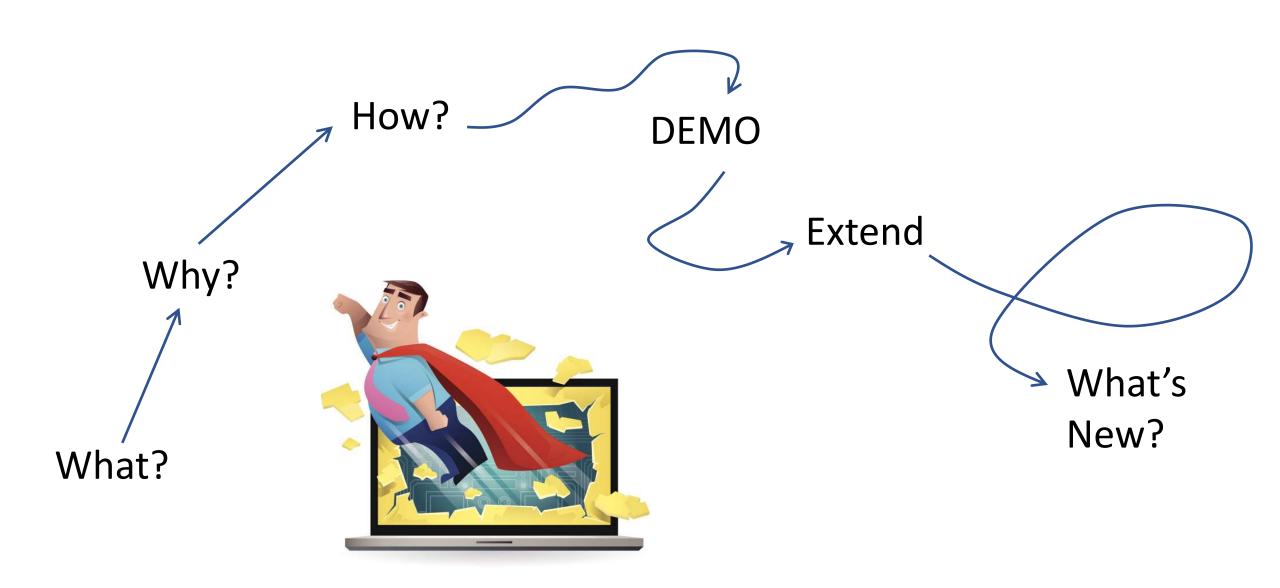


# MASTERINGSAP An SAPinsider Company





#### What is CAP?

"The SAP Cloud Application Programming Model (CAP) is a framework of languages, libraries, and tools for building enterprise-grade services and applications. It guides developers along a 'golden path' of proven best practices and a great wealth of out-of-the-box solutions to recurring tasks"

cap.cloud.sap/docs/about/

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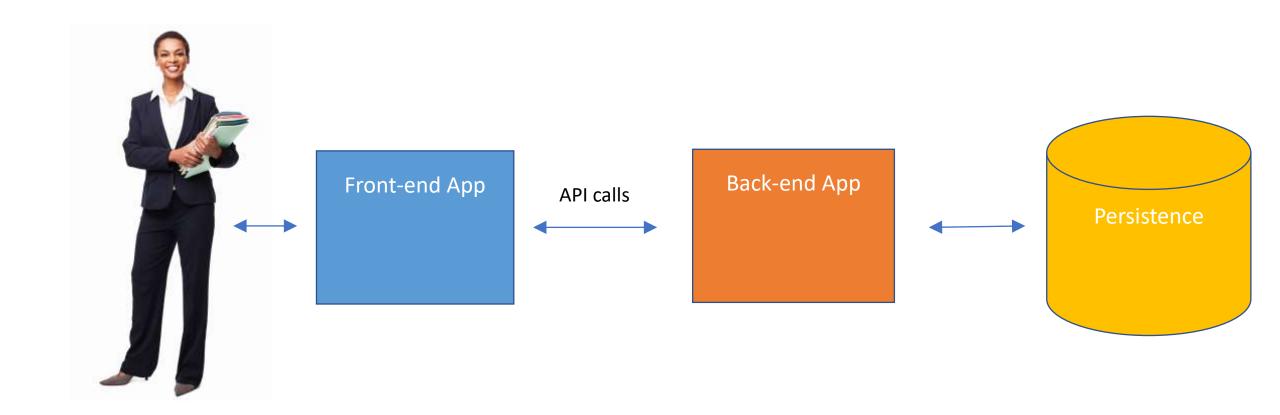
#### What is CAP?

