


The Developer Advocates present

SAP CodeJam

2024

>_ Combine SAP CAP
with SAP HANA Cloud



Melbourne, Australia 
May 23, 2024



Agenda

- Introduction to SAP Cloud Application Programming Model
- Introduction to SAP Business Application Studio
- Exercise 1 - Set Up SAP HANA Cloud and Development Environment
- Exercise 2 - Create an SAP Cloud Application Programming Model Project for SAP HANA Cloud
- Exercise 3 - Create Database Artifacts Using Core Data Services for SAP HANA Cloud
- Exercise 4 - Create a User Interface with CAP
- Exercise 5 - Add User Authentication to Your Application
- Exercise 6 - Create Calculation View and Expose via CAP
- Exercise 7 - Create HANA Stored Procedure and Expose as CAP Service Function
- Wrap-Up

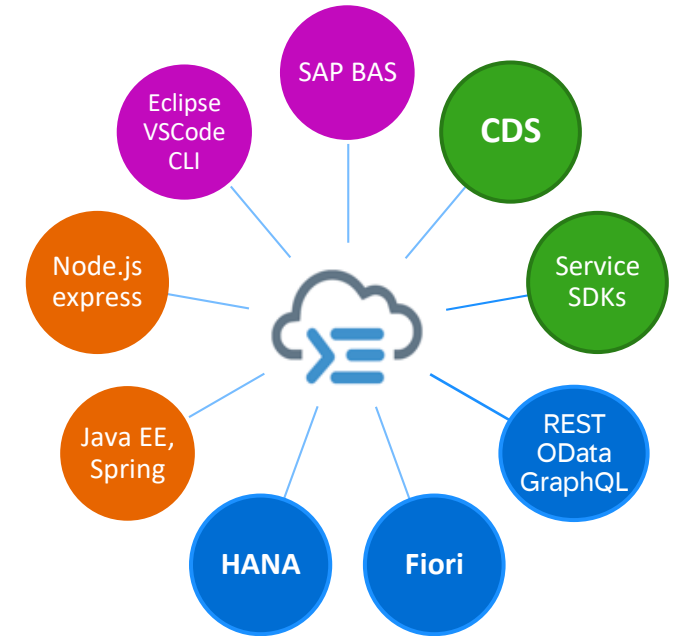
Introduction to SAP Cloud Application Programming Model

Introduction – Cloud Application Programming Model

The SAP Cloud Application Programming Model is an **opinionated**, yet **open** framework of tools, languages and libraries to efficiently build enterprise-grade services and applications.

It guides developers along a ‘golden path’ of proven **best practices**, while minimizing boilerplate so they can **focus on their domain** problems at hand.

The framework features a mix of broadly adopted **open-source** and **SAP** tools and technologies.



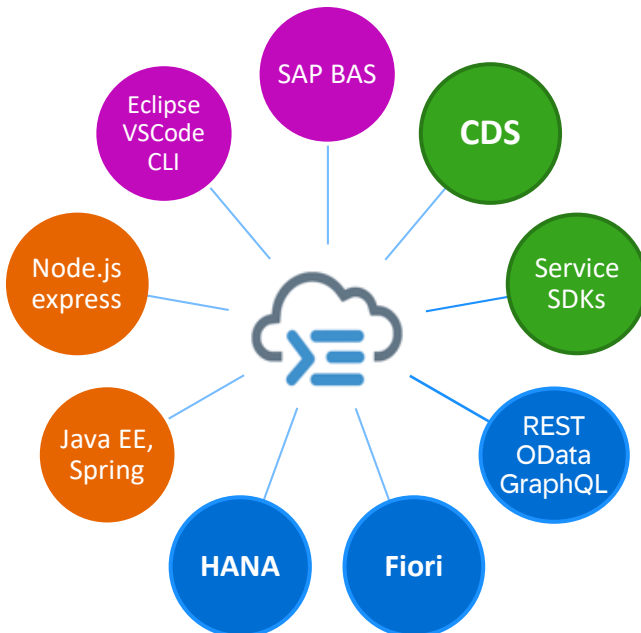
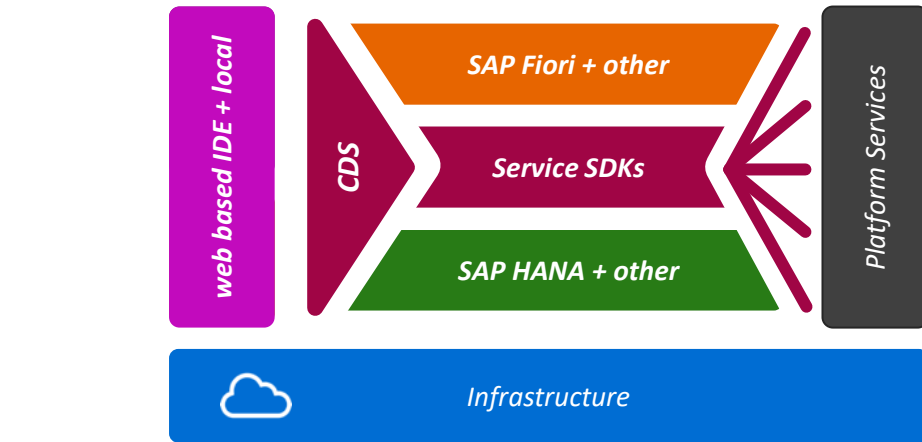
SAP Cloud Application Programming Model – One Level Deeper

