Smart Filters on Projects ( Smart Filters on `EBA_PROJECTS` )
- Smart Filters on Project Milestones ( Smart Filters on `EBA_PROJECT_MILESTONES` )
- Project Milestones Report ( Classic Report on `EBA_PROJECT_MILESTONES` )
- Projects Status Chart ( Chart on `EBA_PROJECTS` )
- Interactive Projects Report ( Interactive Report on `EBA_PROJECTS` )

With the following features enabled: **Install Progressive Web App, Push Notifications.**  
Would you like to create the application now? Or, if you have any changes, just let me know below!

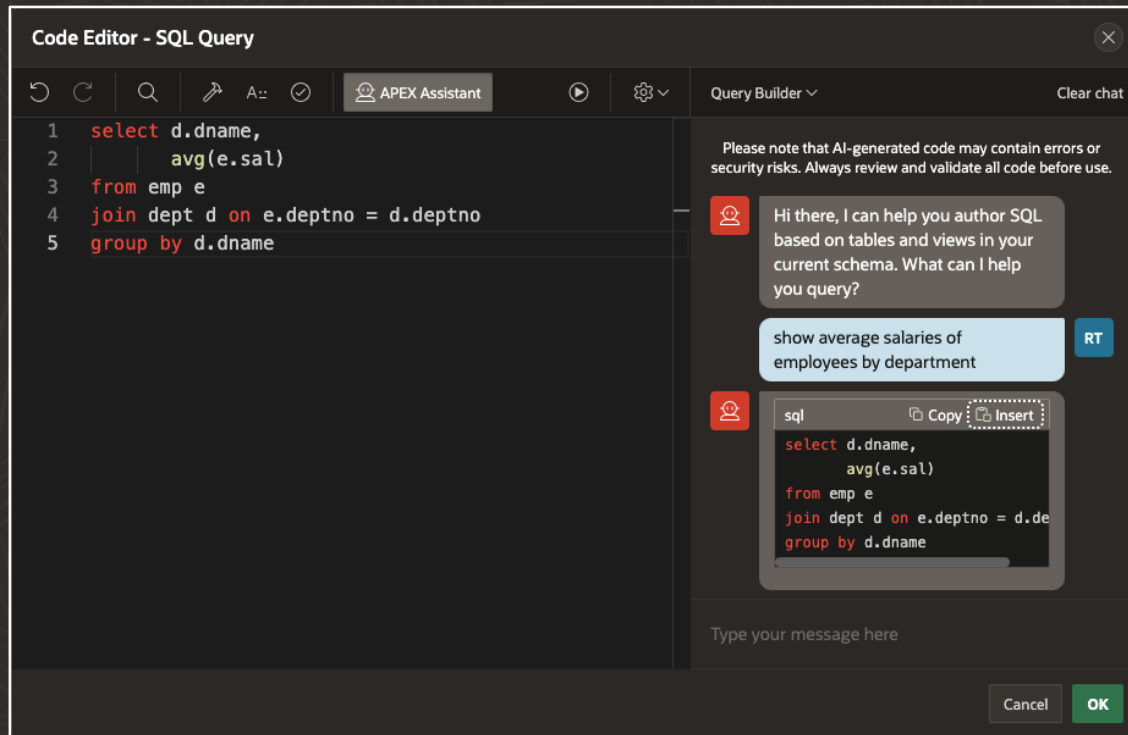
[Create Application]

Type your message here

- Generate **Application Blueprint** based on a Prompt
- Leverages **APEX Dictionary Cache** to identify relevant tables.
- Further, **enhance the generated blueprint** with additional instructions



# APEX Assistant in Code Editors



- APEX Assistant in Code Editors leverage **Generative AI Services**
- Leverages **APEX Dictionary Cache** to identify relevant tables
- **Generate SQL Queries** for form and report regions using the Query Builder mode
- **Generate PL/SQL, JavaScript, HTML, and CSS Code** using the General Assistance mode
- **Improve & Explain** Quick Actions help improve and understand the selected code



# What are AI Configurations?

Application 124 \ Shared Components \ Generative AI Configurations \ Create / Edit

## Generative AI Configuration

Cancel Delete Apply Changes

Show All Identification Subscription Generative AI RAG Sources Advanced Comments

### Identification

\* Name Summarize Project Details

\* Static ID summarize\_project\_details

### Subscription

Subscribe From

This is the "master" copy of this Generative AI Configuration.

No Generative AI Configuration subscribed to this configuration.

### Generative AI

Service Application Default

### System Prompt

APEX Assistant

1 Analyze the provided information and generate a concise summary in a single paragraph.

- **AI Configurations** centralize key Generative AI settings.
- Customizable **System Prompt, Welcome Message,** and **RAG Sources.**
- Use it in both the **Show AI Assistant** and **Generate Text with AI** Dynamic Actions
- Accessible via the **APEX\_AI PL/SQL API** for seamless integration.



# RAG Sources - Overview

**RAG Source** Cancel Delete Apply Changes

Show All Identification Description Source Advanced Server-Side Condition Security Configuration Comments

**Identification**

Name

**Description**

Description

**Source**

Type

SQL Query

```

1 SELECT
2   'Project Name : '
3   || PROJECT_NAME
4   || CHR(10)
5   || CHR(13)
6   || 'Milestone Title : '
7   || MILESTONE_TITLE
8   || CHR(10)
9   || CHR(13)
10  || 'Task Name : '
11  || TASK_NAME
12  || CHR(10)
13  || CHR(13)
14  || 'Task Status : '
15  || TASK_STATUS

```

**Advanced**

Maximum Tokens

- Use **RAG Sources** to enrich AI conversations with application-specific data.
- Can include **SQL Queries**, **Function Bodies Returning CLOB**, or **Static Text**.
- Use **Authorization Schemes** or **Server-side Conditions** to control which RAG data is included.
- Use **APEX\$AI\_ALL\_USER\_PROMPTS** and **APEX\$AI\_LAST\_USER\_PROMPT** bind variables for custom RAG logic
- Utilize the **AI Configuration** in **Show AI Assistant** and **Generate Text with AI Dynamic Actions**



# Generate Text with AI - Overview

Generate a **one-time response** based on user content

Leverages **Generative AI services**

Can also leverage centralized settings defined in **AI Configurations**

Configurable **System Prompt, Input Value, and Use Response** attributes

The screenshot shows the APEX page editor interface. On the left, the component tree shows a page titled 'Page 13: Generate Text using AI' with a 'GenerateTextWithAI' component. The main editor area shows a 'Generate Text using AI' action configuration. The configuration includes:

- Identification:** Name (empty), Action (Generate Text With AI).
- Generative AI:** Configuration (- Select -), Service (Open AI), System Prompt (Write a short song that includes all the fruits from the given JSON array. Print only the song, nothing else.).
- Input Value:** Type (Item), Item (P13\_FRUITS).
- Use Response:** Type (Item), Item (P13\_GENERATED\_EMAIL).

The page layout shows a banner, navigation bar, and a body containing a 'P13\_FRUITS' item and a 'GenerateSong' button.

The screenshot shows the generated email content. It includes a list of fruits (Apple, Mango, Banana, Cherry) and a 'Generate Song' button. The generated email text is:

Generated Email

Sure, here's your song:

(Verse 1)  
Apple, Mango, Banana, Cherry,  
Fruits that make our spirits merry,  
In my basket, they're all so bright,  
Each one a color to delight.

(Chorus)  
Apple so crisp, Mango so sweet,  
Banana gives us energy, it can't be beat,  
Cherry on top, oh what a treat,  
Together they make life complete.

(Verse 2)  
Apple juice to start the day,  
Mango smoothies on the way,  
Banana bread when skies are gray,

# Show AI Assistant Dynamic Action - Overview

A **Native Dynamic Action** in Oracle APEX which opens an AI Chat User Interface

Leverages **Generative AI Services** configured under Workspace Utilities

Leverages **Generative AI Services** configured under Workspace Utilities

Rendered **Inline** or as a **Dialog**

Configurable **System Prompt** and **Welcome Message**

The screenshot displays the Oracle APEX workspace configuration for the 'Show AI Assistant' dynamic action. The left pane shows the component tree with 'Show AI Assistant' selected under 'Dynamic Actions'. The main workspace shows the configuration for the 'Show AI Assistant' dynamic action, including the following sections:

- Identification:** Name (Project Dashboard), Action (Show AI Assistant).
- Generative AI:** Configuration (Analyze Projects with AI).
- Appearance:** Display As (Dialog), Title (Project Dashboard).
- Initial Prompt:** (Empty field).
- Use Response:** (Checked).
- Quick Actions:** Message 1 (Open Tasks), Message 2 (Closed Tasks).

The right pane shows the 'Assistant' dialog box with the following content:

Assistant

Open Tasks RO

Here are the open tasks from the provided information:

- Project Name:** Project Alpha
  - Milestone Title:** Milestone Alpha 1
  - Task Name:** Task Alpha 1
  - Task Status:** pending
- Project Name:** Project Alpha
  - Milestone Title:** Milestone Alpha 2
  - Task Name:** Task Beta 1
  - Task Status:** in progress

What is the status of Project Beta? RO

There is no specific task status mentioned for Project Beta in the provided information.

**Project Beta details:**

- Milestone Title:** Milestone Beta 1

Type your message here

# What are Vector Providers?

The screenshot shows the 'Vector Provider Details' page in Oracle APEX. The page title is 'Vector Provider DB ONNX Model'. There are three tabs: 'Show All', 'Identification', and 'Local Embedding'. The 'Identification' tab is active. It contains the following fields:

- Provider Type:** A dropdown menu with options: '- Select -', 'Database ONNX Model' (selected), 'Generative AI Service', and 'Custom PL/SQL'.
- Name:** A text input field.
- Static ID:** A text input field containing 'db\_onnx\_model'.
- Local Embedding:**
  - ONNX Model Owner:** A dropdown menu with 'ROOPESH' selected.
  - ONNX Model Name:** A dropdown menu with 'DOC\_MODEL' selected.

Buttons for 'Cancel', 'Delete', and 'Apply Changes' are located at the top right of the form.

- A **Vector Provider** enables you to convert text into an embedding
- Available **Provider Types**: Database ONNX Model, Generative AI Service, Custom PL/SQL
- Vector Providers are stored at the **Workspace level**
- Use **APEX\_AI.GET\_VECTOR\_EMBEDDINGS** PL/SQL API to generate embeddings
- Available exclusively on **Oracle Database 23ai**



# Vector Search Support in Search Configurations - Overview

### Search Configuration: Search Movies - Vector

Cancel Delete **Apply Changes**

Show All Settings Subscription **Source** Column Mapping Icon and Display Link Server-Side Condition Advanced

#### Vector Attributes

Provider: ONNX Model

\* Column Name: OVERVIEW\_V (Vector)

Search Type: Exact

Distance Metric: Cosine

#### Column Mapping

* Primary Key Column	Primary Key Column 2	
ID (Number)	- Select Column -	
* Title Column	Subtitle Column	Description Column
TITLE (Varchar2)	- Select Column -	OVERVIEW (Varchar2)
Custom Column 1	Custom Column 2	Custom Column 3
- Select Column -	- Select Column -	- Select Column -
Badge Column	Score Column	Last Modified Column
- Select Column -	- Select Column -	- Select Column -

#### Icon and Display

Icon Source: Initials

- Available exclusively on **Oracle Database 23ai**
- Create **Search Configurations** on the table with Vector Data type columns
- Configure **Index Usage, Distance Metrics, Max Vector Distance, and Max Results**
- Results are returned based on **Vector Similarity**



## APEX + AI Video Links

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Build AI-Powered Enterprise Apps Faster with Oracle APEX

[apex.oracle.com/go/apex241-launch](https://apex.oracle.com/go/apex241-launch)

Create and Maintain SQL Using Natural Language with APEX AI Assistant: Demo

[apex.oracle.com/go/apex-assistant-video](https://apex.oracle.com/go/apex-assistant-video)

Power Semantic Search with Oracle APEX and AI Vector Search: Demo

[apex.oracle.com/go/apex-vs-video](https://apex.oracle.com/go/apex-vs-video)

# Security

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# Oracle APEX – Security

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Oracle APEX is designed to build highly secure web apps out of the box. A new instance admin security parameter enables the use of database credentials instance-wide.

In a world of constantly changing web standards and increasingly resourceful attackers finding new ways to hack sites, our focus on security means that your applications stay protected.

- Authentication and Authorization
- Session Management
- Secure by Default
- Support for SSO
- APEX Advisor



# Authentication and Authorization

---

Authentication is the process of identifying who is accessing the application, while Authorization defines whether the user has permission to use an application or parts of it.

## Authentication Schemes

Oracle APEX comes with a comprehensive set of built-in authentication schemes that make it simple to integrate .

## Authorization Schemes

Define access to your application, pages and page components with authorization schemes. Use the built-in Application Access Control to manage users and roles. Authorization can be applied to Items, Regions, Pages, process, etc.,

## Extensibility

Developers can easily extend Oracle APEX by writing custom authentication and authorization schemes in SQL and PL/SQL.



# Session Management

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Server-side session management is used for a user's interactions with an application. This is linked to a secure session cookie, which is an intrinsic part of Oracle APEX.

## Session Control

Sessions are defined by a browser cookie value and an ID in the URL, which are long random values that an attacker can not guess to take over a user's session. Built-in timeouts guarantee that the session automatically terminates when a user is away for too long.

## Item Session State

Application and page items save their values in the session state, optionally in an encrypted form. Developers can access and manipulate the values in SQL and PL/SQL via bind variable syntax, which prevents SQL Injection.

## Collections

Oracle APEX Collections are non-scalar, multi-row, and multi-column session data. Developers can manage collections via PL/SQL APIs and views.



# Secure by Default

---

While providing developers with full control, Oracle APEX generates applications with highly secure settings right out of the box.

## Parameter Tampering Protection

Oracle APEX uses checksums to prevent users from manipulating parameters in the URL and when saving changes.

## XSS Prevention

Cross-site scripting (XSS) occurs when attackers save malicious data on a website and the site renders this data as code that executes in the user's browser.

Oracle APEX components escape all output by default to prevent this class of attacks.

## Advisor and other tools

Developers can run the Oracle APEX Advisor to check their applications for settings that make them less secure or inconsistencies that attackers could exploit.



# Use Cases

---

# Transform Your Spreadsheets to Web Apps in Minutes

Upload your spreadsheet and convert it into a cloud application with a few clicks!

## ★ Features

- Drag and Drop an XLS, CSV, XML, or JSON file
- Create a table in the Autonomous Database
- Upload data into the new table
- Create an App based on the new table

## ✓ Solutions

- Single source-of-truth
- Send out a URL, not a file
- Secure, scalable, multi-user app
- Extend with Charts, Calendars, Validations, and more



Spreadsheet



APEX Application

# Rapid Application Development

Build new business and productivity apps

## ★ Features

- Build apps in days/weeks not months/years
- Use powerful wizards to create fully featured apps
- Easily modify to meet changing requirements
- Rapidly iterate to a production-ready app
- Low-code capabilities allow non-IT professionals to also build or help build apps



## ✓ Solutions

- Opportunistic
- Simplistic, tactical apps to meet immediate need
- Webify paper processes
- Generally developed by one or two people

# Modernizing Oracle Forms

Evolve your Forms Apps to APEX apps and unlock limitless possibilities!

## ★ Features

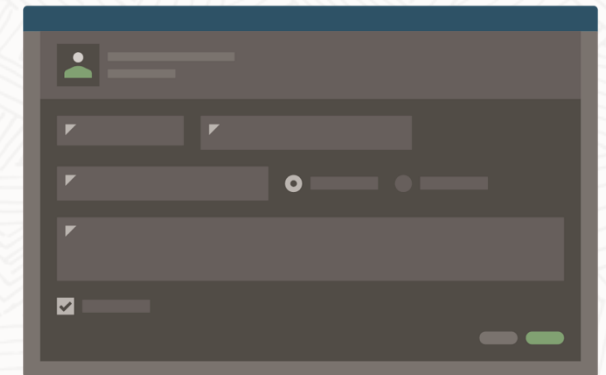
- APEX is the natural evolution of Forms
- Both are based on SQL and PL / SQL
- Re-use DB packages, procedures, functions
- Easily train Forms Developers into developing with APEX

## ✓ Solutions

- Proof-of-concept using the subset of Forms apps
- Organization-wide apps, rather than back-office
- External apps for customers/partners
- Mobile-first apps
- Net new requirements



Forms App



APEX Application

# Extending Enterprise Systems

Enhance your existing apps by building APEX apps!