- CAP massively speeds up development of application Back-ends
- By promoting consistency it lowers support costs too



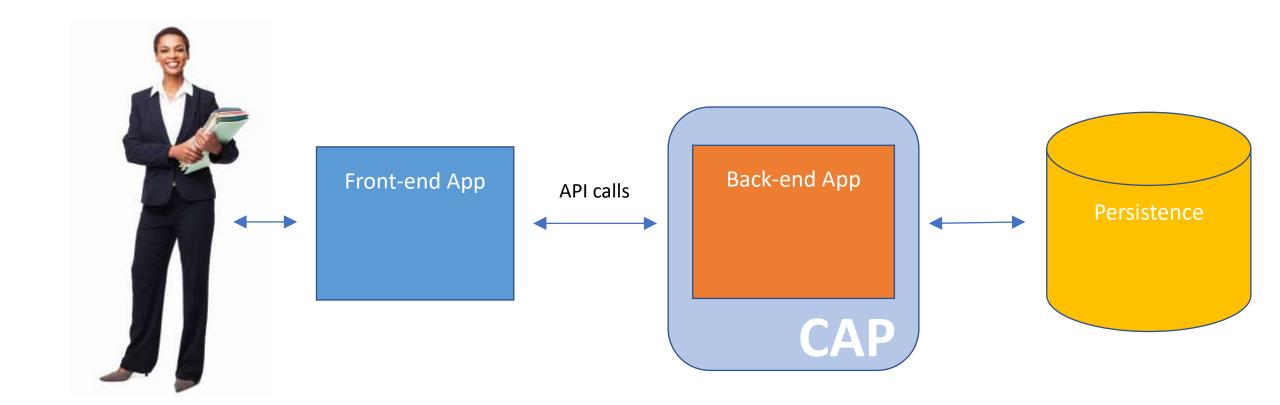
#### **MASTERINGSAP**

#### Back-end vs. Front-end



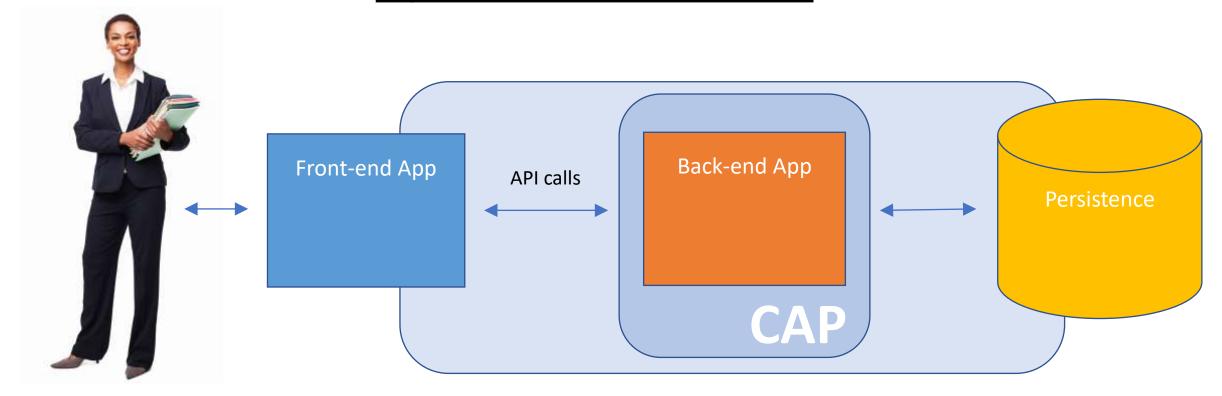