We complement *cloud-native technologies* with...

- a **CDS-based Services** framework...
- w/ intrinsic **enterprise** & **cloud** qualities

w/ *1st-class support* by and for...

- **SAP Business Application Studio**
 - **SAP Fiori**
 - **SAP HANA**
 - **S/4 Extension** scenarios, ...
- } *without lock-in!*



SAP S/4HANA

SAP BTP

SAP Concur

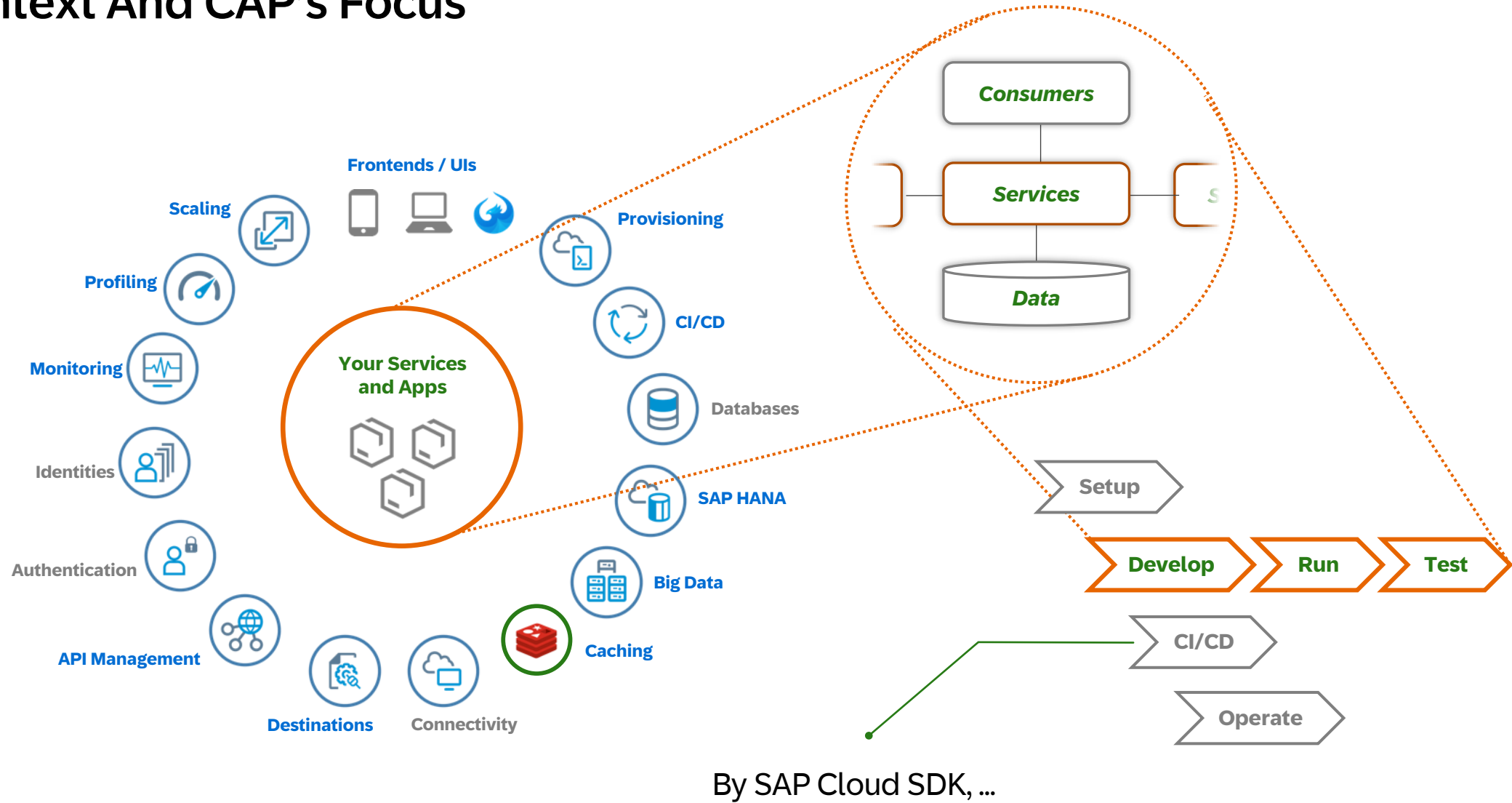
SAP SuccessFactors

SAP Customer Experience

→ **Guidance** and **best practices** leveraging proven SAP technologies + Open Source software

→ A *consistent* end-to-end **programming model** for *enterprise* services & applications

Context And CAP's Focus



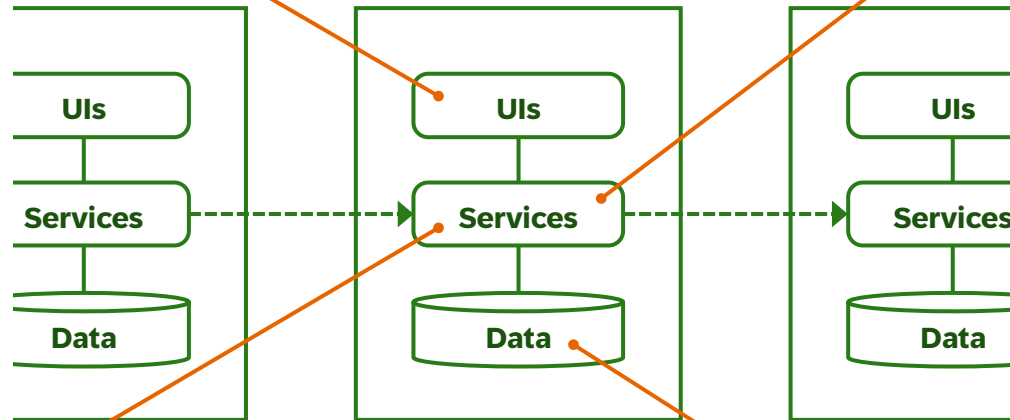
CAP Focus Areas Breakdown

Serving Fiori UIs

- OData v2+v4
- Draft support
- \$batch support

Providing Services

- Service Definitions in CDS
- Service Providers
- Event Handlers → generic + custom
- **Emitting Events**



Consuming Services

- Import Service Definitions from OData, ...
- Mashup with local services (using CDS)
- Service Client APIs → typed / cds.ql; pre-built S/4
- Connectivity & Resilience by SDKs
- **Subscribing to & Handling Events**