## ★ Features

- Extend ERPs and other enterprise software
- Provide organization-specific dashboards
- Improved workflows
- Fill gaps

## ✓ Solutions

- Meet non-standard requirements
- Optimize common business functions
- Enhance data capture
- Integrate disparate data sources

See: [Extend E-Business Suite using APEX](#)  
[Official Technical paper](#)



# Mission Critical Enterprise Systems

## ★ Features

- Quickly build custom mission-critical apps
- Corporate data reporting and maintenance
- Merge separate data silos
- Build organization-wide self-reporting apps

## ✓ Solutions

- Simple deployment
- Single installation runs any number of apps
- Scale to hundreds of thousands of users
- Leverages enterprise features of Oracle Autonomous



# Product Components

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# Home Page

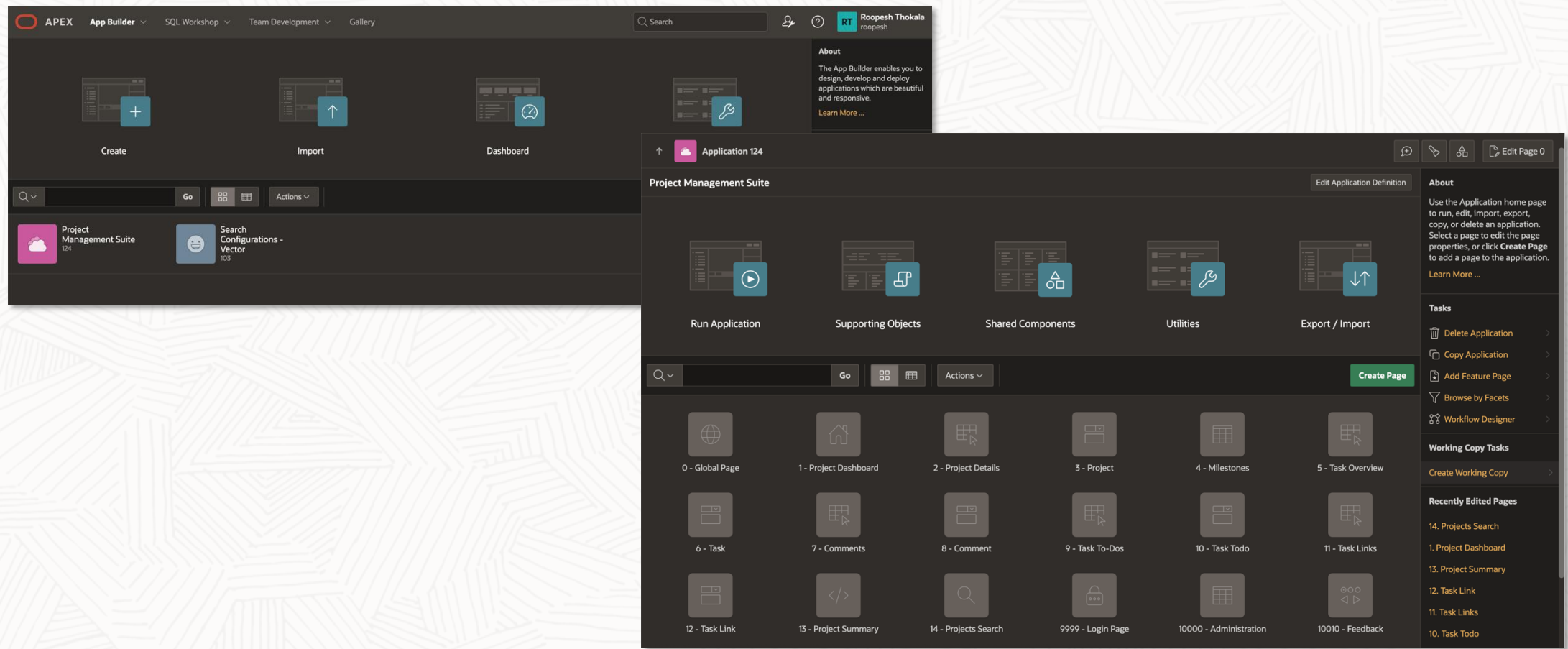
## Comprehensive Development IDE, Web Application Development, and SQL Database Development

The screenshot displays the Oracle APEX Home Page. At the top, there is a navigation bar with the APEX logo and menu items: App Builder, SQL Workshop, Team Development, and Gallery. A search bar and user profile (RT Roopesh Thokala) are also present. The main content area features four large tiles: App Builder (with a blue icon), SQL Workshop (with a green icon), Team Development (with a yellow icon), and Gallery (with a red icon). Below these tiles, there are three sections: 'Top Apps' (empty), 'Top Users' (showing Roopesh Thokala with 12 users), and 'Summary' (showing 4 Applications, 12 Tables, and 1 Developers). A 'Workspace Message' section indicates 'No Workspaces Message'. An 'Available Updates' section shows 'System is up-to-date'. On the right side, there is a sidebar with 'About' (describing Oracle APEX as a low-code platform), 'Learn More' (with links to APEX Website, Blog, Tutorials, Videos, Educational Resources, Ideas & Feature Requests, and apex.world), and 'Social' (with icons for X, LinkedIn, Facebook, and YouTube).



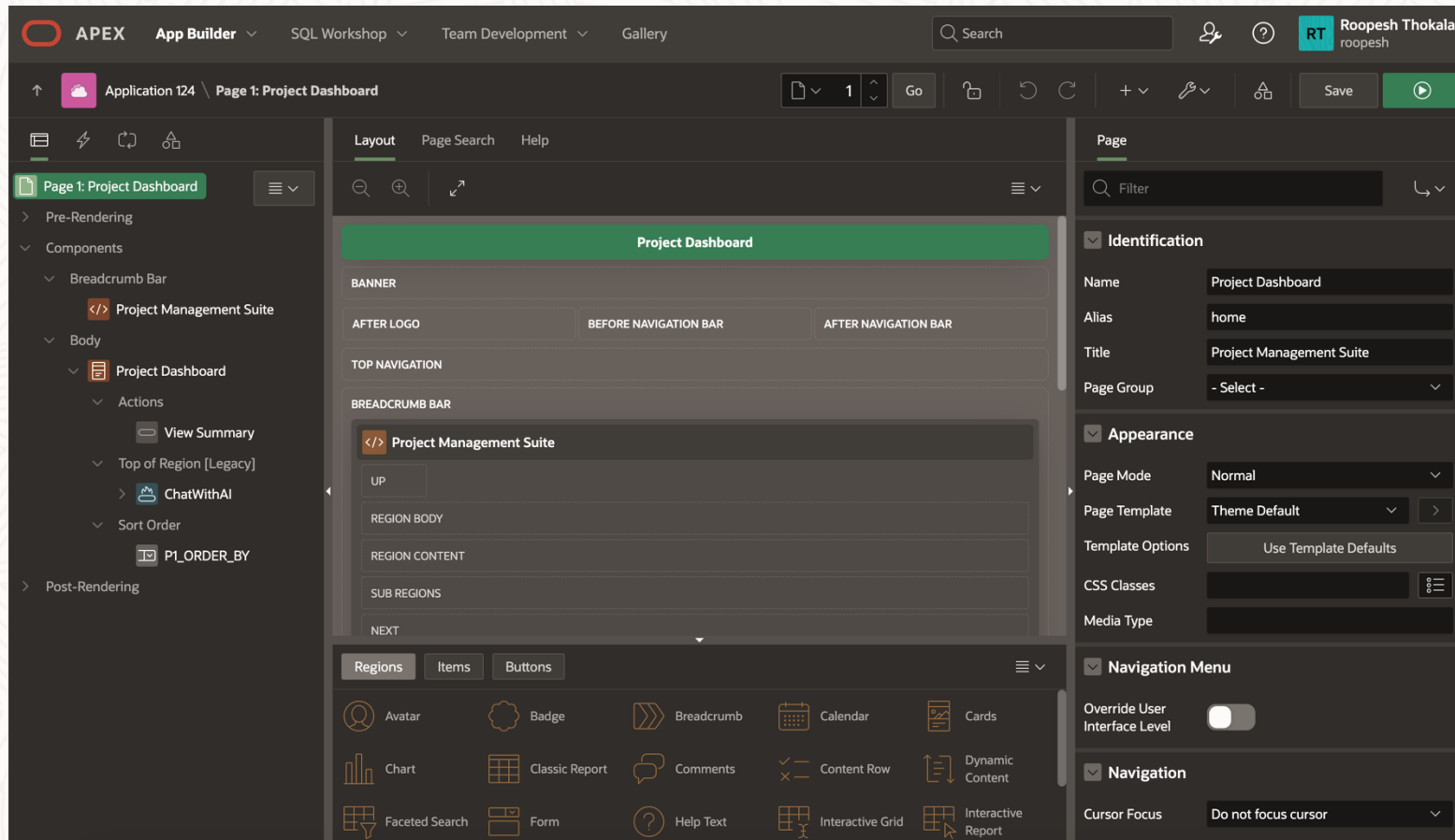
# App Builder

**Integrated Development Environment (IDE) with Application Development, and Graphical "Page Designer" Features tight SQL and PL/SQL integration**



# App Builder – Page Designer

**Page Designer is a comprehensive Integrated Development Environment (IDE) equipped with a toolbar and multiple panes, offering a full range of features for efficient development.**



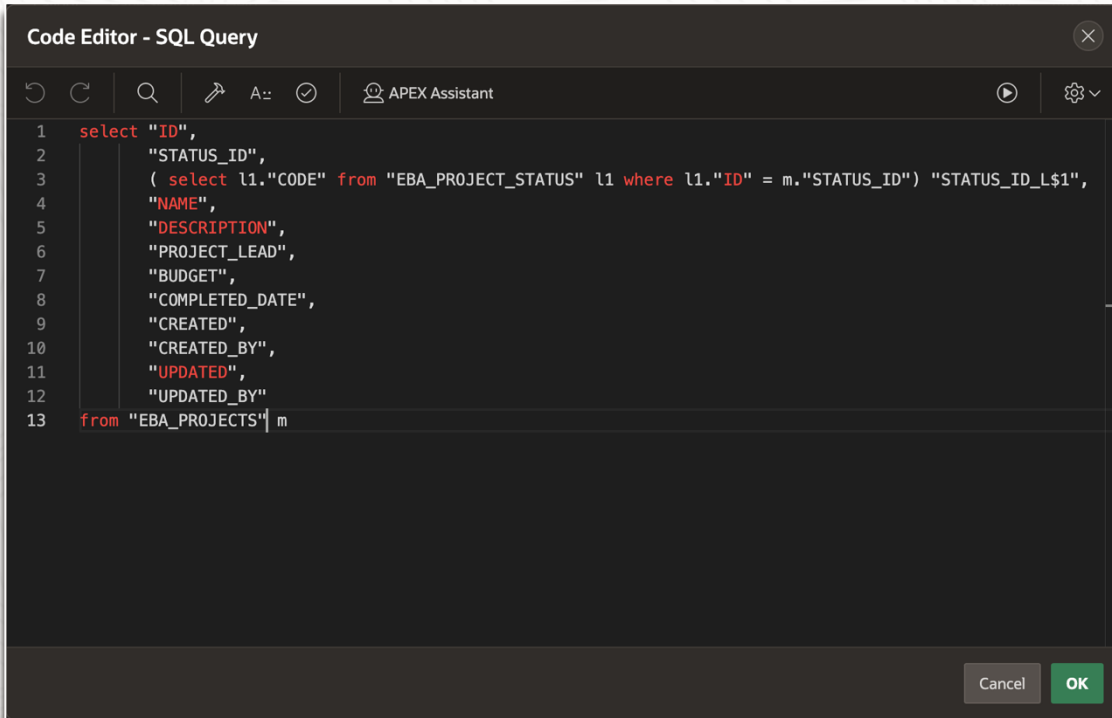
# App Builder – Page Designer

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- Multiple trees to view the page components
- Visualization of the page within the Grid Layout and associated Gallery, allowing you to drag and drop components
- Update multiple attributes without leaving the page in the Property Editor
- Advanced Code Editor for defining SQL, HTML, CSS, and text sections
- Highly configurable user interface:
  - Customize and refine the view of the page specific to the current focus
  - Slideable panels
  - Drag and drop tabs

# App Builder – Code Editor

Available for maintaining SQL, PL/SQL, JavaScript, HTML, CSS and large text sections



The screenshot shows a code editor window titled "Code Editor - SQL Query". The editor contains the following SQL query:

```
1 select "ID",
2     "STATUS_ID",
3     ( select l1."CODE" from "EBA_PROJECT_STATUS" l1 where l1."ID" = m."STATUS_ID") "STATUS_ID_L$1",
4     "NAME",
5     "DESCRIPTION",
6     "PROJECT_LEAD",
7     "BUDGET",
8     "COMPLETED_DATE",
9     "CREATED",
10    "CREATED_BY",
11    "UPDATED",
12    "UPDATED_BY"
13 from "EBA_PROJECTS" m
```

The query is displayed with syntax highlighting: keywords like "select", "from", "where", and "from" are in red; string literals are in blue; and identifiers are in black. Line numbers 1 through 13 are visible on the left side of the editor. The editor has a dark theme and includes a toolbar with icons for undo, redo, search, and APEX Assistant. At the bottom right, there are "Cancel" and "OK" buttons.

- **APEX Assistant**
- Syntax Highlighting
- Undo / Redo
- Find/Replace
- Auto completion
- Code validation
- Used in Page Designer, Component View
- and SQL Workshop

# App Builder – Universal Theme

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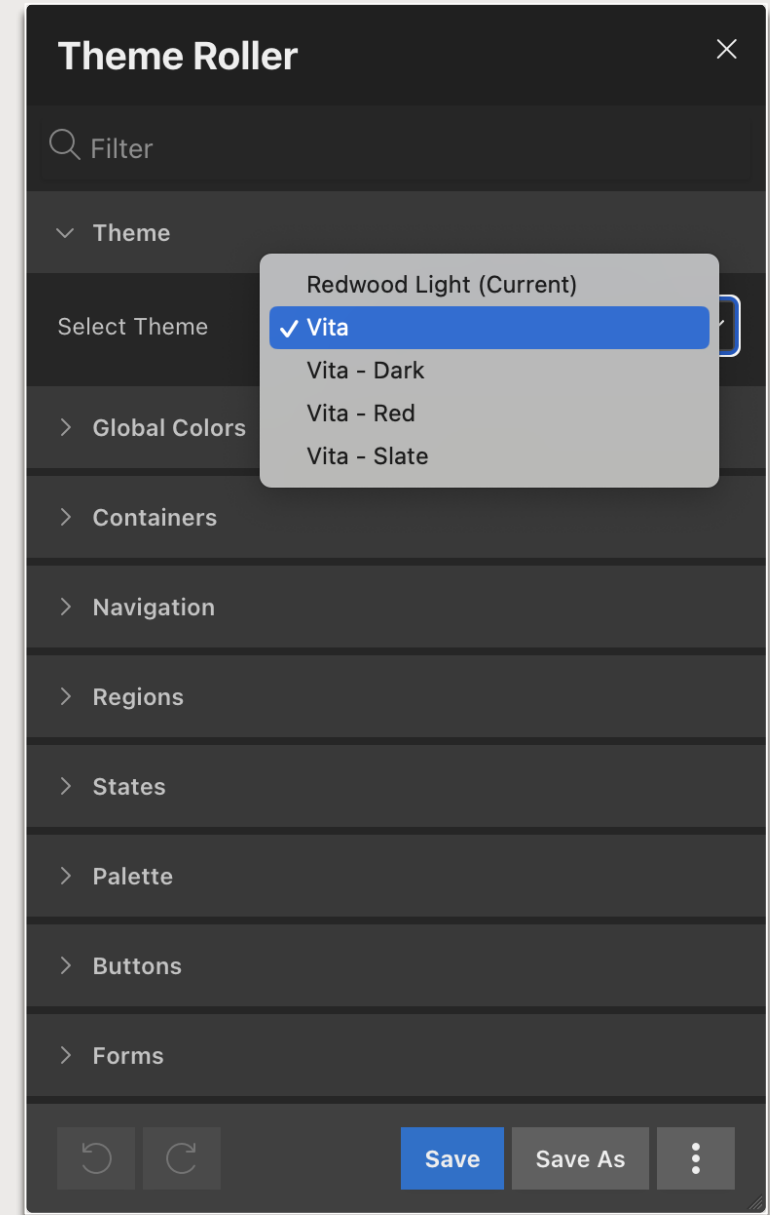
- The default theme for Oracle APEX applications
- Uses responsive HTML5 templates
- Grid-layout for HTML forms
- Modern flat-look
- Ships with a variety of pre-built theme styles
- jQuery Mobile Apps can be transitioned to Universal Theme



# App Builder – Universal Theme

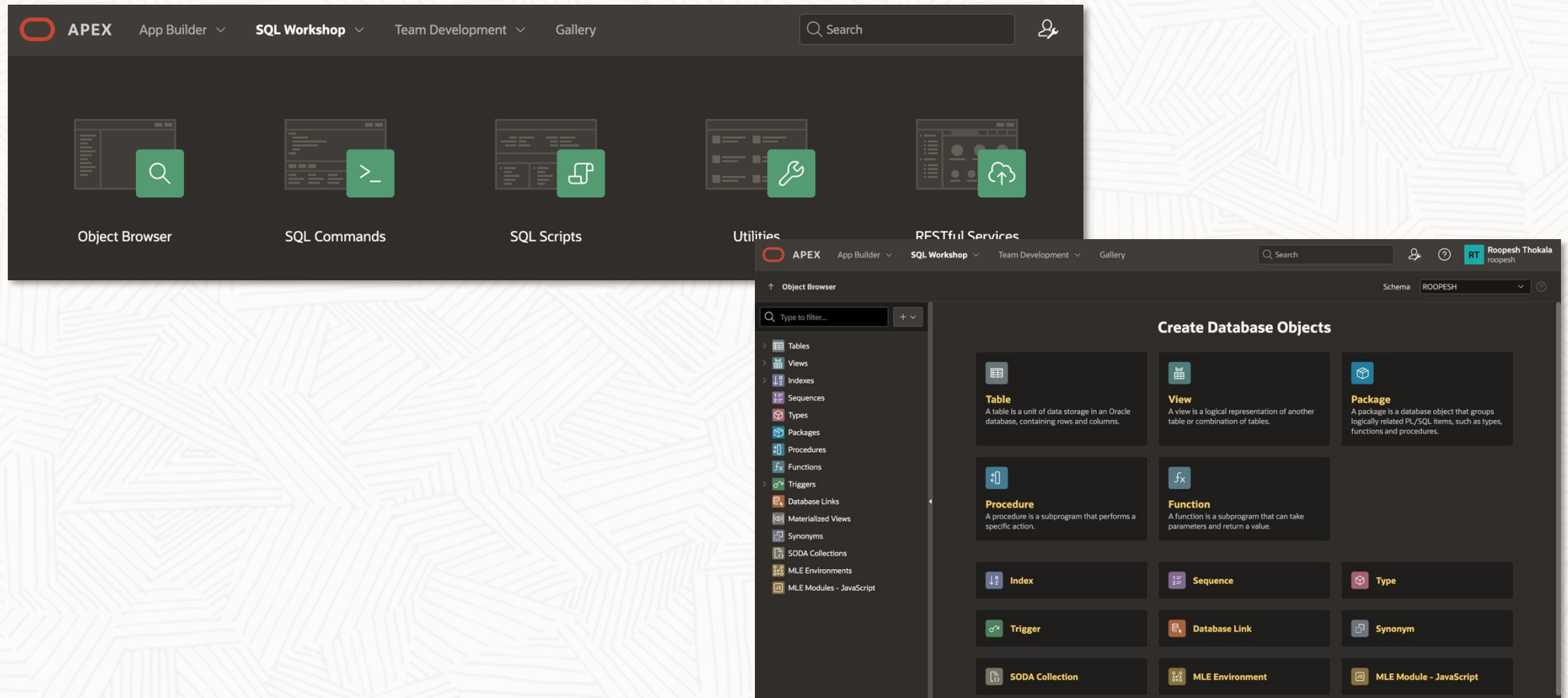
## Theme Styles and Theme Roller

- Theme Styles provide a variety of different color schemes and styles for a single theme
- Defined as CSS file that is included in addition to the theme's base CSS file
- Universal Theme includes several pre-built styles
- Additional styles can be easily generated using the built-in Theme Roller utility