#### **MASTERINGSAP**

#### CAP is for Back-ends...



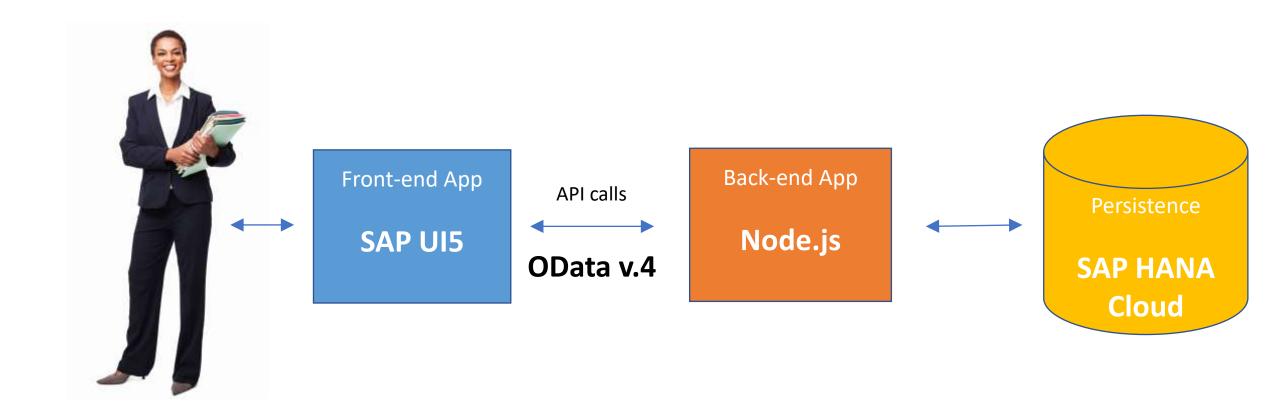
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# ...but can also deploy to the persistence layer & 'drive' Front-ends



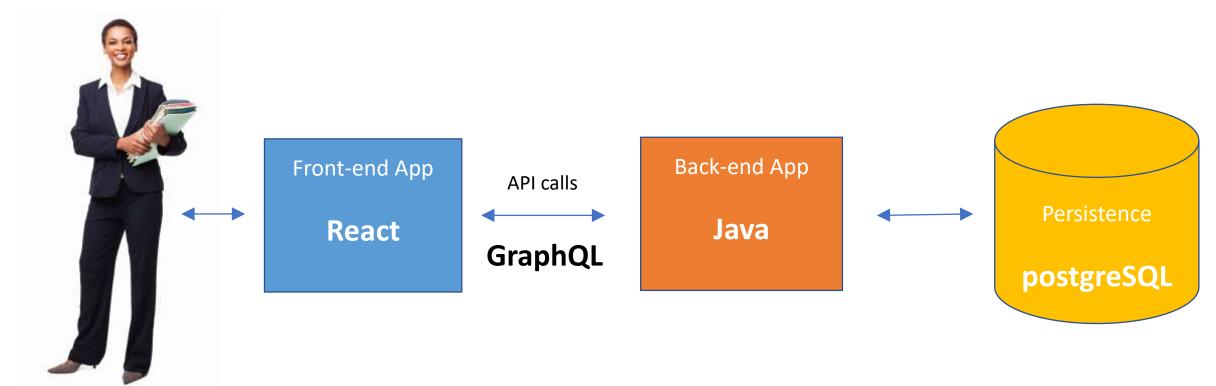


#### Common Stack





#### Alternate Stack



NB No lock in!