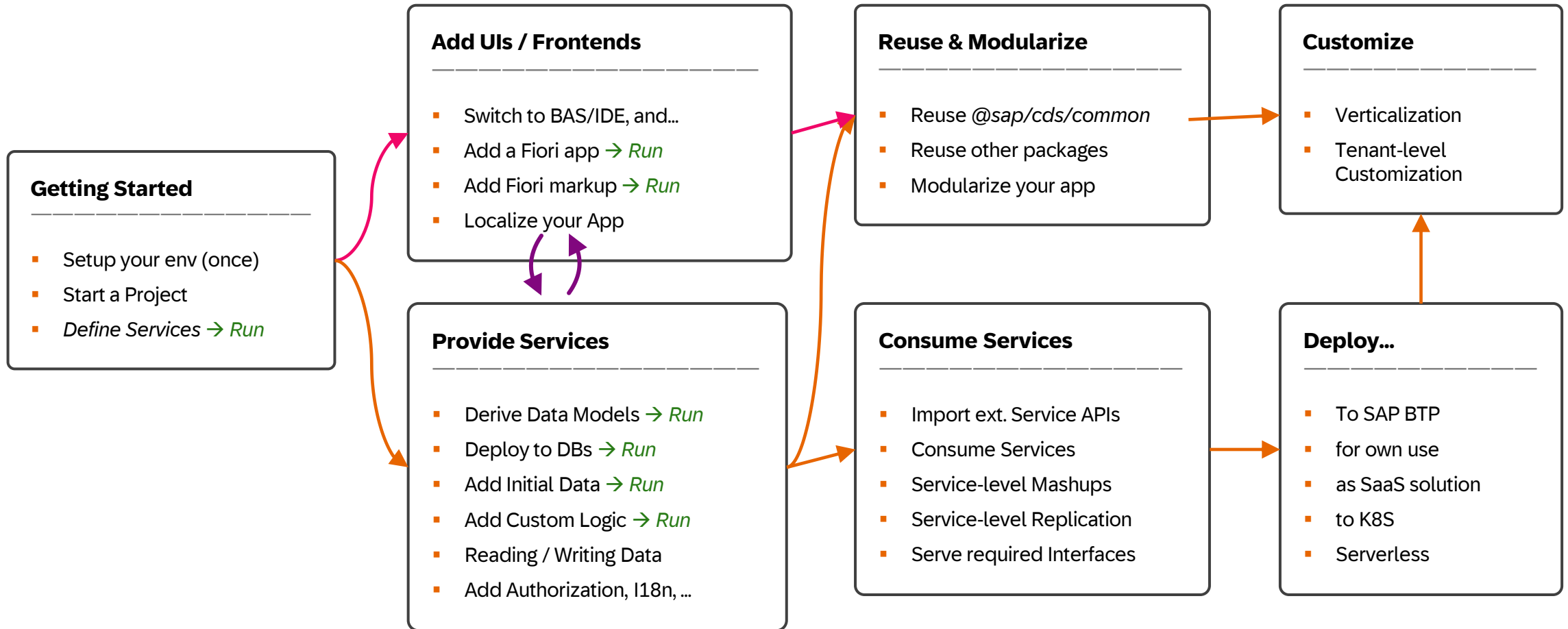
Database Support

- Out-of-the-box: **HANA**, **sqlite**, PostgreSQL (community)
- Extensible Data Access layers (cds.ql)
- **Schema evolution**