# SQL Workshop

Browser-based maintenance of database objects and data  
Designed to meet application developers' needs, especially in hosted environments



# SQL Workshop – Quick SQL

**Rapidly design and prototype data models using a markdown-like shorthand syntax that expands to standards-based Oracle SQL.**

```
1 departments /insert 4
2   name /nn
3   location
4   country
5 employees /insert 14
6   name /nn vc50
7   email /lower
8   cost center num
9   date hired
10  job vc255
11
12 view emp_v departments employees
```

```
1 -- create tables
2
3 create table departments (
4   id          number generated by default on null as identity
5             constraint departments_id_pk primary key,
6   name        varchar2(255 char) not null,
7   location    varchar2(4000 char),
8   country     varchar2(4000 char)
9 );
10
11
12 create table employees (
13   id          number generated by default on null as identity
14             constraint employees_id_pk primary key,
15   department_id number          constraint employees_department_id_fk
16             references departments,
17   name        varchar2(50 char) not null,
18   email       varchar2(255 char),
19   cost_center number,
20   date_hired  date,
21   job         varchar2(255 char)
22 );
23
24 -- table index
25 create index employees_i1 on employees (department_id);
26
27
28
29
30 -- triggers
31 create or replace trigger employees_biu
32   before insert or update
33   on employees
```



# Team Development

**Team Development has been reimagined as a new and more flexible way to collaborate with peers/teammates and track tasks, features, bugs, and feedback.**

The screenshot displays the Oracle APEX Team Development interface. At the top, there is a navigation bar with 'APEX', 'App Builder', 'SQL Workshop', 'Team Development', and 'Gallery'. A search bar and user profile 'Roopesh Thokala' are also visible. The main content area shows an issue titled 'Welcome to Team Development in Oracle APEX!' created by Roopesh Thokala. The issue content includes a greeting, instructions on how to use issues, a sample of Markdown formatting (Latin text), and a code block. The right sidebar contains sections for 'About', 'Assignees', 'Labels', 'Milestones', 'Notifications', and 'Attachments'.

**Welcome to Team Development in Oracle APEX!**  
#1 Opened 77 seconds ago by Roopesh Thokala · 0 comments

RT Roopesh Thokala Created this issue 77 seconds ago

Hi there!

This is your very first issue! You can create issues to keep track of tasks, features, bugs, and feedback for all of your APEX projects! You can add labels to issues, add assignees, set milestones, and even apply formatting using Markdown shorthand!

Below is a quick sample of what you can do with Markdown:

## Orionis bellica Stygias partes Solibus an rutilus cornu

Lorem markdownum formosae. *Est medio* et illi adunca? Miserum Phaethon, Editus, abrupta colonos; Aeeta annum; facere pruniceum **domat**, discussisque saevo, Tereo. *Quid noctis adhuc, nisi nemo dignos, aures sonus mentae conspecta?*

```
device_intranet_cloud(page_disk);
if (81 >= scanner + realityHoneyPot + intellectual_heuristic) {
  ataDataWeb -- fileWormCamera + hypertext;
  hdtv(-3 - 2);
  folder(controlHtml, model - 5);
}
```

## Consortia dum mea aethere Deionidenque vixque est

Forma duris igne duritiem Minervaet transformabantur, moriemur manibusque nulla eripienda est rima grave tu. Illis succedat fit. Ter amo quod plurima, non ab

**About**  
Issue Details enables you to manage the life of an issue. On the main page you'll see the issue timeline showing all events and comments in order of occurrence. On the right you'll see the options that help classify the issue.  
[Learn More ...](#)

**Assignees**  
No Users Assigned

**Labels**  
No Labels Assigned

**Milestones**  
No Milestones Assigned

**Notifications**  
Subscribe

**Attachments**  
[View Attachments](#)



# Gallery

The screenshot displays the Oracle APEX Gallery interface. At the top, the navigation bar includes the APEX logo, dropdown menus for 'App Builder', 'SQL Workshop', and 'Team Development', and the 'Gallery' tab. A search bar and user profile 'Roopesh Thokala' are also visible. Below the navigation, there are tabs for 'Sample Apps', 'Starter Apps', 'Utility Apps', and 'Custom Apps'. The main content area features a grid of application cards. Each card includes an icon, a title, a brief description, a version number, and an 'Install' button. The cards shown are: 'APEX PWA Reference' (version 23.2.0), 'Brookstrut Sample App' (version 23.2.1), 'Sample Application Search' (version 23.2.0), 'Sample Calendar' (version 23.2.0), 'Sample Cards' (version 23.2.0), 'Sample Charts' (version 23.2.0), and 'Sample Collections' (version 23.2.0). A modal window is open over the 'Sample Collections' card, displaying details for 'Oracle Cloud Apps REST Data Source Explorer' (version 24.1.0). The modal includes a description of the application's functionality and an 'Install' button.

**APEX PWA Reference**  
Oracle  
Oracle APEX enables developers to build Progressive Web Apps (PWAs) that can be installed on any desktop or mobile device to deliver a more native app experience. This application serves as a reference for key PWA features in APEX and how you can use them in your own apps.  
23.2.0  
Install

**Brookstrut Sample App**  
Oracle  
The Brookstrut sample application analyzes a simplified stored data model and includes a feature to generate random data, accommodating everything from small to extra large data sets. It showcases Oracle APEX's capabilities in data reporting, navigation, and data presentation. This tool allows you to explore various Oracle APEX components, including faceted search, interactive reports, content row reports, and calendars.  
23.2.1  
Install

**Sample Application Search**  
Oracle  
This application showcases the Application Search feature, introduced with APEX 23.2.0. It demonstrates how developers can add robust search functionality to their APEX applications using the Application Search Configurations and Search Filters components.  
23.2.0  
Install

**Sample Calendar**  
Oracle  
This application highlights the native calendaring capabilities of Oracle APEX.  
23.2.0  
Install

**Sample Cards**  
Oracle  
This application highlights Cards regions in Oracle APEX. Cards regions are a native region type. They provide developers with a powerful and flexible new way to display data in bite-sized blocks, ideal for use in faceted search, or presenting at-a-glance information.  
23.2.0  
Install

**Sample Charts**  
Oracle  
This application highlights the charting capabilities of Oracle APEX. It demonstrates how you can enhance your applications to visually represent your data, using declarative and plug-in based charting solutions.  
23.2.0  
Install

**Sample Collections**  
Oracle  
Sample Collections enable you to store and manage data for use within an Oracle APEX application. This application illustrates how to create and manage collections.  
23.2.0  
Install

**Oracle Cloud Apps REST Data Source Explorer**  
Oracle  
This application shows all Oracle Cloud Applications REST Data Sources in the apps in your workspace and helps you retrieve useful, searchable reference info about them including business object attributes and child objects available. It also lets you discover what other REST endpoints are available for use. Easily copy REST endpoint URLs for List of Values, child objects, and other available services to the clipboard for use in the APEX Builder's Create REST Data Source wizard.  
24.1.0  
Install

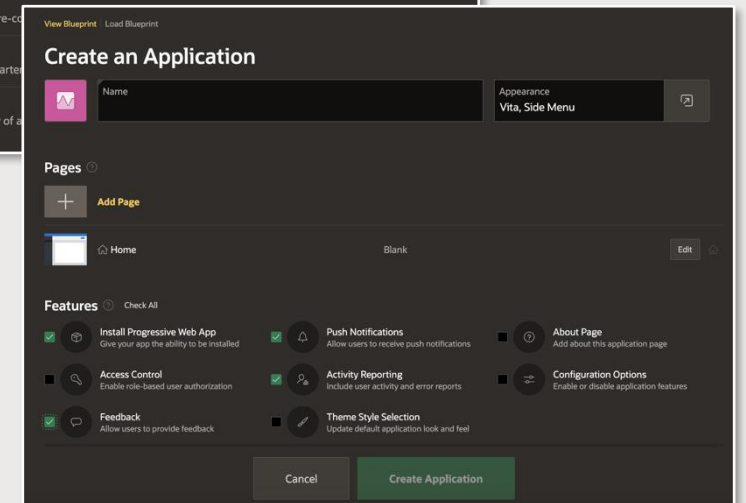
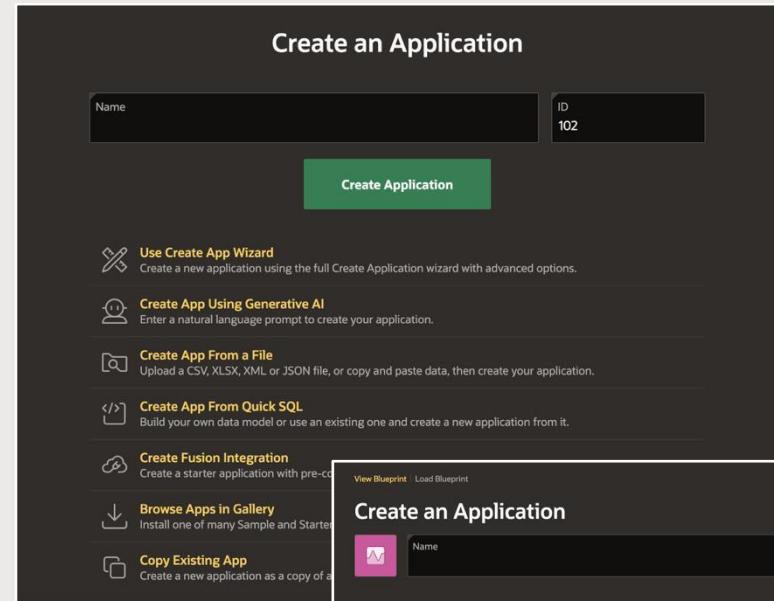


# Features

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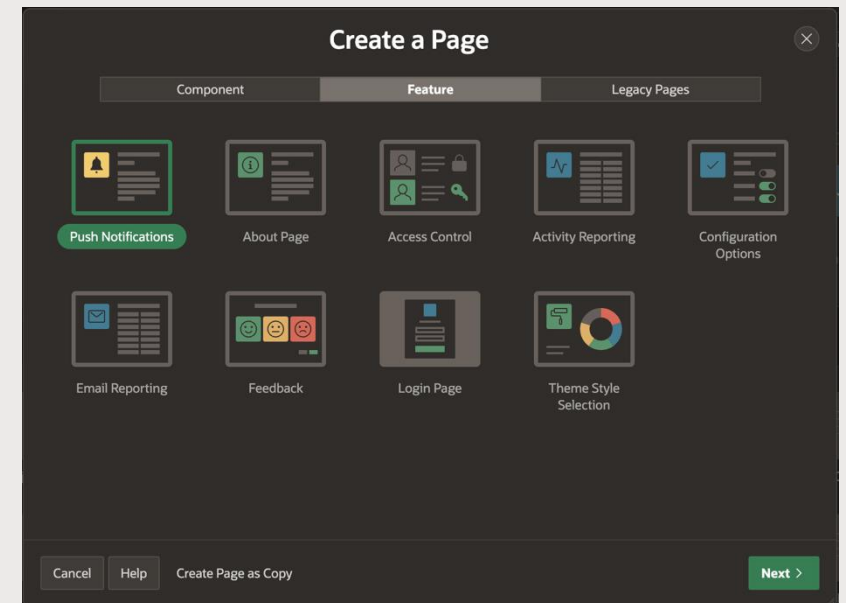
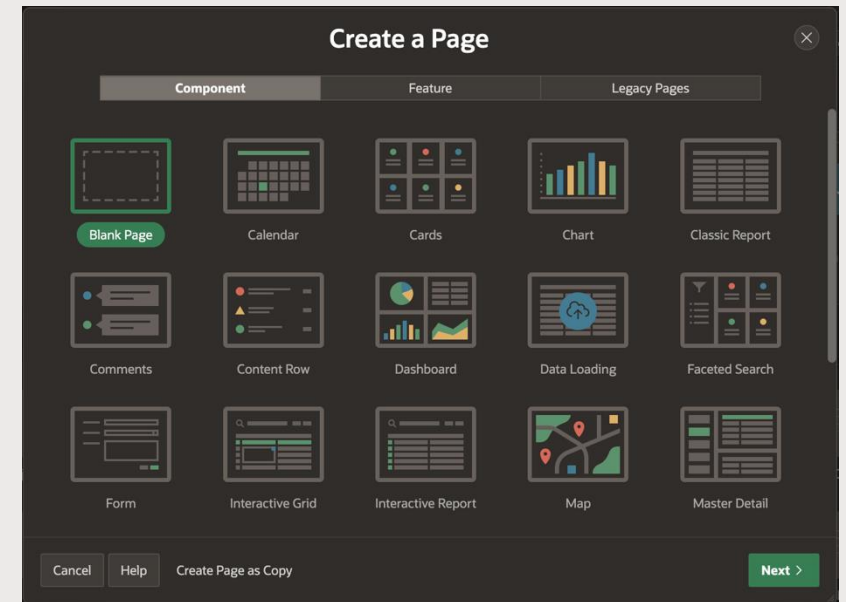
# Create Application Wizard

- Simple, modern wizard for creating pages.
- Allows creation of numerous page types including Dashboards, Master-Detail, etc.
- Supports adding common frameworks or "Features" when creating an application such as access control, activity reporting, theme selection, and more
- Customize user interface options such as Theme Style, application icon, and page icons



# Create Page Wizard

- Simple, modern wizard for creating individual pages in an existing app.
- It allows the creation of more advanced pages, such as Dashboards, additional Master-Detail page types, List Views, mobile-first reports, and more.
- Supports adding common frameworks or "Features" to an existing application such as access control, activity reporting, theme selection, and more



# Interactive Reports

Powerful Reporting capabilities → End-user customizable

### Interactive Report

Qv  Go 1. Primary Report Actions

	Project	Task Name	Start Date ↑	End Date	Status	Assigned To	Cost	Budget	Available Budget
	Bug Tracker	Document quality assurance procedures	24-MAR-24	27-MAR-24	Closed	Myra Sutcliff	3,000	2,000	-1,000
	Bug Tracker	Review automated testing tools	28-MAR-24	30-MAR-24	Closed	Myra Sutcliff	750	1,500	750
	Bug Tracker	Implement bug tracking software	12-APR-24	12-APR-24	Closed	Myra Sutcliff	100	100	0
	Discussion Forum	Identify owners	13-APR-24	13-APR-24	Closed	Hank Davis	250	300	50
	Maintain Support Systems	HR software upgrades	16-APR-24	19-APR-24	Closed	Pam King	8,000	7,000	-1,000
	Discussion Forum	Install ACME Web Express application on internet server	19-APR-24	19-APR-24	Closed	Hank Davis	100	100	0
	Bug Tracker	Train developers on tracking bugs	19-APR-24	24-APR-24	On-Hold	Myra Sutcliff	1,000	2,000	1,000
	Maintain Support Systems	Apply Billing System updates	20-APR-24	22-APR-24	Closed	Russ Saunders	9,500	7,000	-2,500
	Public Website	Determine host server	23-APR-24	23-APR-24	Closed	Tiger Scott	200	200	0
	Public Website	Check software licenses	23-APR-24	23-APR-24	Closed	Tom Suess	100	100	0



# Faceted Search

- A powerful way to filter and display your data.
- Faceted Search will make it easier for your users to find the data they want.

### Faceted Search

Search...