## MASTERING SAP

#### Flexibility contd.

#### **Deploy to**

- BTP Cloud Foundry runtime
- HANA on-prem
- BTP Kyma runtime

#### <u>Use</u>

- Visual Studio Code
- SAP Business Application Studio
- Something else





## Layers of abstraction

Machine Code

Networking

Assembler

Instruction sets

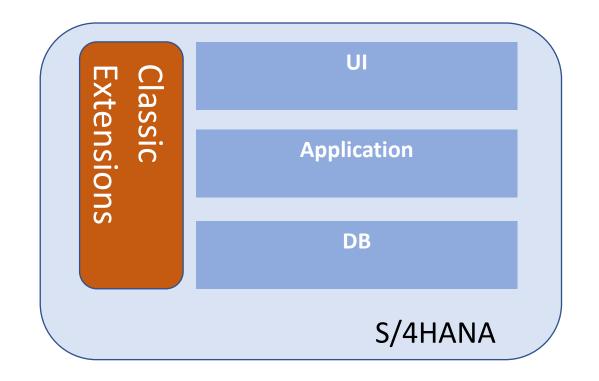
Garbage collection

Memory

Hardware

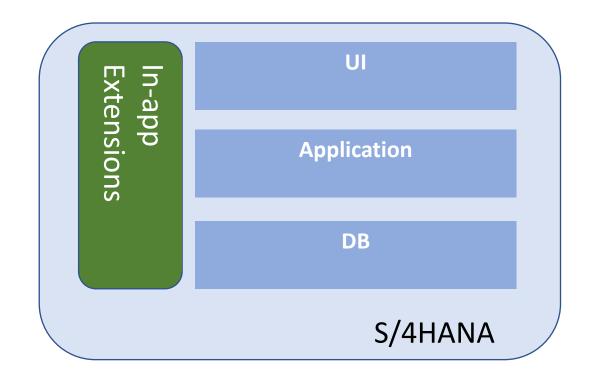


## Why does CAP Exist?





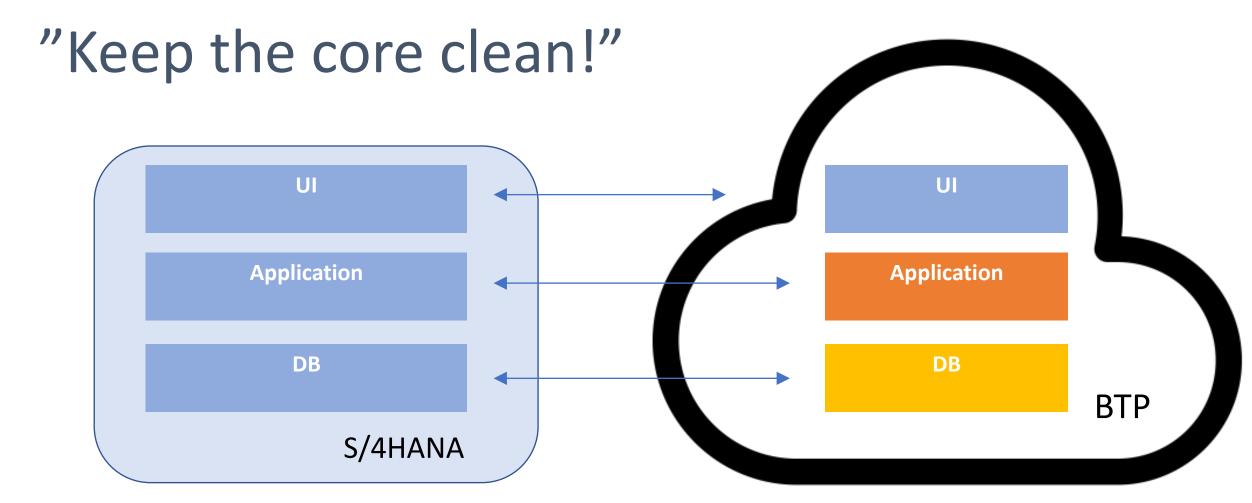
## Why does CAP Exist?