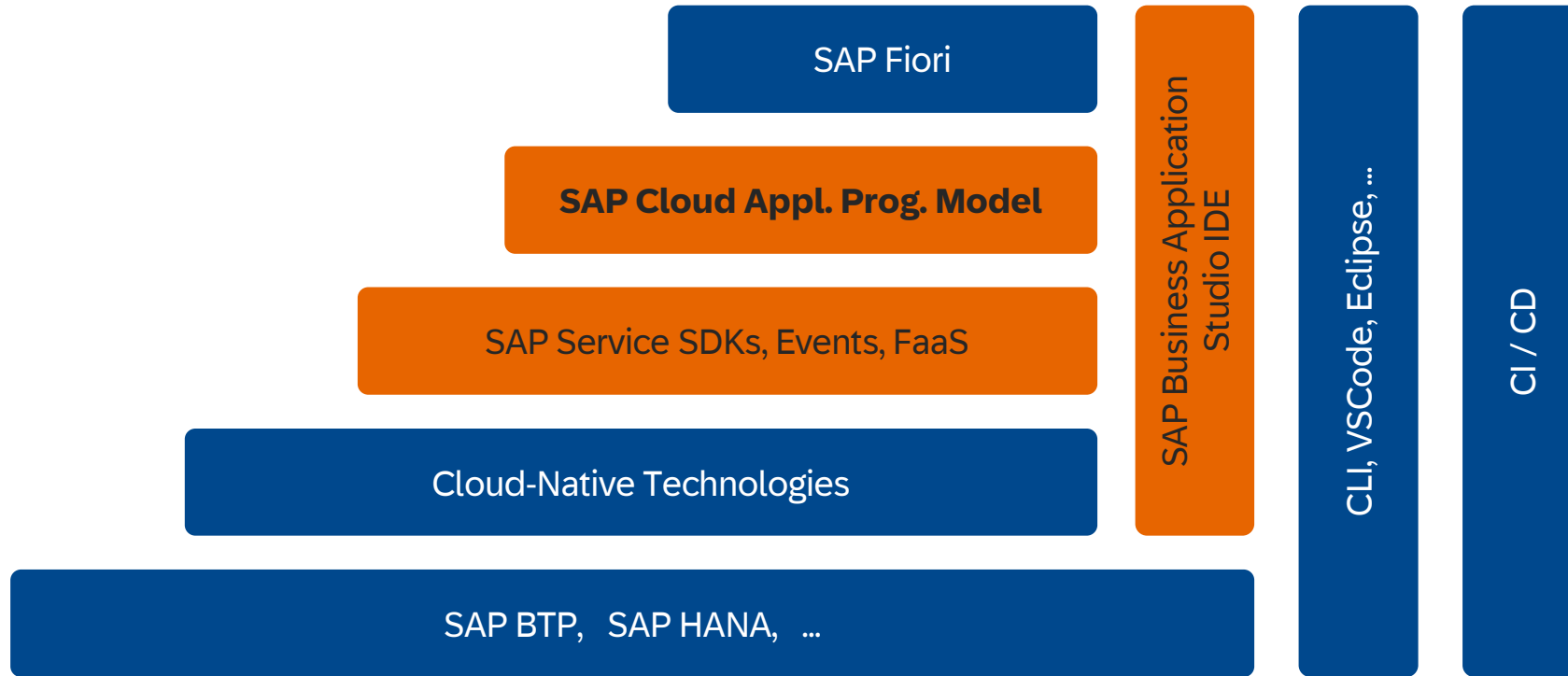
CAP: Key Value Propositions

- ✓ **Guidance and Best Practices** → opinionated *and* staying open and flexible
- ✓ **Intrinsic Enterprise & Cloud Qualities** → taken care of out-of-the-box
- ✓ **Integration and Interoperability** → easily reuse models and services
- ✓ **Accelerated Development** → grow as you go & time to market
- ✓ **Focus on your Domain** → what, not how; minimized boilerplate
- ✓ **Minimized Footprint** → enabling serverless deployments
- ✓ **Safeguarded Investments** → e.g. on journeys to new platform picks

Cookbook — Walking Through Your Tasks...