▼ Project Clear

- Migrate from Legacy Server (10)
- Client Server Conversion (9)
- ACME Web Express Configuration (7)
- Migrate Desktop Application (7)
- Bug Tracker (5)

[Show All](#)

▼ Assigned To

- John Watson (6)
- Pam King (5)
- Bob Nile (4)
- James Cassidy (4)
- Scott Spencer (3)

[Show All](#)

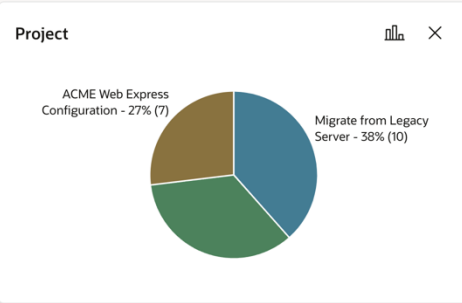
▼ Status

- Pending (14)
- Closed (8)
- Open (4)

Total Row Count 26

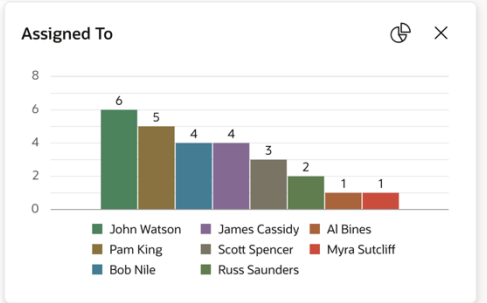
Project Migrate from Legacy Server Client Server Conversion ACME Web Express Configuration Clear All Reset

#### Project



Project	Count
Migrate from Legacy Server	10
ACME Web Express Configuration	7
Migrate Desktop Application	7

#### Assigned To

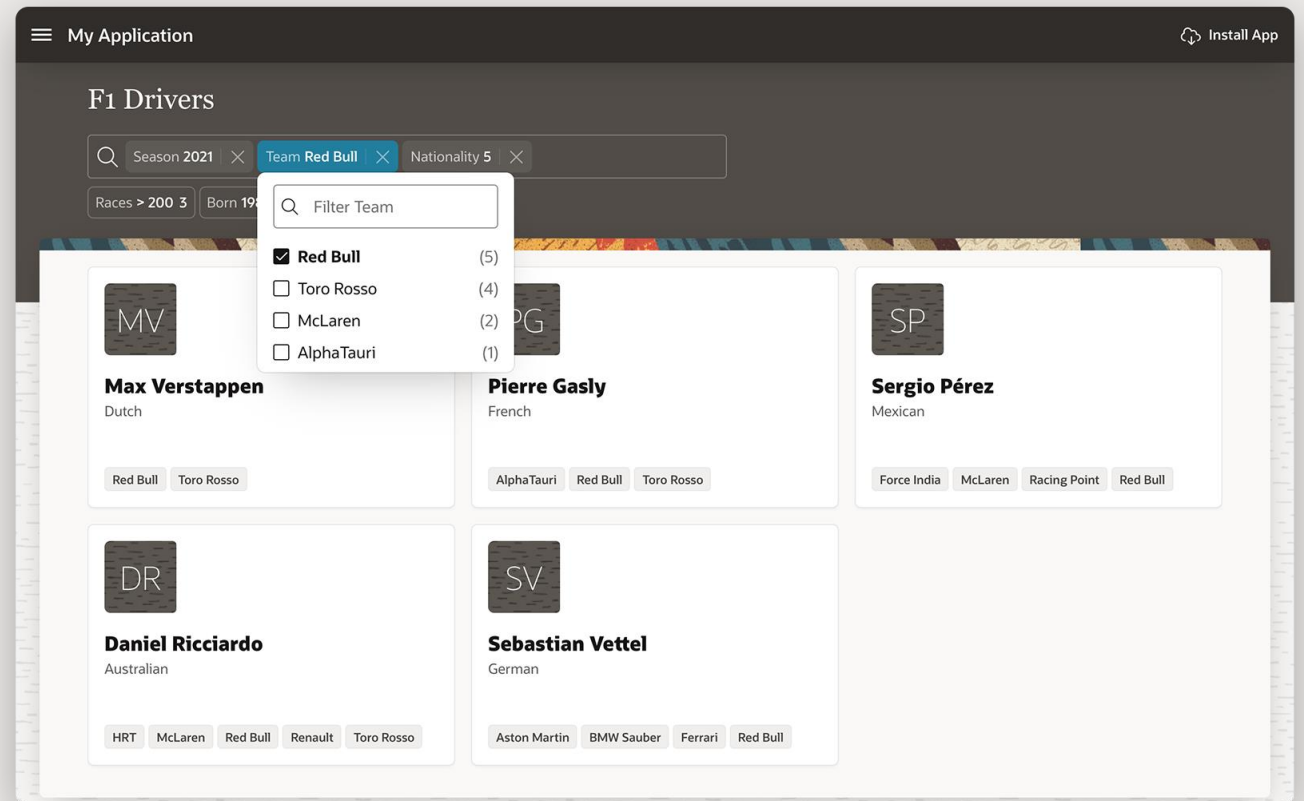


Assigned To	Count
John Watson	6
Pam King	5
Bob Nile	4
James Cassidy	4
Scott Spencer	3
Russ Saunders	2
Al Bines	1
Myra Sutcliff	1

Project	Task Name	Start Date	End Date	Status	Assigned To	Cost	Budget
ACME Web Express Configuration	<a href="#">Specify security authentication scheme(s)</a>	20-MAY-24	20-MAY-24	Open	John Watson	\$200.00	\$300.00
ACME Web Express Configuration	<a href="#">Create pilot workspace</a>	15-MAY-24	15-MAY-24	Closed	John Watson	\$100.00	\$100.00
ACME Web Express Configuration	<a href="#">Run installation</a>	13-MAY-24	13-MAY-24	Closed	James Cassidy	\$200.00	\$200.00

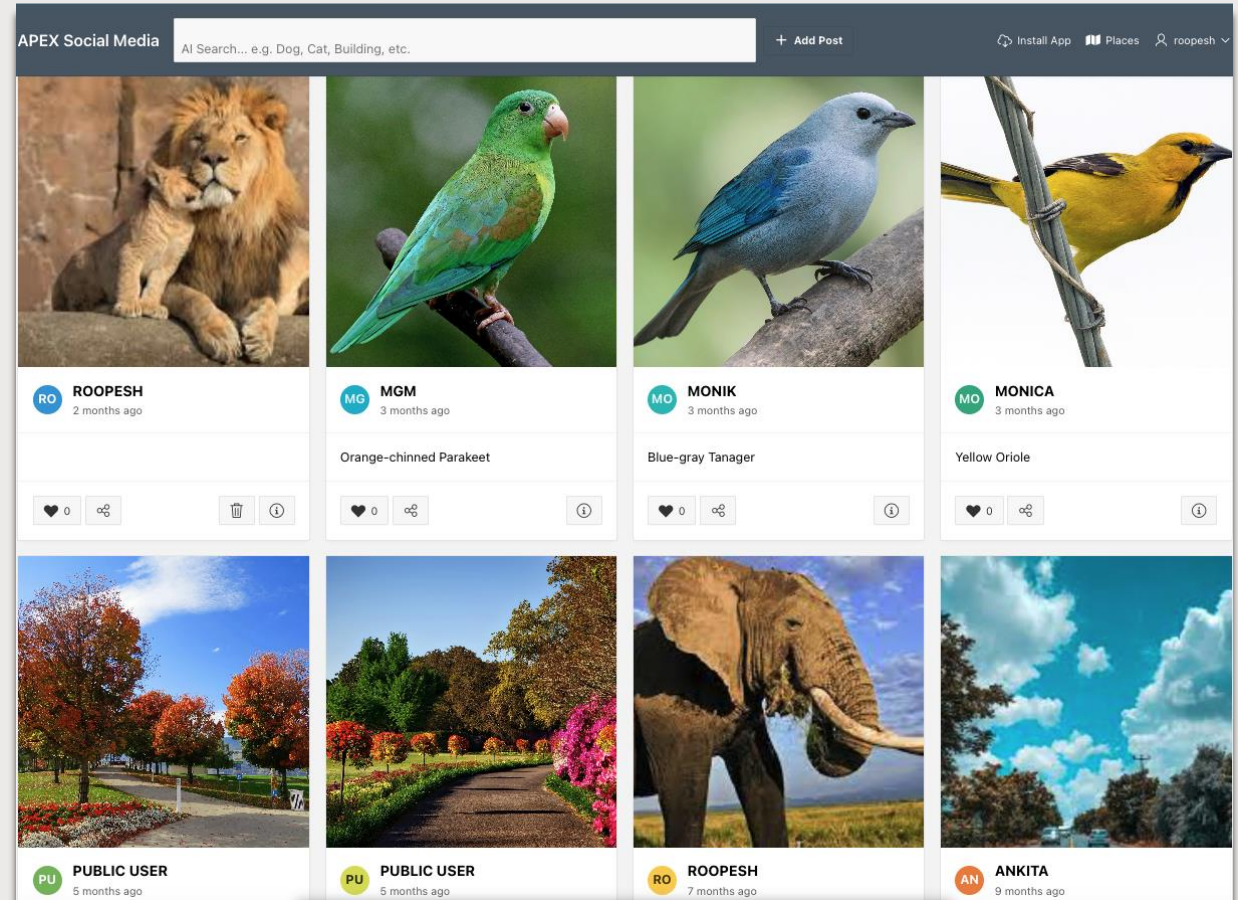
# Smart Filters

- A new search component that allows users to quickly narrow data down with filter suggestions or search terms
- Features a powerful Search Bar that provides built-in auto-complete for your filters, supports searching for multiple terms, and provides easy keyboard navigation.
- Filters are evaluated against your data and displayed below the search bar as chips



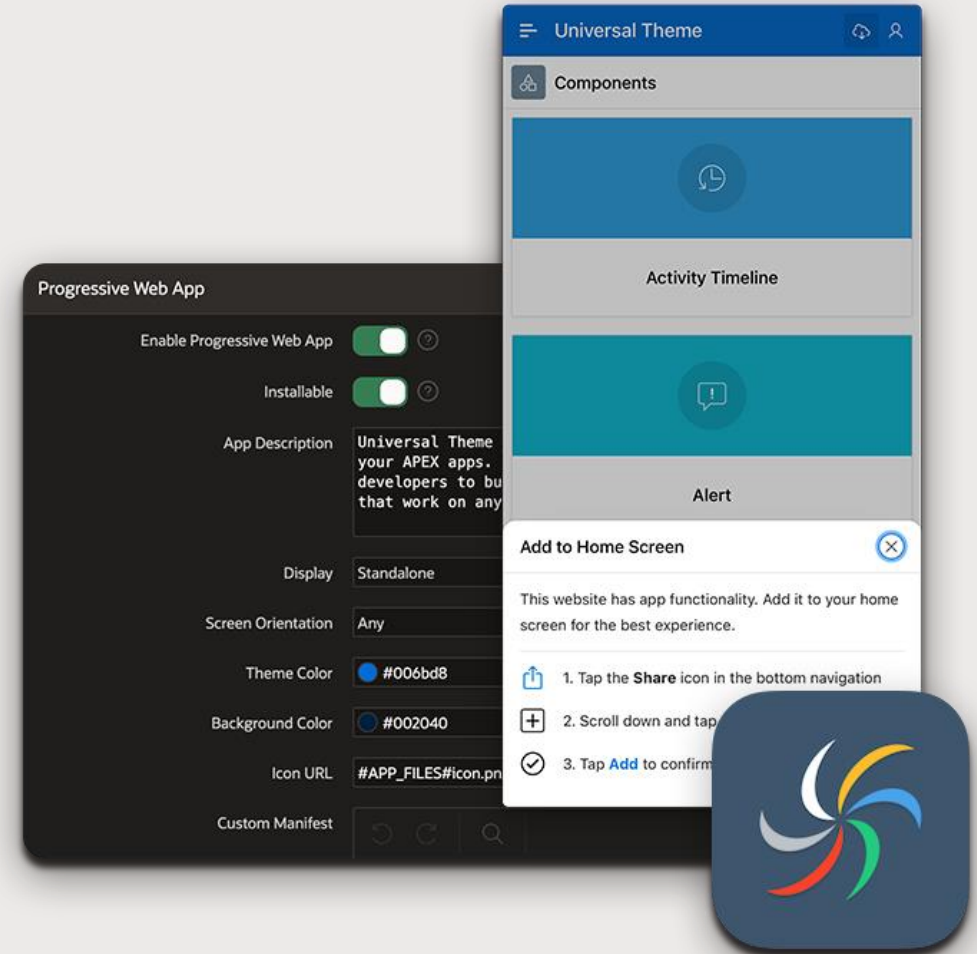
# Cards

- Create cards as a native region type and control the layout declaratively.
- Provides entry to more detailed information and you can include a number of actions declaratively.



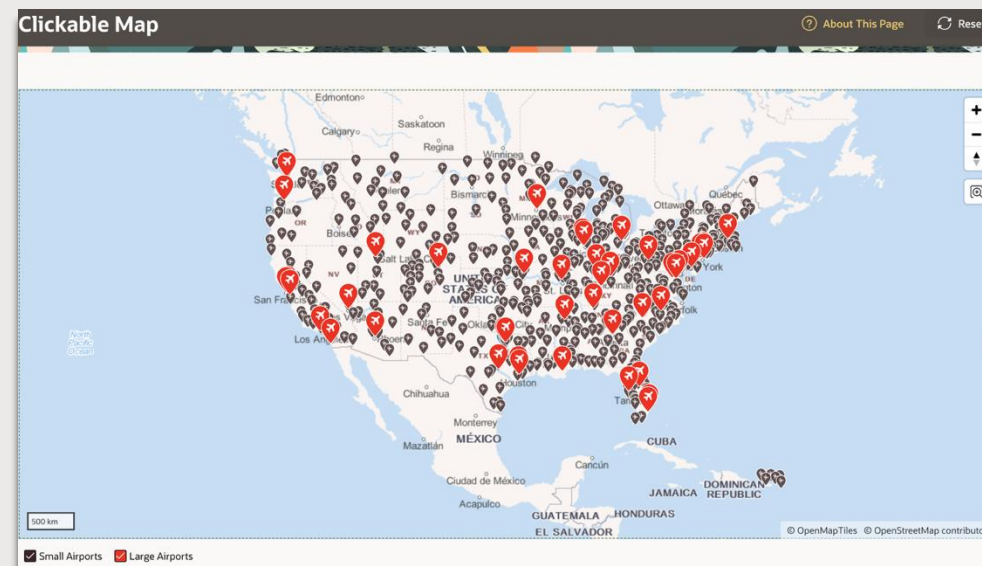
# Progressive Web Applications (PWA)

- Ability to install an APEX app as a Progressive Web App (PWA)
- Serves a customizable offline page when users are offline and can't request the network
- Improves page load rendering time with a new browser cache architecture for static files (APEX core files and APEX app files)
- Easily send notifications to other devices with real-time updates
- Send notifications, fetch geolocation, share APEX data with other apps, access the camera, and more.
- Customize your app's appearance, including home screen icons, color schemes, logos, and more.



# Maps

- The native Map component allows you to add powerful, feature-rich, and interactive maps.
- It is powered by Oracle e-Location Service, so it is ready to use; no API Key is required.
- Create maps with layers for points, lines, polygons, 3D polygons, and heat maps.
- Maps now support custom background tiles enabling you to visualize your spatial data in more ways than ever before.
- Map Backgrounds can be defined as Raster, Vector, and OGC WMS tile layers.



# Interactive Grid

- Modern, rich & interactive multi-row editing component
- Use of existing Item types
- Declarative support for Cascading LOVs and Dynamic Actions
- Upgrade utility for Tabular Forms
- Master Detail / Detail

### Interactive Grid

Q Search: All Text Columns Go Primary Report Actions Edit Save Add Row Reset

<input type="checkbox"/>	Project	Task n	Start date ↑	End date	Status	Assigned to	Cost	Budget	Available Budget
<input checked="" type="checkbox"/>	Bug Tracker	D...	24-MAR-24	27-MAR-24	Closed	Myra Sutcliff	\$3,00...	\$2,000.00	-\$1,000.00
<input type="checkbox"/>	Bug Tracker	R...	28-MAR-24	30-MAR-24	Closed	Myra Sutcliff	\$750.00	\$1,500.00	\$750.00
<input type="checkbox"/>	Bug Tracker	I...	12-APR-24	12-APR-24	Closed	Myra Sutcliff	\$100.00	\$100.00	\$0.00
<input type="checkbox"/>	Discussion Forum	Id...	13-APR-24	13-APR-24	Closed	Hank Davis	\$250.00	\$300.00	\$50.00
<input type="checkbox"/>	Maintain Support Systems	H...	16-APR-24	19-APR-24	Closed	Pam King	\$8,00...	\$7,000.00	-\$1,000.00
<input type="checkbox"/>	Bug Tracker	Tr...	19-APR-24	24-APR-24	On-Hold	Myra Sutcliff	\$1,000...	\$2,000.00	\$1,000.00
<input type="checkbox"/>	Discussion Forum	In...	19-APR-24	19-APR-24	Closed	Hank Davis	\$100.00	\$100.00	\$0.00
<input type="checkbox"/>	Maintain Support Systems	A...	20-APR-24	22-APR-24	Closed	Russ Saunders	\$9,500...	\$7,000.00	-\$2,500.00
<input type="checkbox"/>	Employee Satisfaction Survey	C...	23-APR-24	24-APR-24	Closed	Irene Jones	\$1,200...	\$800.00	-\$400.00
<input type="checkbox"/>	Public Website	D...	23-APR-24	23-APR-24	Closed	Tiger Scott	\$200.00	\$200.00	\$0.00
<input type="checkbox"/>	Public Website	C...	23-APR-24	23-APR-24	Closed	Tom Suess	\$100.00	\$100.00	\$0.00