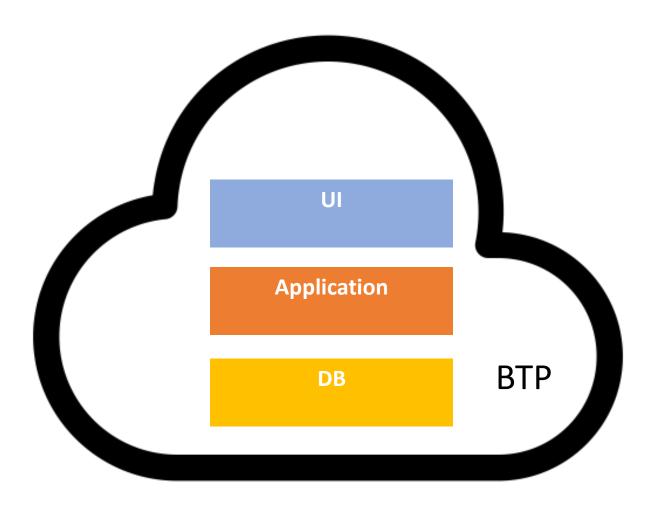
#### Side-by-side Extensions



Cloud by Kimmi Studio from NounProject.com



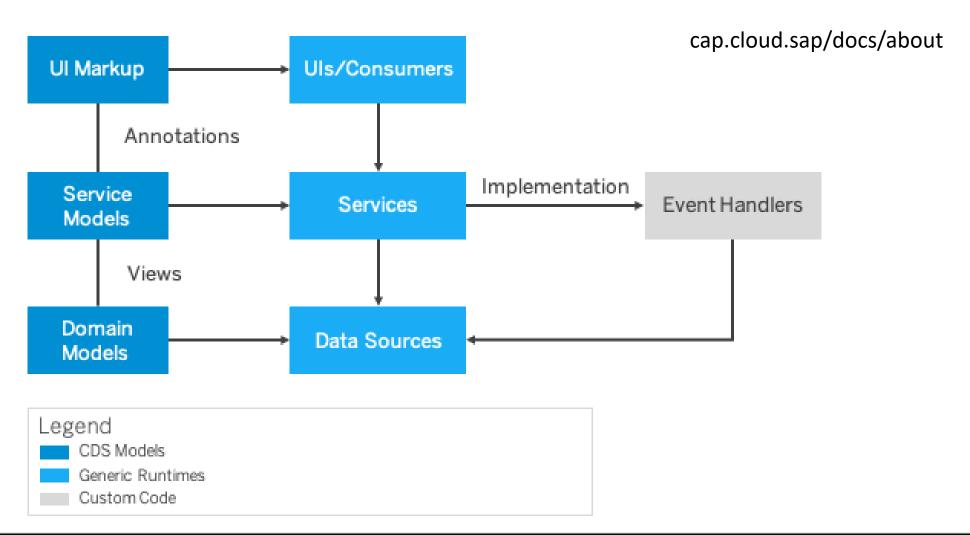
#### Why does CAP Exist?



Cloud by Kimmi Studio from NounProject.com

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#### How does it work?



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#### 1. Data Model

```
entity DeskTypes : CodeList {
    key code : String(5);
entity Offices : CodeList {
    key code : String(3);
entity Bookings : cuid, managed {
    bookingDate : Date;
    deskType : association to DeskTypes;
    office: association to Offices;
    email: String(240);
```



#### 2. Services

```
service Admin {
   entity DeskTypes as projection on deskbookings.DeskTypes
   entity Offices as projection on deskbookings.Offices
}
```

```
service Booking {
   entity Bookings as projection on deskbookings.Bookings
}
```

#### 3. Event handlers

```
srv.before ('CREATE', 'Bookings', async req => {
    const { bookingDate } = req.data
    You, 17 minutes ago * refactor validation

    const today = () => {
        const now = new Date()
            now.setHours(0)
            now.setMinutes(0)
            now.setSeconds(0)
            now.setMilliseconds(0)
            return now
    }

    if (today().getTime() > Date.parse(bookingDate))
        req.error(400, "Please enter current or future date")
})
```