CAP: A Layered Model

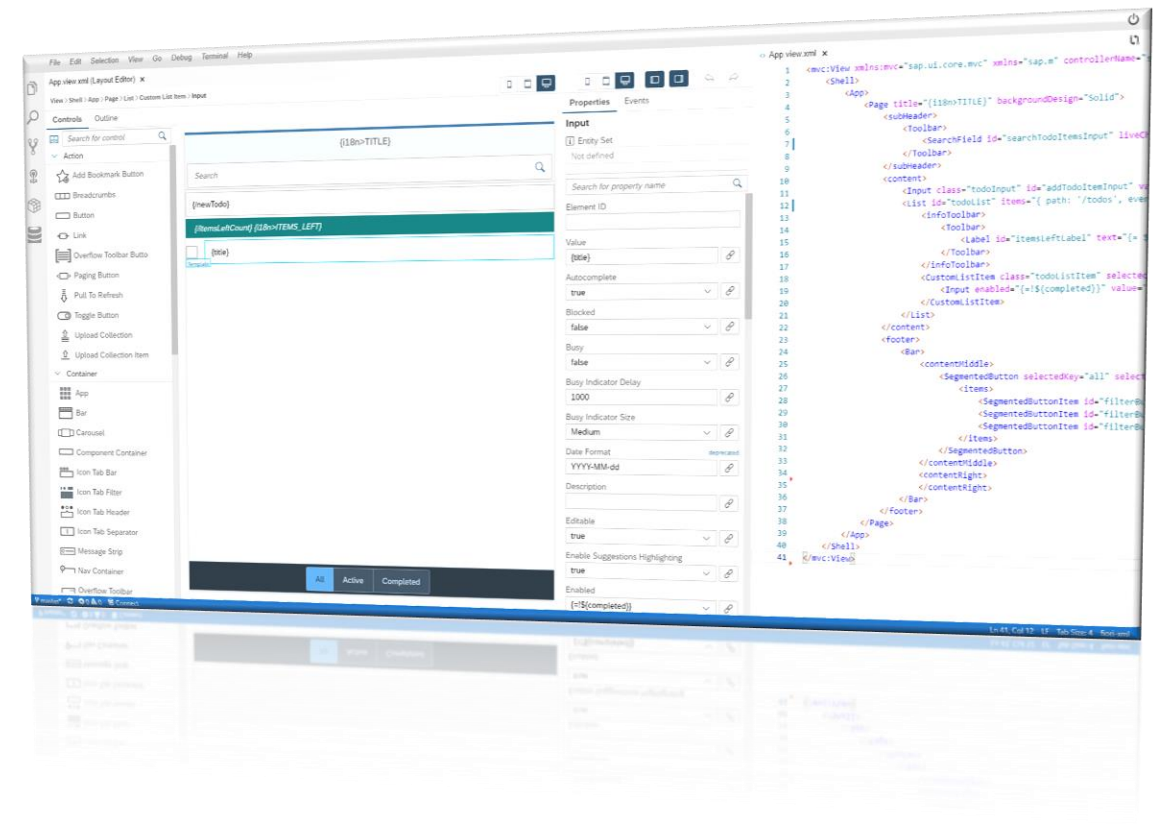
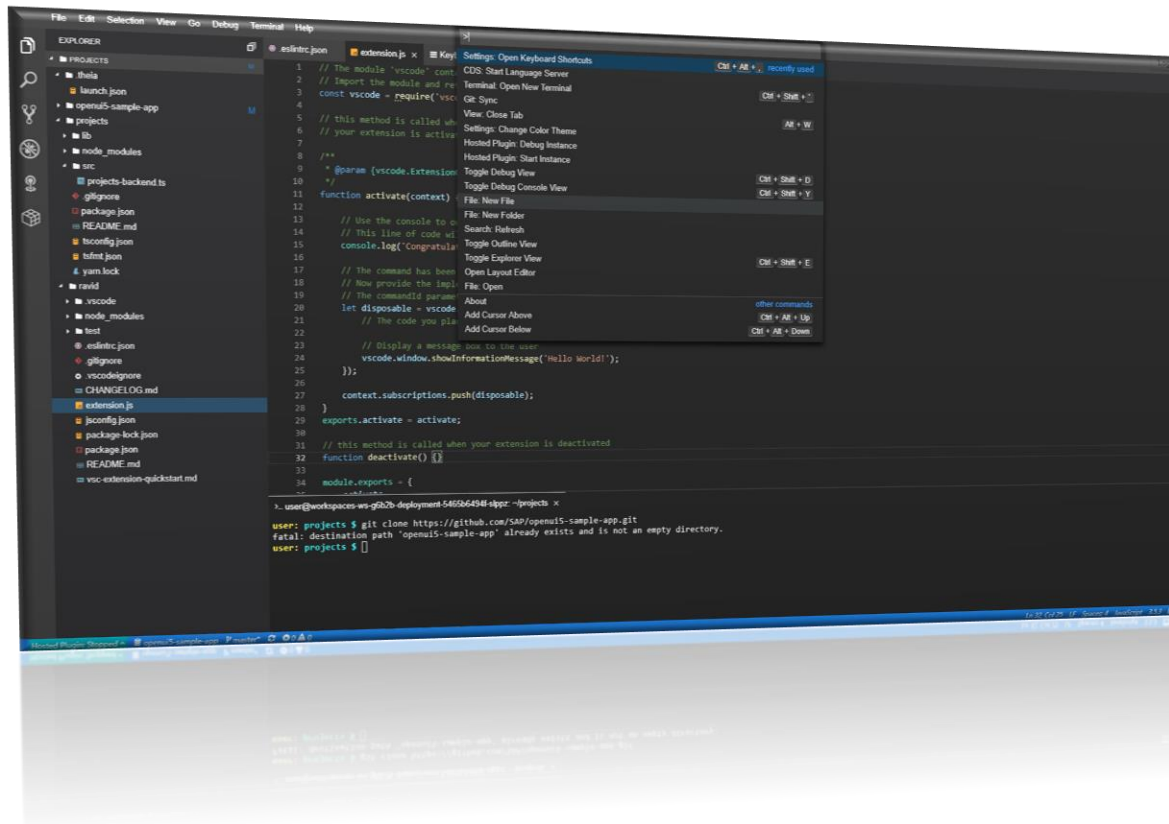


Introduction to SAP Business Application Studio

SAP Business Application Studio on BTP

General Availability on Azure, AWS, Google, and Ali-Cloud

A modern development environment, tailored for efficient development of business applications for SAP enterprise scenarios



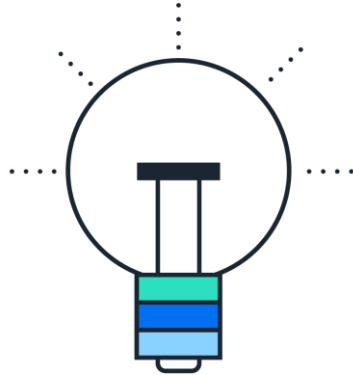
SAP Business Application Studio

Value Proposition



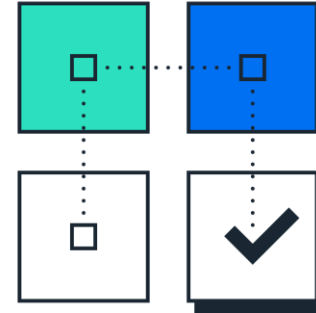
Turn-key Solution

Instantly spin-up pre-packaged environments with tools and runtimes, tailored for developing SAP business applications