# Interactive Grid

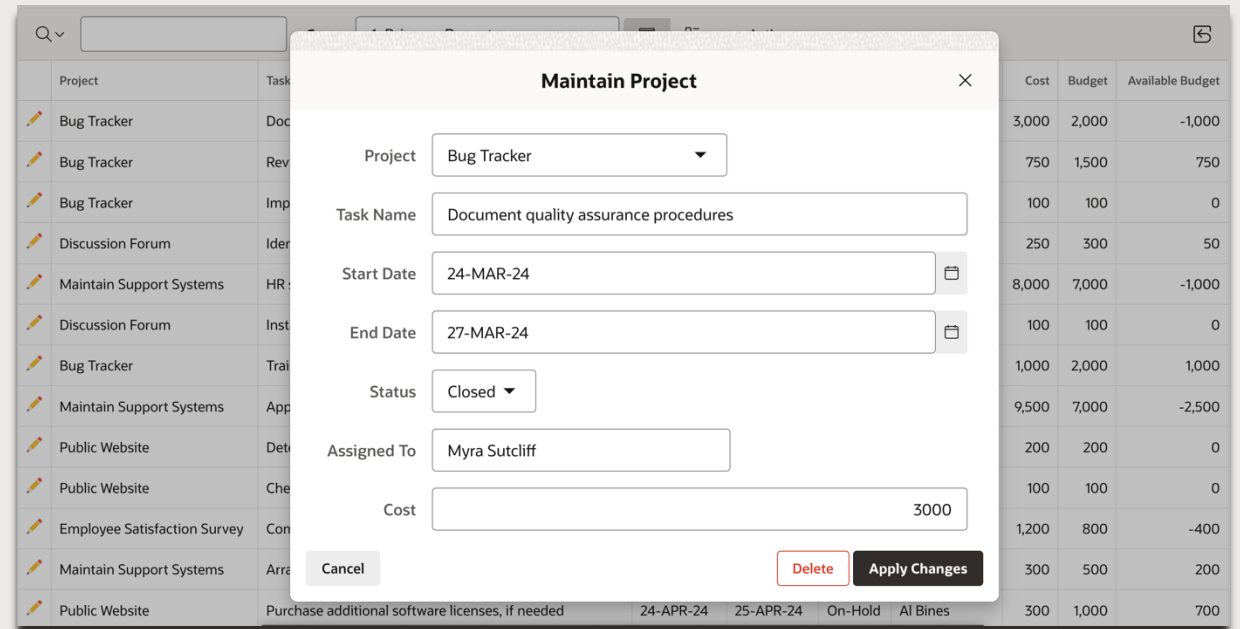
Master Detail Layout – N-levels wide or deep



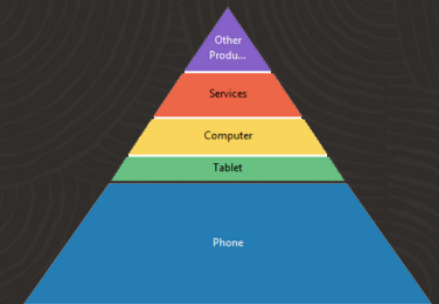
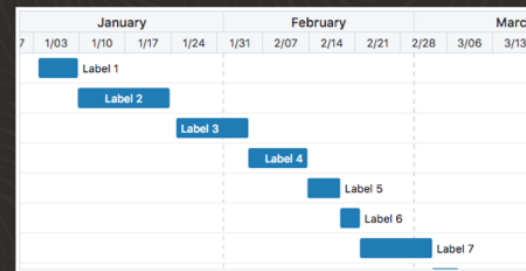
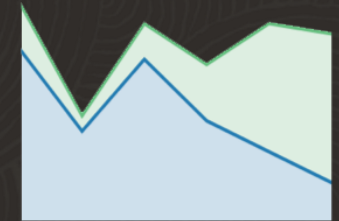
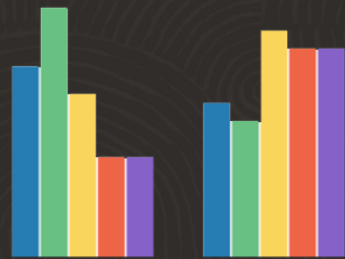
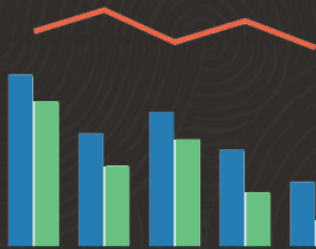
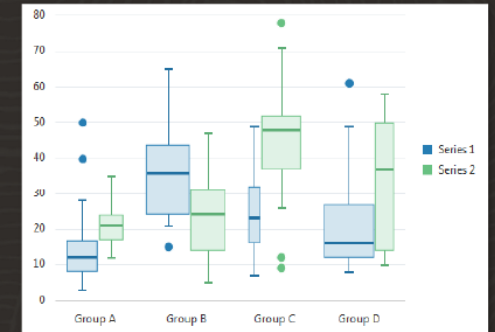
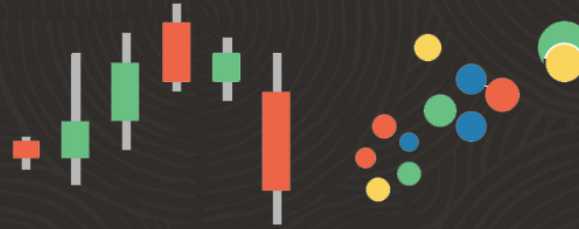
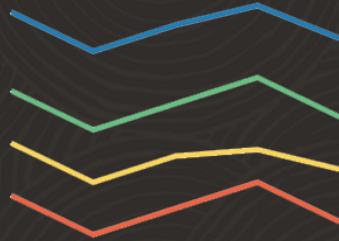
# Modal Dialogs

Readily switch between normal, modal, and non-modal page mode

- A modal dialog is a stand-alone page, not a region on a page
- Any page can be created as a dialog page
- Supports all the functionality of a regular page, including computations, validations, processes, and branches



# Charting Engine



# Charting Engine

Easy to use, fully managed, enterprise-class service on Oracle Cloud

- Based on Oracle JET Data Visualization Components
- Oracle JET (JavaScript Extension Toolkit) is open source
- The JavaScript-based solution, data being provided in JSON format
- Highly Customizable
- Using 'JavaScript code' to provide function to be called when the chart is initialized
- Using Dynamic Actions to add interactive behavior
- Built-in Accessibility Support
- Built-in Responsive Design Support



# Calendar

Different views, drag and drop capability

- All Projects -

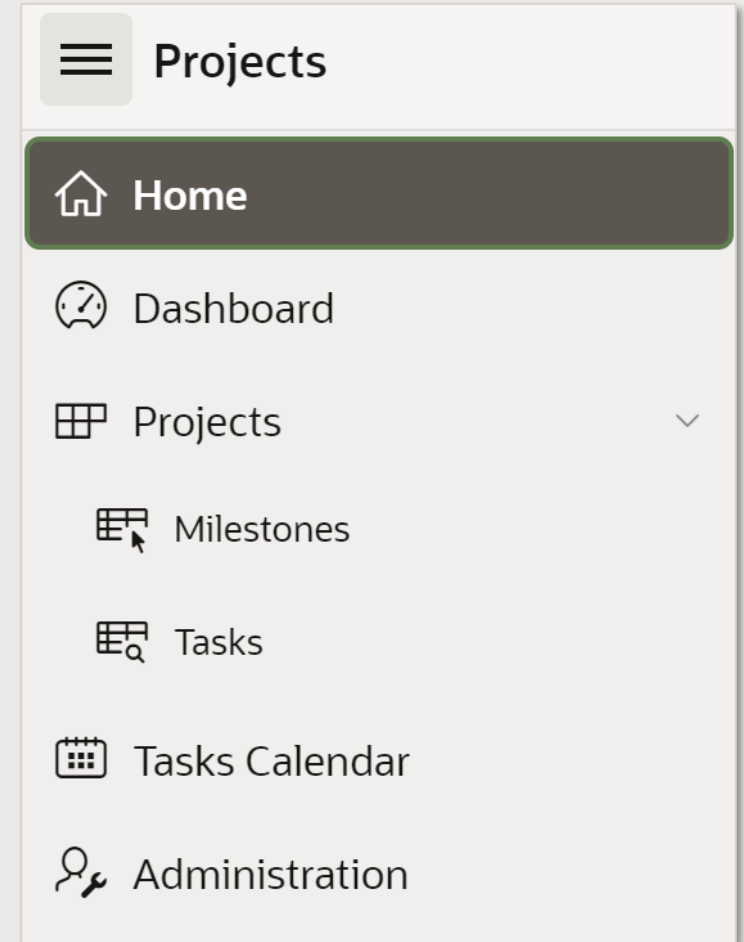
< > today **May 2024** month week day list

Sun	Mon	Tue	Wed	Thu	Fri	Sat
28 Identify pilot desktop ap	29	30 Complete plan Migrate pilot applications to ACME Web Express	1 Measure effectiveness o	2	3 Check software licenses	4 Plan migration schedule
5 Create training workspace Identify pilot Client Serv	6	7 Migrate pilot Client Server to ACME Web Express Collect mission-critical spreadsheets +3 more	8 +3 more	9 Identify server requiremer	10 Determine Web listener Lock spreadsheets	11 Customize solutions Post-migration review
12 Customize solutions	13 Run installation	14 Implement in Productior Plan migration schedule	15 Create pilot workspace	16 Conduct project kickoff Train Administrators of I	17 Get RFPs for new server	18 Create ACME Web Express
19 Create ACME Web Express applications from spreadsheets Migrate Client Server applications +2 more	20 +4 more	21 +3 more	22 Plan rollout schedule	23 Load current tasks and e	24 Select servers for Development, Test, Production Test migrated applications	25 Send links to previous s
26 Select servers for Develop	27 Migrate desktop applications	28	29	30	31 User acceptance testing	1



# List-based Navigation Menus

- Available as the top navigation menu and side menu
- Implemented as standard APEX lists
- Supports multi-level hierarchical menu structures
- Provides accessible pull-down menus
- Alternative to using traditional tabs



# Dynamic Actions

Declaratively define rich client-side interactivity without writing JavaScript or AJAX

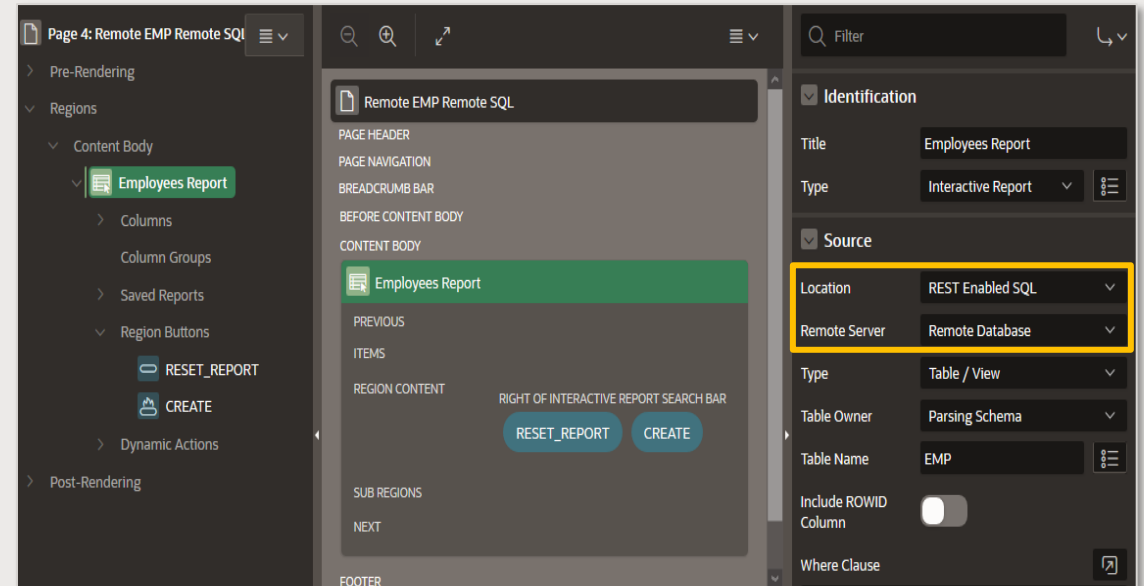
- Use Dynamic Actions to create complex client-side behaviours without JavaScript
- Set conditions for when actions occur and determine which elements are affected and how they are impacted
- Create or use existing page components (items, buttons, regions) that trigger the dynamic action
- Dynamic Actions also mean that Oracle maintains the code and security assessment of the JavaScript

The screenshot shows the Oracle APEX 'Edit' form for an employee record. The form is titled 'Disable/Enable Edit' and includes a 'Cancel' button and an 'Apply Changes' button. The form fields are as follows:

Field	Value
Employee Number	7839
Name	KING
Job	PRESIDENT
Manager	
Hire date	17-NOV-1981
Salary	5000
Commission	
Department	ACCOUNTING

# REST Enabled SQL Support

- Create and maintain References to REST Enabled SQL Instances (Oracle REST Data Services) in Shared Components: A name, Endpoint URL, and Authentication information
- Use a REST Enabled SQL Service and therefore a remote Oracle database as the Data Source for Oracle APEX components like:
  - Classic Reports, Interactive Reports
  - Reflow Report, Toggle Columns Report
  - Tree Region, JET Charts
  - CSS Calendar
  - PL/SQL Process



# REST Enabled SQL Support

- REST Data Sources are a declarative method to define references to external REST APIs and generic JSON data feeds.
- REST Data Sources store additional metadata about how to parse response data and map it as a virtual table with rows and columns.
- A module can contain one or many operations which are the references to a concrete external web service.
- Create and maintain REST Data Sources in Shared Components.

The screenshot shows the configuration page for a REST Data Source in Oracle APEX. The breadcrumb trail is: Application 38147 > Shared Components > REST Data Sources > Sample Application - Github Repository Commits. The page title is "REST Data Source" with "Delete" and "Apply Changes" buttons. The configuration is organized into sections: "REST Data Source" (Name: Sample Application - Github Repository Commits, REST Data Source Type: Simple HTTP, Remote Server: Sample Application - Github Repositories, Base URL: https://api.github.com/, URL Path Prefix: repos/oracle/:repo/commits), "Settings" (Pagination Type: No Pagination), "Authentication" (Credentials: - Select -), and "Data Profile" (JSON: 53, Table: 9, Columns: 53, Visible: 9, Derived: 0). An "Edit Data Profile" button is located in the top right of the Data Profile section.

JSON	Table	53	9	0
Response Format	Returns	Columns	Visible	Derived

# Consuming External REST APIs

---

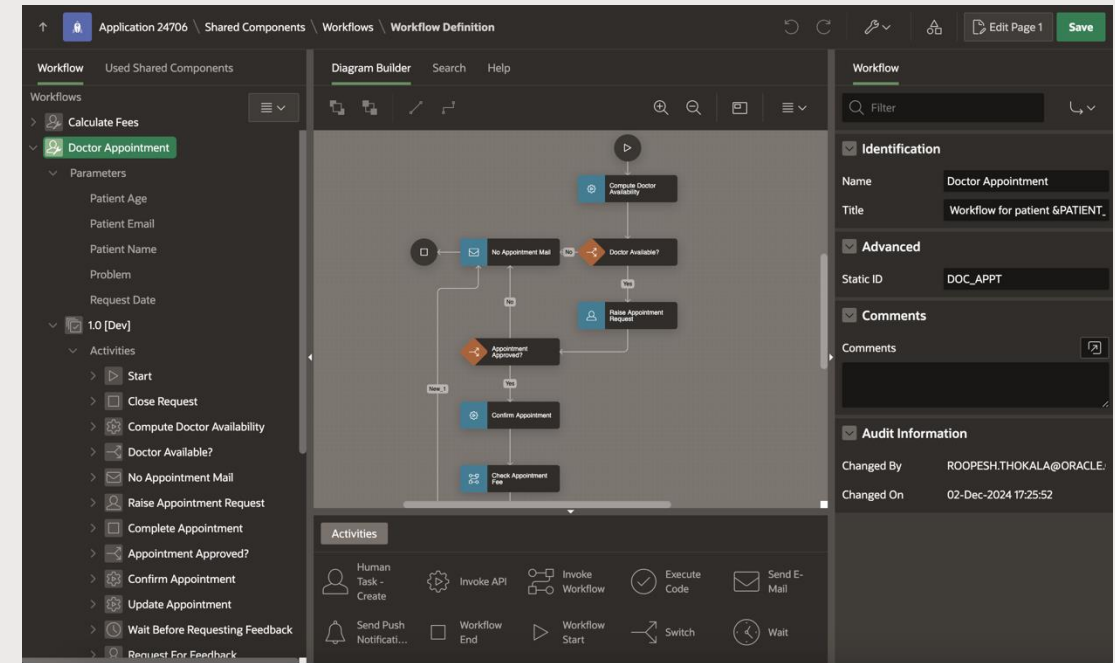
- Use as data sources for Oracle APEX components such as:
  - Interactive Report, Classic Report
  - JET Chart, CSS Calendar
  - Tree Region, Reflow Report, Toggle Column Report
- Post Processing SQL modifies data before being processed by an Oracle APEX component:
  - Apply SQL functions, aggregations, join to local tables, etc.
  - Avoid unnecessary HTTP requests by using Caching



# Native Digital Process Automation & Human Workflow Capabilities

**Workflows** are the automation of business processes, where documents, information, or tasks are passed from one participant to another for action according to a set of rules

- End-to-end business process automation:
  - System to system
  - Human workflow & approvals
- Key features:
  - **Visual workflow designer** to create workflows
  - **Workflow runtime engine** to execute workflows
  - **Workflow console** to monitor and administer workflows
  - Use the **Invoke Workflow** feature to reuse workflows and break down complex tasks into smaller, manageable units
  - **Copy** a Workflow definition from one application to another
  - Integration via **REST APIs**



**Task Definition: Laptop Approval**

Name: Laptop Approval  
Static ID: LAPTOP\_APPROVAL

Settings

Type: Approval Task

Initiator Can Complete:

Subject: &LAPTOP\_TYPE. Laptop Request for &NNME.