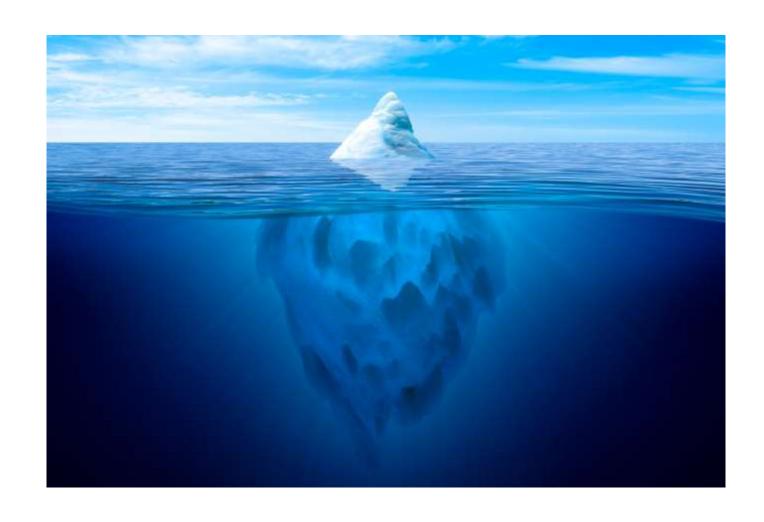


#### 4. Annotate

```
annotate book.Bookings with {
    bookingDate @Common.Label: 'Date';
    deskType @Common : {
        Label: 'Desk Type',
        Text: deskType.name
    office <a>@Common</a> : {
        Label: 'Office',
        Text: office.name
    };
   email @Common.Label: 'Email Address';
```

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Details?
cap.cloud.sap

#### **CAP Re-use**

1. Models

using from 'path/sourcemodel.cds'

2. Service Impl.

extend SomeEntity with { extraField : String(20)

3. Annotations

#### CAP Re-use

1. Models

2. Service Impl.

3. Annotations

```
const cds = require('@sap/cds')
const base_impl = require ('other-package/srv/service-impl')
module.exports = cds.service.impl(async (srv) => {
  srv.after('READ', 'SomeEntity', async (resultsIn, req) => {
await base_impl.call (this,srv)
```