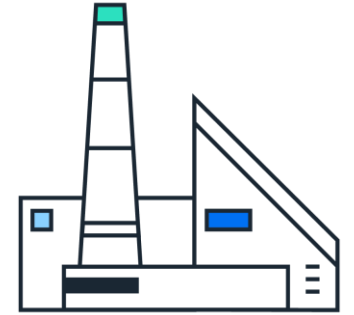
Simplified Development

Enjoy a seamless end-to-end development environment with a desktop like experience in the cloud
- available anywhere, anytime



Integrate SAP Solutions

Build smarter, more intelligent applications integrating SAP services, technologies, and solutions to cater for your business needs

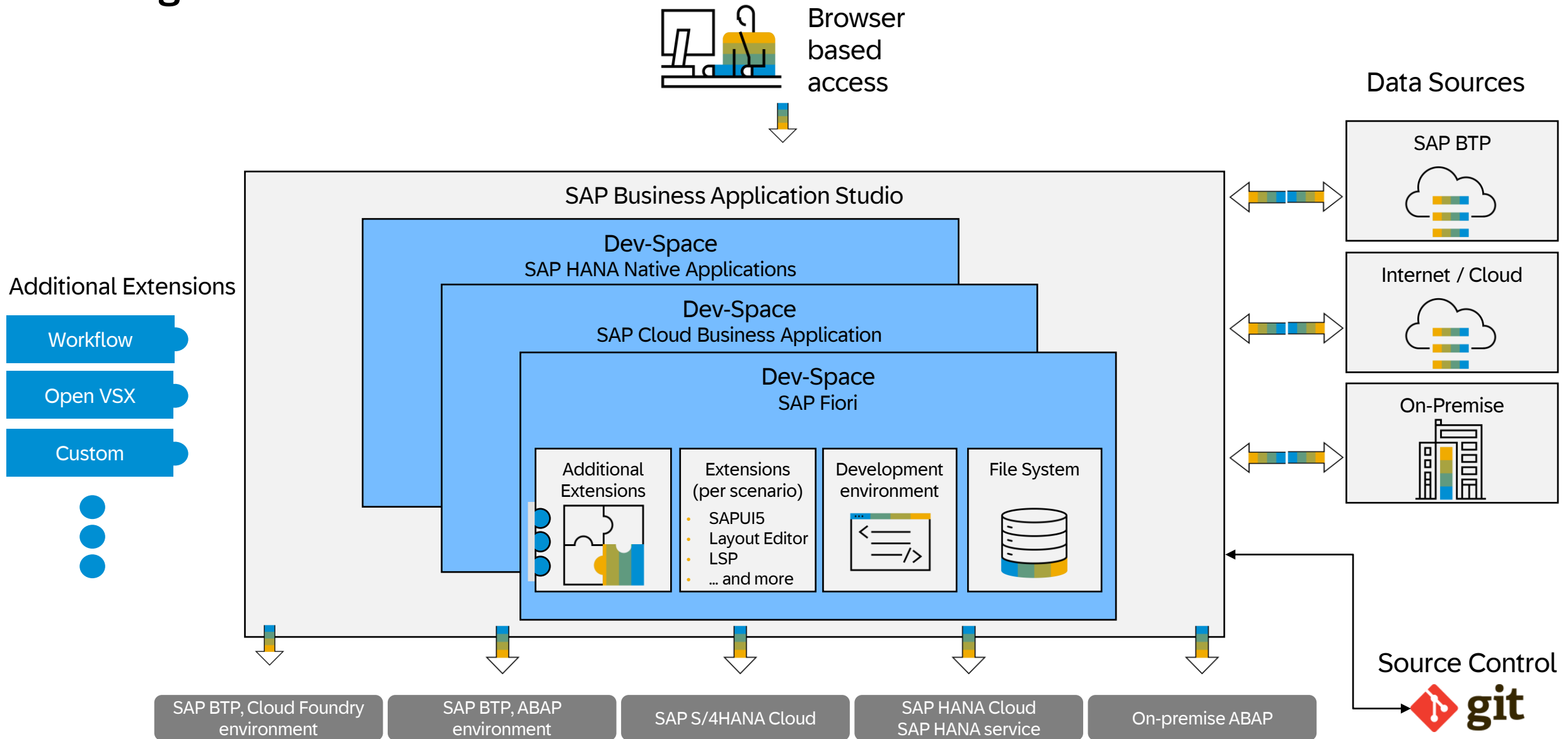


Ultimate Productivity

Accelerate app development using wizards, optimized code & graphical editors, local test run & debug, terminal (CLI) access, quick deployment, and more