Priority: 3-Medium

Task Details Page URL: f?p=&APP\_ID:2:&SESSION-:&DEBUG-RR:2:P2\_TASK\_ID:&TASK\_ID

Actions Source: SQL Query

Actions SQL Query:

```

1 select ename,
2       case laptop_type when 'MAC' then 'MacBook Pro' when 'MINI' then 'Lenovo T490' and so laptop_typ
3       apex_app_setting_get_val('DEMO_NOTIFICATION_EMAIL') as demo_notification_email
4 from eba_demo_appr_laptop_requests lr
5 left outer join eba_demo_appr_emp e on e.empno = lr.empno

```

Deadline: Due On Type: Scheduler Expression

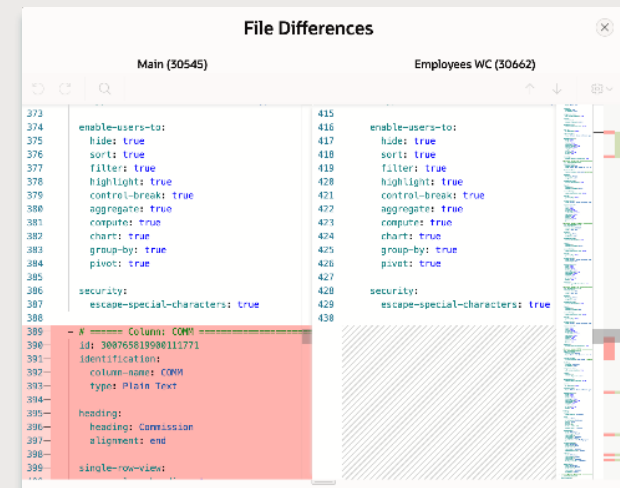
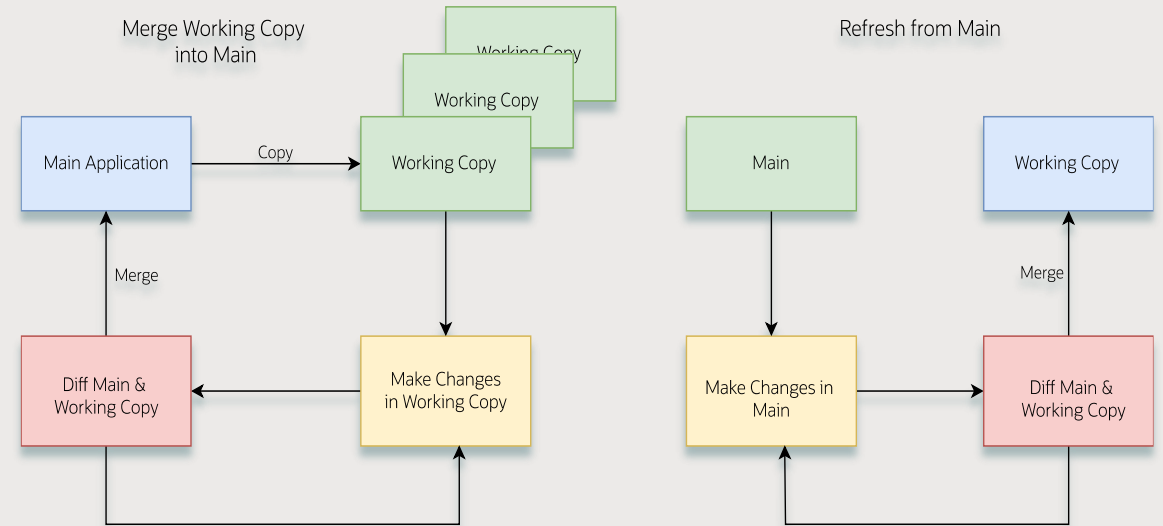
## Integrating with Fusion Applications

- Quickly start Fusion Applications projects with the new **Fusion Integration** option, featuring pre-configured SSO, identity propagation, and testable REST setups.
- Easily build APEX apps using any **Fusion REST APIs**, including the latest **/api/boss** endpoints.
- Automatically discover supported **API operations** and **data profiles**.
- Optimize performance by delegating tasks like filtering and sorting to APIs, transferring only necessary data.



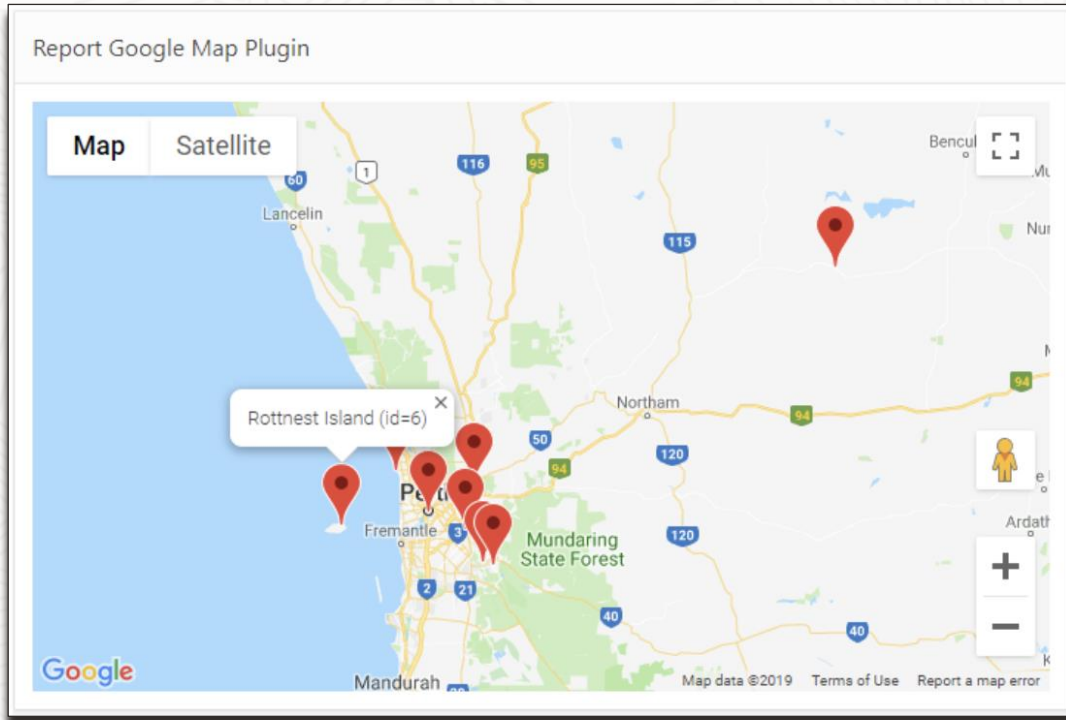
# Working Copy

- Allows developers to create a working copy of an existing app, diff changes between the copy and main app, and then merge changes back into the main app
- Enables multiple developers to work on different features in isolation of each other on the same app
- Comparison of changes is done by performing a split YAML export of both applications

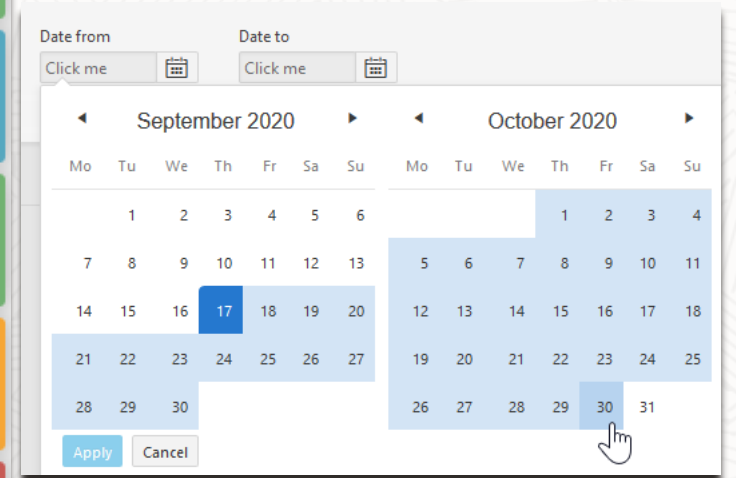


# Plug-Ins

Extend applications with custom components such as items and regions



- Hi I'm a toastr success notification with progress bar!
- Hi I'm a toastr sticky info notification on right bottom!!
- Hi I'm a toastr success notification with progress bar!
- Hi I'm a toastr warn notification on left bottom!!
- Hi I'm a toastr error notification on right top!!



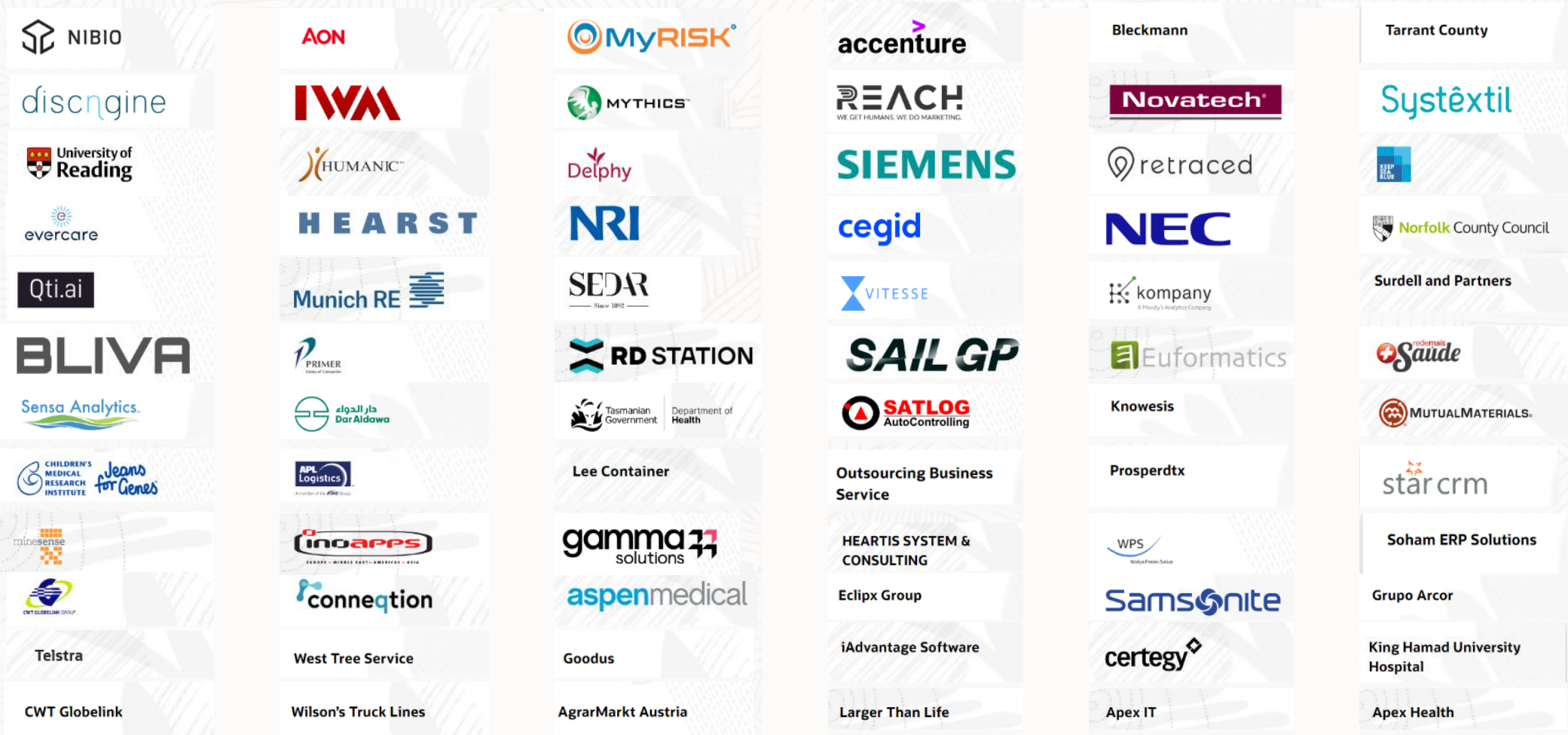
[apex.world/ords/f?p=100:700](https://apex.world/ords/f?p=100:700)



# Customer Stories

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# Oracle APEX: World's Most Popular Enterprise, Low-Code Platform

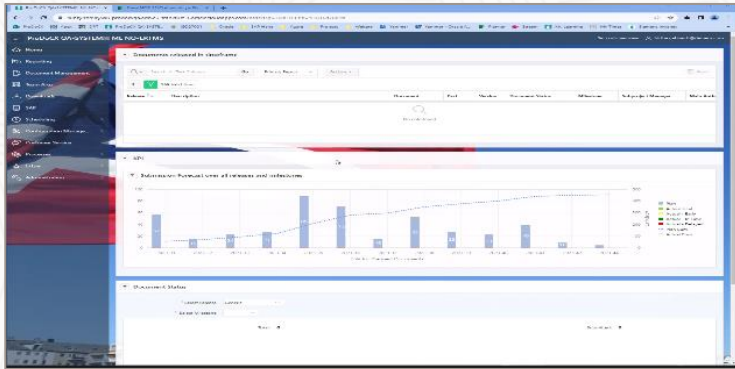


Source: <https://www.oracle.com/customers/?search=APEX>



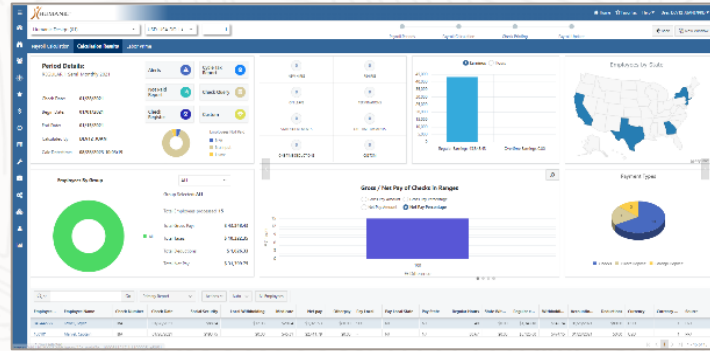
# APEX Customer Examples

## Siemens Mobility



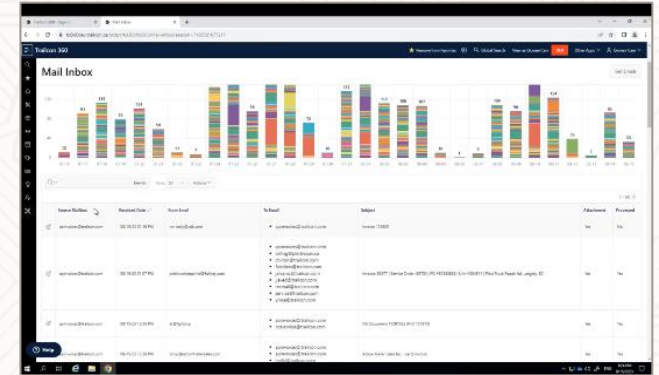
- Leader in transportation solutions
- Built an integrated project mgmt platform with APEX. Integrates 14+ systems – SAP, Snowflake
- Runs on OCI
- Built by 3 devs in <3 months

## Humanic



- Leader in international payroll solutions
- Modernized 300+ legacy forms with APEX
- Runs APEX on-prem; moving to APEX on OCI
- Built by 4 devs in <90 days

## Trailcon

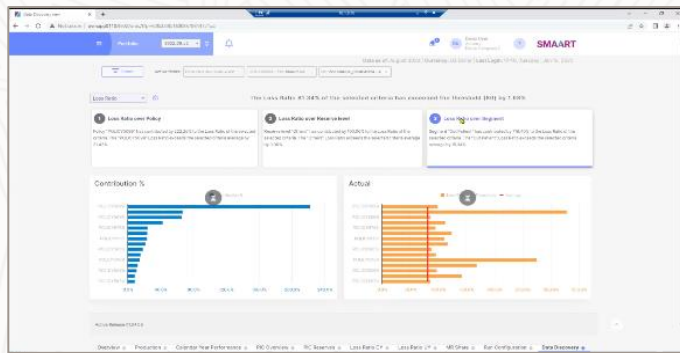


- Leader in transportation leasing
- Automated invoice processing with AI and APEX
- Uses OCI AI services, Email and Object Storage
- Built by 4 devs in <3 months



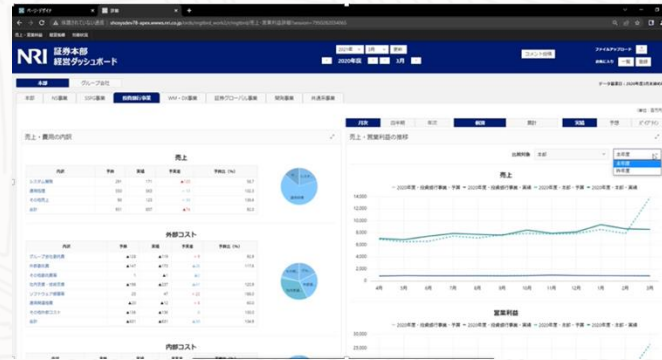
# APEX Customer Examples

## Munich RE HealthTech



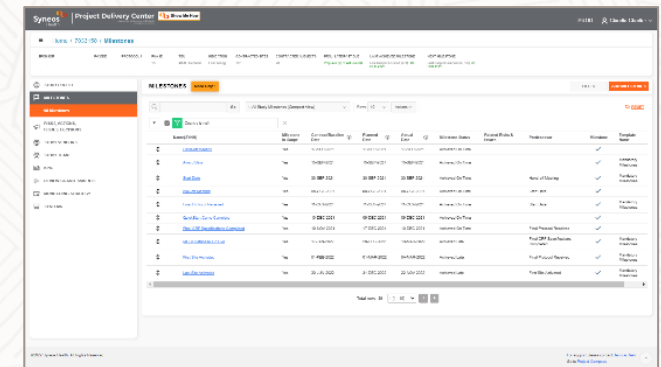
- Leader in digital solutions for the Health Insurance Industry
- Built multi-tenant SaaS app supporting data sovereignty in 10+ countries with APEX
- Runs APEX on AWS and OCI
- Built by 4 devs in <2 months

## Nomura Research Institute



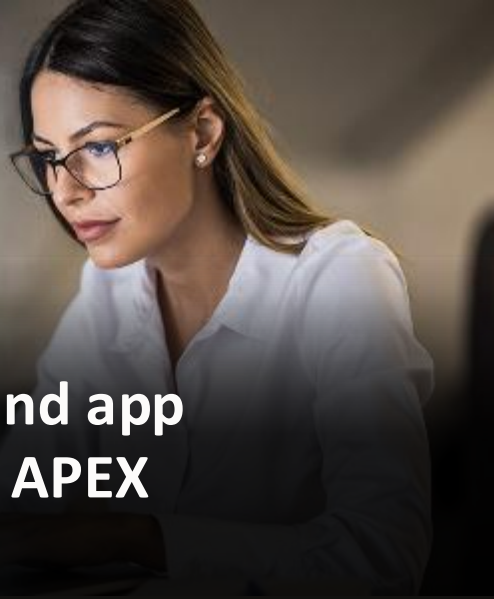
- First and largest consulting firm in Japan
- Built apps for fraud detection, GRC, and exec dashboards with APEX
- Runs OCI Dedicated Region
- 1st app was built by 2 devs in <2 weeks

## Syneos Health



- Leader in biopharmaceutical solutions
- Built clinical trial oversight system with AI and APEX
- Runs on a hybrid environment of on-prem and OCI
- Built by 4 devs in <3 months





## NEC boosts productivity and app development with Oracle APEX

“Being on Oracle Cloud Infrastructure, we can develop applications much quicker compared to a traditional development environment. Our US-based colleagues were impressed with the number of applications we’ve built using Oracle Autonomous Database with APEX with just three developers over the past years.”