SAP Business Application Studio is built on Open Source and leading industry standards

The Big Picture



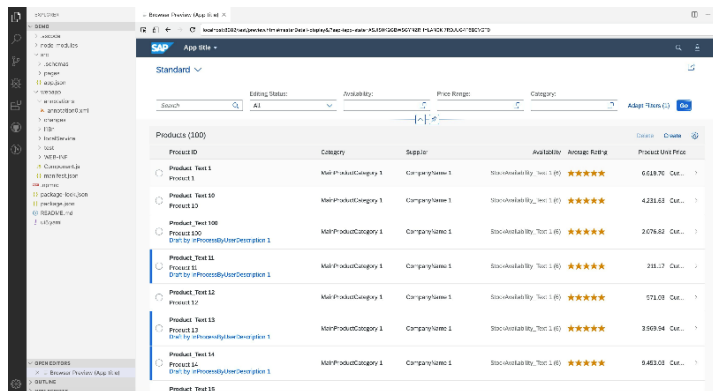
SAP Business Application Studio Vs. SAP Web IDE

	SAP Business Application Studio	SAP Web IDE Full Stack
Available on	SAP BTP, Cloud Foundry environment	SAP BTP, Neo environment
Deployment target	SAP BTP, Cloud Foundry environment, on-premise ABAP SAP BTP, ABAP environment	SAP BTP, Cloud Foundry environment, on-premise ABAP, SAP BTP, Neo environment
Solution	Instantly spin-up pre-packaged isolated environments/Dev-spaces (“virtual machine on the cloud”) with tools and runtimes, tailored per business scenario which provide more control over the environment and code Configure and share Dev-spaces*	Generic workspace that contains many tools. Some tools are not necessarily required for the target business scenario
Experience	Embraces VS Code experience , will provide the ability to add custom extensions* Desktop like experience in the cloud including local test, run & debug, terminal (CLI) access, and superior code editors	SAP proprietary experience Browser based experience
Support for various personas	Better support for pro-code, cloud and full stack developers with superior for Java and node.js coding Additional personas can be supported with a suited experience per persona using dev-spaces concept.	<ul style="list-style-type: none"> • Cloud and full stack developers – partial • Web/mobile developers • Similar experience for all personas
Open Source & standards	Based on open source & leading industry standards Provides possibility to quickly integrate capabilities and technologies that exist in the market*	Uses open sources but majority is proprietary SAP proprietary framework with limited number of extensions

Visual Studio Code and SAP Business Application Studio

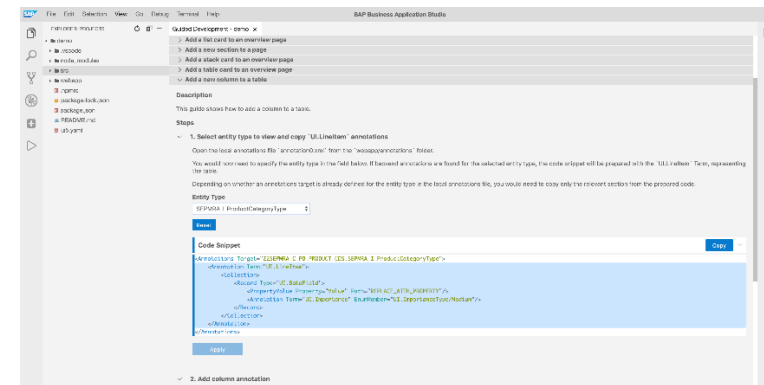
Visual Studio Code

- Provides development flexibility with **offline** capabilities
- Features a **developer-controlled**, highly configurable development environment
- Allows access to thousands of extensions from the Visual Studio Code marketplace
- Is part of a fast growing open source community



SAP Business Application Studio

- Provides a **managed**, preconfigured, **hosted environment**, optimized for SAP application development
- Can be **centrally administrated** with tools repositories, systems access and company policies
- Integrates with existing SAP solutions, systems & services
- [Easy access to Visual Studio Code-compatible extensions](#) from [open source Theia marketplace](#)



Hands-on Exercises

<https://github.com/SAP-samples/cap-hana-exercises-codejam>



Hands-on Exercises



Q & A

Thank you.

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