**Frank Krul**

Manager IT Business Applications, NEC Enterprise Solutions

### Business Challenge:

NEC Enterprise Solutions is an IT service provider, headquartered in Japan. They needed to revamp its business applications environment to improve partner and customer experiences and boost sales productivity.

### Results:

- ✓ After evaluating several providers for data-driven, low-code environments, including OutSystems and Mendix, NEC chose Oracle Autonomous Transaction Processing with Oracle APEX on Oracle Cloud Infrastructure based on cost efficiency, ease of use, and the integrated development capabilities.
- ✓ APEX low-code development tools helped IT team cut administrative and maintenance efforts
- ✓ OCI improved end user access and compliance with guidelines for data governance

### Products Used:

Oracle Cloud Infrastructure  
Oracle Autonomous Database  
Oracle APEX  
Oracle Identity Cloud Service

Read [story](#)



## NIBIO analyzes massive amounts of data with ML models and APEX

- Norwegian Institute of Bioeconomy Research (NIBIO) balances conservation efforts with the demands of logging
- OCI Data Science, APEX, and Autonomous Data Warehouse enables scientists to analyze a broad range of sensor data from drones, tree planting hardware, and other sources
- Quality data used to build and train AI models that improves efficiency of forest operations and support decisions

**Hundreds  
of years**

Lifespan of trees  
and forests  
managed

**3D snapshots**

Help researchers  
understand forest  
environment



[NIBIO story](#), [Watch video](#)



## SATLOG modernizes fleet management at scale

“SATLOG achieves better integration and performance making fleets more productive with Oracle Autonomous Transaction Processing and its included Spatial, APEX, and JSON services on Oracle Cloud Infrastructure.”

**Juergen Stausberg**  
CEO, SATLOG

### Business Challenge:

Germany-based SATLOG helps increase the productivity of fleets across a variety of industries with various delivery requirements. It needed to focus more on higher value development of telematics dashboards based on data volumes growing at rapid rates rather than maintain aging on-prem hardware.

### Results:

- ✓ APEX and Oracle Spatial enabled low-code, easy to use data visualization
- ✓ Machine learning automated provisioning, tuning, scaling, patching, and encrypting that reduces costs, time, and risk
- ✓ Delivers key business metrics to measure, compare, and optimize costs for order processing, proof of delivery, routes, tour planning, and idle times

### Products Used:

Oracle Autonomous Transaction Processing

Oracle APEX

Oracle Spatial Analysis

**Implementation Partners:** HERE Technologies;  
MEKRATronics; Continental Tire Pressure System CPC

Read [story](#)





## Rapid innovation for thousands of customers

“Oracle APEX and Oracle Cloud Infrastructure meant we were able to turn that application from a concept to an application in a 12-hour timespan.”

**Rich Mutell**

Cofounder and CEO, Apex Health Innovations

### Business Challenge:

Building applications for the healthcare and biotech/pharma industries, with their myriad regulations and privacy concerns, requires a deep understanding of how those businesses work, plus proven data security and HIPAA-compliance chops. Apex Health Innovations had that expertise, but what it needed was a cloud infrastructure and development platform on which to build and deliver those applications rapidly.

### Results:

- ✓ The team at Apex Health Innovations has realized numerous successes by building and launching powerful, flexible, HIPAA-compliant applications on Oracle Cloud Infrastructure. These include an application that is being used by two of the largest kidney dialysis organizations in the US at more than 3,000 dialysis clinics, and applications that are helping some of the world’s largest pharmaceutical companies plan and execute the development of new therapies.
- ✓ Recently, built an application overnight using Oracle APEX that filled the reporting gap between COVID-19 testing labs and organ procurement networks across the US. The quick work helped researchers at Columbia and The Cleveland Clinic assess the prevalence of COVID-19 across the donor population.

### Products Used:

Oracle Cloud Compute

Oracle Cloud Infrastructure

Oracle APEX



## Samsonite Europe scales luggage-damage service with Oracle

“Bagsupport, our luggage-as-a-service application, will take off as a multi-airline service and expand globally, thanks to consistent uptime and the ability to scale with Oracle’s elastic compute infrastructure and global data center network.”

**Dirk de Smyter**

IT Director for Europe, Samsonite International

### Business Challenge:

Samsonite International is the world’s largest manufacturer of travel luggage and accessories, with globally recognized brands. The company operates multiple cloud platforms, including Oracle Retail, for integrating online and in-store channels.

Historically, airlines worldwide have relied on thousands of local baggage-repair partners to resolve customer claims, resulting in complex invoice handling. Belgium-based Samsonite Europe began testing a new offering called Bagsupport, with the objective of saving airlines time and money by handling passenger claims and repairs for damaged luggage.

### Results:

- ✓ Moving Bagsupport to Oracle Cloud Infrastructure eliminated the downtime Samsonite had experienced managing the app in its own data center.
- ✓ As part of its OCI implementation, Samsonite deployed Oracle Database Backup Cloud Service and Oracle Infrastructure Monitoring Cloud Service and acquired 24/7 access to Oracle support engineers.
- ✓ Samsonite also reduced its software and hardware costs while gaining the scalability needed to expand its luggage-as-a-service offering to airlines worldwide.
- ✓ Samsonite also reasoned that because Oracle partners iAdvise and Exitas built the Bagsupport app on the Oracle APEX—which runs on Oracle Standard Database Service—that tight integration would ensure smooth enhancements to the app as more airlines come onboard.

### Products Used:

Oracle Cloud Infrastructure

Oracle APEX

Read [story](#)

Learn more at [apex.oracle.com](https://apex.oracle.com)

## Star CRM lifts productivity by 40% and reduces costs by 30%

“In terms of cost, we've definitely noticed savings of anywhere between 25% to 30% without any impact on speed or performance moving Oracle APEX to Oracle Database Cloud.”

**Sharada Qureshi**

COO, Star CRM

“Oracle APEX on OCI has allowed us to reduce development time and costs. This has increased our development team's productivity by 40%.”

**Kareem Qureshi**

Founder and CEO, Star CRM

### Business Challenge:

Headquartered in Singapore, the company was initially focused solely on enterprise clients. However, about five years ago, it started targeting SMEs and now intends to scale that business very rapidly in the next 24 months.

Star CRM realized that without a cost-effective cloud it's very difficult to deliver its solutions to smaller clients. Hence, the company moved its workloads from local data centers in Kuala Lumpur, Malaysia, to Amazon EC2.

As an alternative to AWS, the company tried Oracle and APEX on managed third-party APEX hosting providers.

Star CRM had to make sure that its cloud infrastructure costs did not go through the roof. It quickly needed a solution to address the ability to scale.

### Results:

- ✓ Star CRM moved its APEX workloads on-premises to Oracle Database Cloud Service on Oracle Cloud Infrastructure (OCI), to have the latest APEX and ORDS installed, managed, and upgraded by Oracle.
- ✓ It has eliminated many business issues associated with licensing and scalability on AWS and third-party APEX hosting providers.
- ✓ The features and functionalities provided by Oracle APEX on OCI have allowed Star CRM to complete more complex projects for clients, besides reducing development time and costs. This has increased the development team's productivity by as much as 40%.

### Products Used:

Oracle Cloud Infrastructure

Oracle Database Cloud Service

Oracle APEX

Read [story](#)

Learn more at [apex.oracle.com](https://apex.oracle.com)

## Soham ERP builds new app using Oracle Cloud

“Our more than 100 enterprise customers are thrilled with the performance of OCI. With Oracle APEX and Database Cloud Service, we have faster time to market to build and deploy plus data security. And Oracle Consulting helped us seamlessly convert our existing forms and reports and trained our current staff.”

**Suketu Shah**  
Director, Soham ERP Solutions

### Business Challenge:

Based in Gujarat, India, the IT company, the Soham ERP Solutions offers several products for its 2,000-plus customers, ranging from ERPs to salesforce automation systems to barcode tools. As the pharmaceutical industry grew, Soham ERP's customers expected improvements in software functionality, experience, and efficiency. Additionally, customers who had adopted the company's on-premises software wanted help with growth challenges, such as costs associated with server upgrades, database licenses, and investments in IT staff to manage on-premises infrastructure.

The company decided to migrate to Oracle Cloud Infrastructure (OCI) and low code platform, APEX, paving the way for a more modern approach to application development. However, the decision to choose Oracle was not a foregone conclusion.

### Results:

- ✓ Soham ERP was able to develop a new application, PharmaCloud, using Oracle APEX with Oracle Database Cloud Service on Oracle Cloud Infrastructure. PharmaCloud supports about 100 of Soham's customers, equivalent to roughly 1,200 concurrent users.
- ✓ Before the transition to the cloud, customers would need to invest about \$100,000 for on-premises hardware, licensing, and maintenance. Now, that initial cost has dropped to about \$20,000, which better aligns costs with benefits.
- ✓ Thanks to OCI, Soham has seen a 25% improvement in application performance—leading to faster turnaround time for complex processes—while reducing costs by 40%. Plus, customers can access PharmaCloud from anywhere in the world, from any device.

### Products Used:

Oracle Cloud Infrastructure    Oracle Database

Oracle APEX

Read [story](#)

Learn more at [apex.oracle.com](https://apex.oracle.com)





# Tanishq Expands Jewellery Business with Oracle Cloud Infrastructure

“At Tanishq, we take great pride in offering an unparalleled retail experience taking into consideration our customer's unique needs and preferences. With the rapid growth in our business, we needed better scalability from our inventory management system. With OCI and Oracle APEX, we can scale up easily and transform our inventory tracking and order fulfilment process enabling us to reduce operational costs. Previously, we operated with a time-consuming manual process that could take up to a few days to generate an inventory report, severely hindering our ability to offer our customers more products”.

**Akshay Jawanjal,**  
Sales Development Director, IWM Cyber Security

## Business Challenge:

Tanishq has plans to expand its presence and market share over the next five years. As customer demand for jewellery increased, Tanishq developed an Endless Aisle service for its store managers that allows customers to order products, including those not available in the store

## Results:

- ✓ With Oracle Web Application Firewall, Tanishq protects its business against unwanted internet traffic and OCI Flexible Load Balancing allows it to distribute network traffic equally during peak demand across its 500 stores.
- ✓ Through [Oracle Support Rewards](#), Tanishq estimates a substantial CAPEX and software support cost savings of up to 30 percent, supporting the company's future expansion plans.
- ✓ Oracle APEX, a no-cost capability provided with Oracle Database, enables Tanishq to manage changing demand for its Endless Aisle service by adding compute and storage resources, and scale back down when it is no longer necessary.

## Products Used:

- Oracle APEX
- Oracle Cloud Infrastructure
- Oracle Database
- Oracle Web Application Firewall
- OCI Flexible Load Balancing



1033

## Shimizu Corporation introduces Oracle Cloud Infrastructure to promote digitalization and standardization of construction site operations

Utilizing Oracle Autonomous Data Warehouse and Oracle Application Express to streamline work related to special safety councils at construction sites. Enables employee productivity improvement and business data aggregation to support digital transformation.

### Business Challenge:

With the long-term vision of "SHIMZ VISION 2030," the Shimizu Group, including Shimizu Corporation, will create value that is ahead of the times through constant self-transformation and challenges that go beyond the framework of the construction business, and through co-creation with diverse partners.

The company was reviewing business processes and developing various business systems to promote electronic approval, improve business efficiency through information collaboration and data utilization using project databases, and automate and streamline in-house management operations using RPA and workflow systems.

### Results:

- ✓ With the support of Oracle Japan's consulting department, Shimizu Corporation began developing systems and applications on OCI in October 2021. Develop mobile and web applications using the low-code development tool "Oracle APEX," and integrate and centralize data sent from applications using "Oracle Autonomous Data Warehouse," which uses autonomous functions to reduce database construction and operational management burden.
- ✓ Additionally, using Oracle Analytics Cloud, the company is able to visualize data and check progress intuitively. The company was able to build a production environment in just one month by using the autonomous functionality of Oracle Autonomous Data Warehouse to easily set up a database and low-code development using Oracle APEX.

### Products Used:

Oracle APEX

Oracle Analytics Cloud

Oracle Cloud Infrastructure (OCI)

Oracle Autonomous Data Warehouse

# Oracle APEX in the Real World

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# APEX@Oracle

The screenshot shows the Oracle ARIA interface. At the top left is the ARIA logo and a search bar. A breadcrumb trail reads: Board of Directors > Lawrence Ellison > Juan Loaiza > Michael Hichwa > Simon Hunt > Koratamaddi Chaitanya Shanker > **Roopesh Thokala**. The main profile card for Roopesh Thokala includes a profile picture, his name, title (Senior Product Manager), location (Bengaluru East Taluk KARNATAKA, IN - 6:27 PM Sat), and contact information (Email, Work Phone, and Permalink @rothokal). Below the profile are tabs for 'Profile' and 'Org Chart'. The 'Org Chart' section features a search bar and two organizational cards: one for Koratamaddi Chaitanya Shanker (Director of Product Management / Strategy, 8 Directs - 8 Total) and one for Roopesh Thokala (Senior Product Manager).



# APEX@Oracle

The screenshot shows the APEX@Oracle community page. At the top, there is a navigation bar with the Einstein logo, a search bar, and user profile information. Below the navigation bar, the page is divided into a main content area and a right-hand sidebar. The main content area features a 'Pinned' section with a post titled 'Frequently Asked Questions and Success Stories' by Ed Jones. Below this, there is a 'Posts' section with four posts, each featuring a question title, author information, and engagement metrics. The right-hand sidebar contains filter and sorting options, including 'Tags', 'View', and 'Sort', as well as a 'Legacy Categories' section with several checkboxes.

**Navigation Bar:** Einstein | Search... | This Domain | [Heart] [Bell] [1] [Profile]

**Home:** [Pencil Icon] **APEX** | [Share] [Heart] [RSS] Lists About **New Post**

**Pinned**

- Frequently Asked Questions and Success Stories** | 0 comments | 1,970 views | **Ed Jones** | updated on Feb 5 2021

**Posts**

- How to show interactive report on chart data click?** | 4 comments | 2 views | **Steve Muench** | updated 4 hours ago | Started by **Sujata Dongre** — 15 hours ago | general
- Access BOSS endpoints using utoken/bearer token** | 9 comments | 35 views | **Steve Muench** | updated 4 hours ago | Started by **Ashutosh Mishra** — on Dec 19 2024
- Is there a way to create tabs on the UI with one of the field data fetched from a Rest Data Source?** | 3 comments | 16 views | **Steve Muench** | updated 4 hours ago | Started by **Syantane Basu** — 2 days ago
- Page Copying is too slow** | 13 comments | 80 views | **Steve Muench** | updated 5 hours ago | Started by **Govind Das** — on Nov 19 2024 | 24-2-upgrade, apex-oraclecorp-internal-service

**Filters:**

- Tags: Filter by tags
- Show posts that include all selected tags
- View: All Posts
- Sort: Most Recent Activity

**Legacy Categories:**

- apex.oraclecorp Internal Service
- APEX on Autonomous
- APEX on Database Cloud Service (DBaaS)
- APEX for Presales
- APEX in Multitenant
- Apps and SaaS Extensions



The screenshot shows the Oracle Customer Center website. At the top is a dark navigation bar with the Oracle logo, 'Store', 'Browse Products', 'Sign In / Register', a search icon, a help icon, 'Customer Center', and a shopping cart icon. Below the navigation bar is a large banner featuring a tiger's head on the right and a mountain range on the left. The banner text reads 'Oracle Customer Center' and 'Account Dashboard is now Oracle Customer Center, a new portal designed to make it easier to do business with Oracle.' with a 'Learn More' button. Below the banner is a 'Products & Services' section with the text 'Shop for the world's most complete, open, and integrated business software and hardware systems.' and three dark grey boxes: 'On-Premise Software', 'On-Premise Software Subscription', and 'Operating Systems and Infrastructure', each with a cube icon.

**Oracle Customer Center**

Account Dashboard is now Oracle Customer Center, a new portal designed to make it easier to do business with Oracle.

[Learn More >](#)

**Products & Services**


Shop for the world's most complete, open, and integrated business software and hardware systems.

- On-Premise Software
- On-Premise Software Subscription
- Operating Systems and Infrastructure

The screenshot shows the Oracle APEX forum interface. At the top, there is a navigation bar with the Oracle logo, the word "Forums", a search bar, and a "Sign In" button. Below the navigation bar is a dark blue header with the word "APEX" and a back arrow. The main content area features an announcement box with a close button. Below the announcement is a "Pinned" section with a dropdown arrow. The pinned post is titled "Share your Ideas, Suggestions, and Feature Requests" by Ed Jones-Oracle, with 14 comments and 2,220 views. Below the pinned post is a "Posts" section with a dropdown arrow. The first post is titled "Button to dismiss a region with Alert template" by mt, with 3 comments and 55 views. The second post is titled "Oracle APEX - IR Report - Populating Checkbox Dynamically" by Bhav, with 2 comments and 62 views. The third post is titled "Static Content - Accent Color" by Norma K. Oros-Oracle, with 1 comment and 23 views. The fourth post is titled "Close modal page after download file" by Veerendra Patil, with 3 comments and 66 views. On the right side of the forum, there are filters for tags, a checkbox for "Show posts that include all selected tags", a view selector set to "All Posts", a sort selector set to "Most Recent Activity", and a "Reset" button. Below the filters is a "Popular Tags" section with tags for "apex-discussions" (127.5k), "apex" (15.4k), and "foex" (3.8k).

<https://apex.oracle.com/forum>





 **ASK TOM**


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## Ask The Oracle Mentors


[Ask a Question](#) [All Questions >](#)

 **Why are most of keywords in V\$RESERVED\_WORDS not actually reserved?**  
Hello, Could you please clarify the meaning of the view V\$RESERVED\_WORDS and especially its contents? At first glance, the documentation has a clear explanation. The view contains reserved words, and columns RESERVED, RES\_TYPE, RES\_ATTR, and RES\_SEMI describe, for which purposes ...

 **difference between 2 dates**  
I want to get difference between two dates say (10-FEB-2000 - 02-JAN-1999) and the result has to be displayed in following format 1 year, 1 month, 8 days

 **About sub-totals**  
Hi Gurus, I have a schema as described in the link <https://livesql.oracle.com/ords/livesql/s/ct0zdah8slxq66h8fnpfhwdby>. drop table t; create table t ( instance number , id\_sup number , id number , srt number , v01 number , v02 number , v03 number , value\_01 n

 **Is feasible to add column as IDENTITY if the data in the table is too large.**  
Hi Senior, My database is 12C PLSQL. Is it possible to alter table and add IDENTITY for primary key, if the data in the table is beyond 200Crore or 2Billion data. As I am concerned about database crashing or Cache overflow. Please guide me. In the code I am crea

 **Locating the Snippet file - xml to back it up**  
Good day, I want to backup my Snippets but cannot find the file to back it up as I cannot locate the XML file with my Snippets therein. I went to system23.11.345.2114 and in there I went to o.sqldeveloper.snippet and this folder is empty despite me setting "Sow hidden files"



# apex.oracle.com/go/ideas

The screenshot shows the APEX Ideas website interface. At the top, there is a navigation bar with the APEX Ideas logo, a search bar, and a 'Sign In' button. Below the navigation bar, there is a filter for 'Status: Open' and a count of '50 ideas'. The main content area displays a list of ideas, each with an upvote count, a title, a status (e.g., 'Open' or 'Roadmap'), and a comment count. A 'Submit an Idea' button is visible in the top right corner. On the right side, there is a 'Welcome' message from the APEX Team, encouraging users to share their ideas.

Status	Open	50 ideas
8	<b>Workflow Purge Days should be optional</b>	1
2	<b>Create secure PDF with password by using document generator in prebuild function</b>	6
50	<b>API for executing apex advisor, CI / CD integration</b>	1
51	<b>Oracle APEX Workflow - Approving from email notification</b>	13
76	<b>Enable Paste from Excel to Interactive Grid</b>	15

**Welcome**

Do you have an idea on how we can make Oracle APEX even better?

Perhaps its new functionality that is missing, or an enhancement for something that already exists? Is something more difficult than it should be? **Whatever it is, we'd love to hear from you.**

APEX thrives because of community engagement and feedback, and we want to make it even easier for you to contribute directly to the product direction of APEX.

[Learn more](#)

♥ APEX Team



# Oracle APEX Training & Certification

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# Oracle APEX Training & Certification

[apex.oracle.com/go/training](https://apex.oracle.com/go/training)

## Learn Oracle APEX Foundations



Embark on your APEX journey by enrolling in the Oracle APEX Foundations course.

This 3-hour learning path is ideal for beginners looking for a general overview of APEX. Explore the core functionality of APEX such as the App Builder and SQL Workshop, and build your first cloud application with APEX on OCI.

Upon completion, you will be familiar with the key capabilities and components of APEX.

Now available in Japanese! [Learn more.](#)

[Enroll Now](#)

## Become an Oracle APEX Professional



Dive deeper into APEX capabilities by enrolling in the Oracle APEX Developer Professional Course

This 13-hour learning path is targeted for both beginners and seasoned developers that want a deeper understanding of APEX. Dive into detail for each APEX component, learn about the latest advancements of AI in Oracle APEX, and try out the step-by-step guided labs for a hands-on experience.

Upon completion, you will have a practical knowledge of APEX concepts and capabilities, and a solid footing on how to build APEX apps.

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## APEX Foundations

[apex.oracle.com/go/foundations](https://apex.oracle.com/go/foundations)

## APEX Developer Professional Learning Path

[apex.oracle.com/go/professional-ai-lp](https://apex.oracle.com/go/professional-ai-lp)

Consists of **TWO** courses:


1. [apex.oracle.com/go/professional](https://apex.oracle.com/go/professional)
2. [apex.oracle.com/go/ai-learn](https://apex.oracle.com/go/ai-learn)

## Get Certified

[apex.oracle.com/go/professional-ai-lp](https://apex.oracle.com/go/professional-ai-lp)

# Learn the Foundations of Oracle APEX

Oracle APEX Foundations Course

 Learn the foundations of low-code app dev with Oracle APEX

 3.5 + hours of expert training delivered by the APEX Product Team

 Enroll and learn for FREE Today on the platform of your choice:



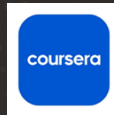
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Don't forget to share your badge on social media and tag us using #orclAPEX



# Oracle APEX Developer Professional

[apex.oracle.com/go/training](https://apex.oracle.com/go/training)



**Soup-to-nuts** covering complete low-code app dev along with the latest advancements of AI with Oracle APEX

**21+** hours of expert training delivered by the APEX Product Team

**Hands-on-Labs** to practice along with the training videos

**Enroll and learn for FREE today on Oracle University!!**

[apex.oracle.com/go/professional](https://apex.oracle.com/go/professional)

The screenshot shows the Oracle APEX Developer Professional learning path page. At the top, it says "Become An Oracle APEX Developer Professional" with a status of "Learning Path" and "Status In Progress". There are icons for "Community" and "You are enrolled in this path!". The main content area has a dark background and contains the following text:

This learning path enables developers to design, develop, and deploy scalable, secure enterprise applications using Oracle APEX by integrating AI capabilities to create innovative solutions.

**Learning Objectives:**  
By the end of this course, you will be able to:

- Develop and deploy modern, secure, and scalable enterprise applications with Oracle APEX
- Create dynamic, data-driven interactive reports and dashboards that deliver actionable real-time insights
- Enhance application functionality and streamline business process management using Oracle APEX Workflow capabilities
- Implement robust authentication and authorization mechanisms to safeguard application integrity
- Integrate Oracle Cloud Infrastructure (OCI) AI services, including Generative AI, Vision, Oracle Digital Assistant (ODA), and Document Understanding, to create AI-powered applications
- Leverage the power of AI Vector Search to enable Retrieval-Augmented Generation (RAG) features for advanced AI-powered solutions.

This Learning Path also prepares you for the **Oracle APEX Cloud Developer Professional certification**.



# Oracle APEX : Empowering Low Code Apps with AI



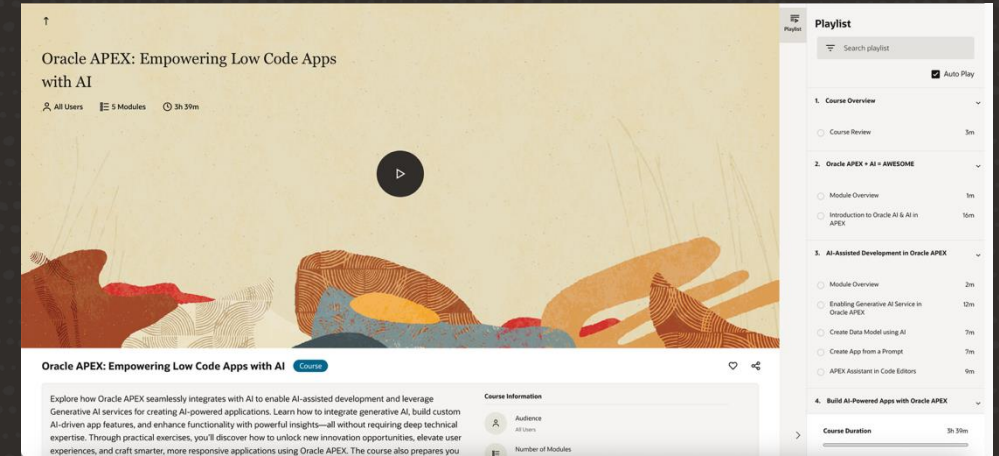
Master the integration of cutting-edge AI features to build smarter, more interactive Oracle APEX low-code applications.

**3+** hours of expert training delivered by the APEX Product Team

**Hands-on-Labs** to practice along with the training videos

Enroll and learn for **FREE** today on Oracle University!!

[apex.oracle.com/go/ai-learn](https://apex.oracle.com/go/ai-learn)



# Oracle APEX Professional Learning Path

Learning path consists of two key courses:

- Oracle APEX Developer Professional  
[apex.oracle.com/go/professional](https://apex.oracle.com/go/professional)
- Oracle APEX : Empowering Low Code Apps with AI  
[apex.oracle.com/go/ai-learn](https://apex.oracle.com/go/ai-learn)

**#Oracle #LowCode #orclAPEX #orclAPEXCertified #OracleCertified #AI #GenAI**

# Get Oracle APEX Certified !

[apex.oracle.com/go/professional-ai-lp](https://apex.oracle.com/go/professional-ai-lp)

## Why should you get certified?

- Validates your skills, making you more competitive in job markets that require Oracle APEX low-code development expertise
- Ensures you understand best practices for building secure, scalable web and mobile apps with world-class features that can be deployed anywhere—cloud or on-premises.
- Showcase your skills in low-code application development
- Enhance your expertise in AI-powered low-code app development
- Open new career opportunities with Oracle APEX Cloud Developer Professional certification



**#Oracle #LowCode #orclAPEX #orclAPEXCertified #OracleCertified #AI #GenAI**

# Become a Certified Oracle APEX Developer Professional

[apex.oracle.com/go/professional-ai-lp](https://apex.oracle.com/go/professional-ai-lp)

**1**

## Register

Login and Subscribe  
to the Learning Path  
for Free

**2**

## Complete the first Course

Complete the Oracle  
APEX Professional  
Course along with  
Hands-on Labs

**3**

## Complete the Second Course

Complete the Oracle  
APEX: Empowering Low  
Code Apps with AI  
Course along with the  
Hands-on Labs

**4**

## Prepare for the Certification

Take up the Practice  
Exam and self asses  
your Skills

**5**

## Get Certified

Pass the exam and earn  
your Badge!

# Summary

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# Oracle APEX

## Summary

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- Used by real customers for real applications: It is used for both opportunistic and mission-critical apps that service tens of thousands of users.
- Well-Established Product: First released in 2004
- The most powerful Low-Code Application Development Platform allows developers to focus on solving business problems and delivering superior solutions with less time and effort spent on mundane and repetitive lower-level coding.
- Continually growing: Oracle install base is adopting Oracle APEX for increasing numbers of projects, and is increasingly an approved corporate IT standard.



# Oracle APEX

## Summary

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- Aligned with industry trends: Strong support for HTML5 development frameworks, Modern & responsive CSS3 UI, integrated JavaScript libraries, Browser-based, self-service provisioning, flexible development and deployment including cloud services.
- Consistent with Oracle developers skill set: SQL, PL/SQL, Oracle Database. Proficiency in the Oracle database easily translates into an ability to develop web applications.



# Learn More...

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Primary site

[apex.oracle.com](https://apex.oracle.com)

APEX Shortcuts

[apex.oracle.com/shortcuts](https://apex.oracle.com/shortcuts)

APEX Community

[apex.oracle.com/community](https://apex.oracle.com/community)

Blogs

[blogs.oracle.com/apex](https://blogs.oracle.com/apex)

APEX on Autonomous

[apex.oracle.com/autonomous](https://apex.oracle.com/autonomous)

Database Cloud Services

[cloud.oracle.com/database](https://cloud.oracle.com/database)

Oracle APEX Education

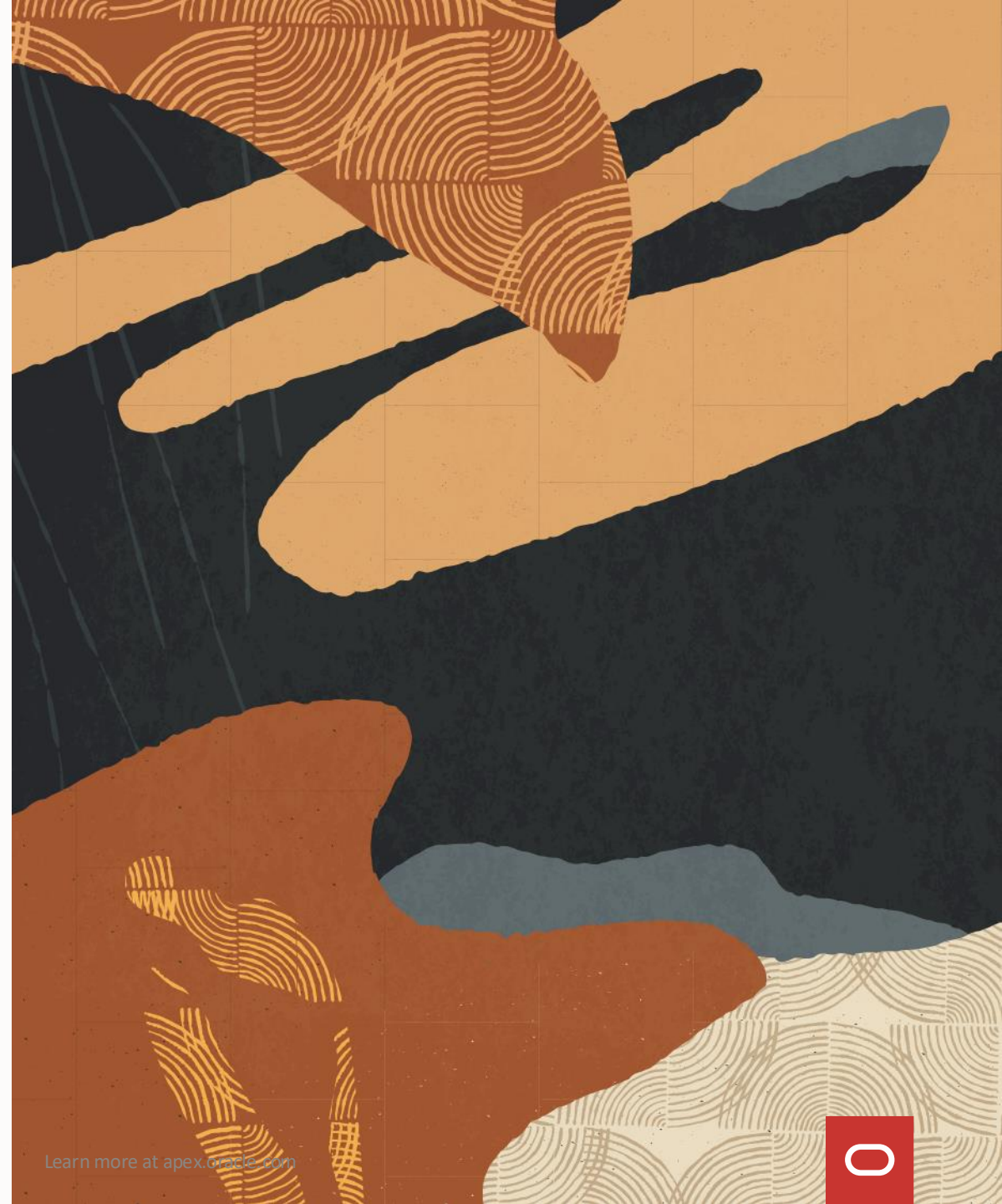
[apex.oracle.com/education](https://apex.oracle.com/education)

Oracle APEX + AI

[apex.oracle.com/go/ai](https://apex.oracle.com/go/ai)

# Thank you

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# ORACLE

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Our mission is to help people see  
data in new ways, discover insights,  
unlock endless possibilities.