#### **CAP Re-use**

UI:{

1. Models

2. Service Impl.

3. Annotations

annotate service. Form Config with @(

Value : extraField,

```
@MikeEDoyle
```

#### What's New?

Multi-tenancy

Feature Toggles

**X**tensibility

GraphQL

repl

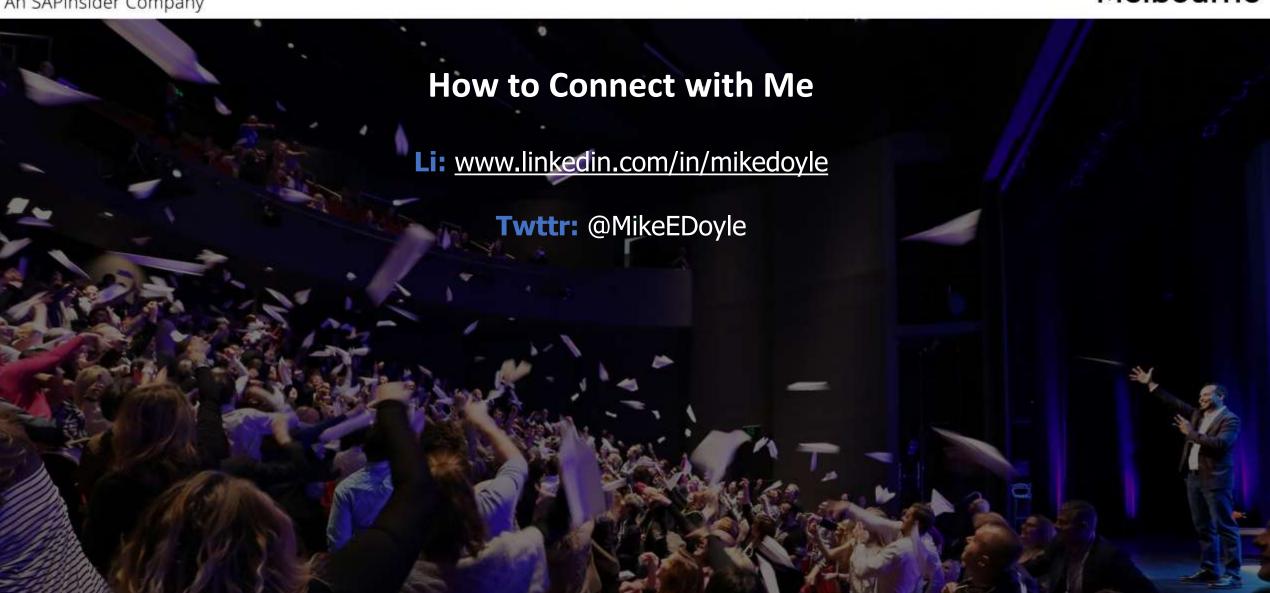
Kyma

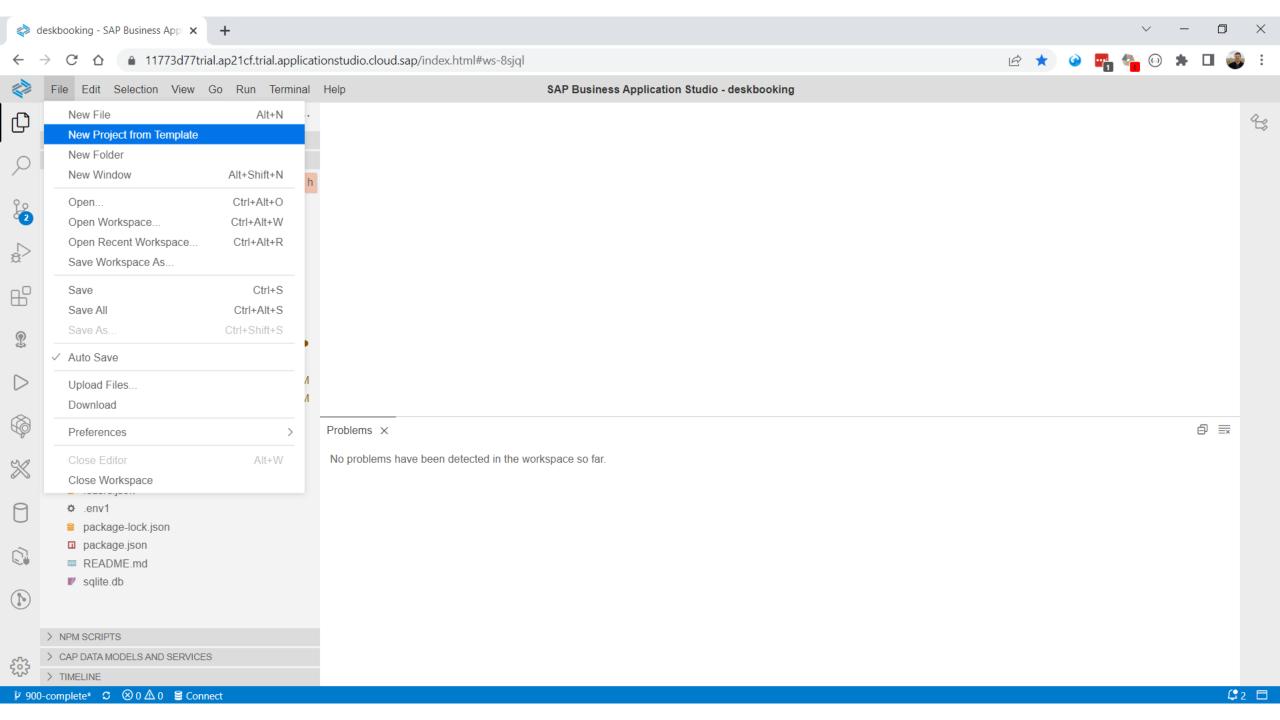


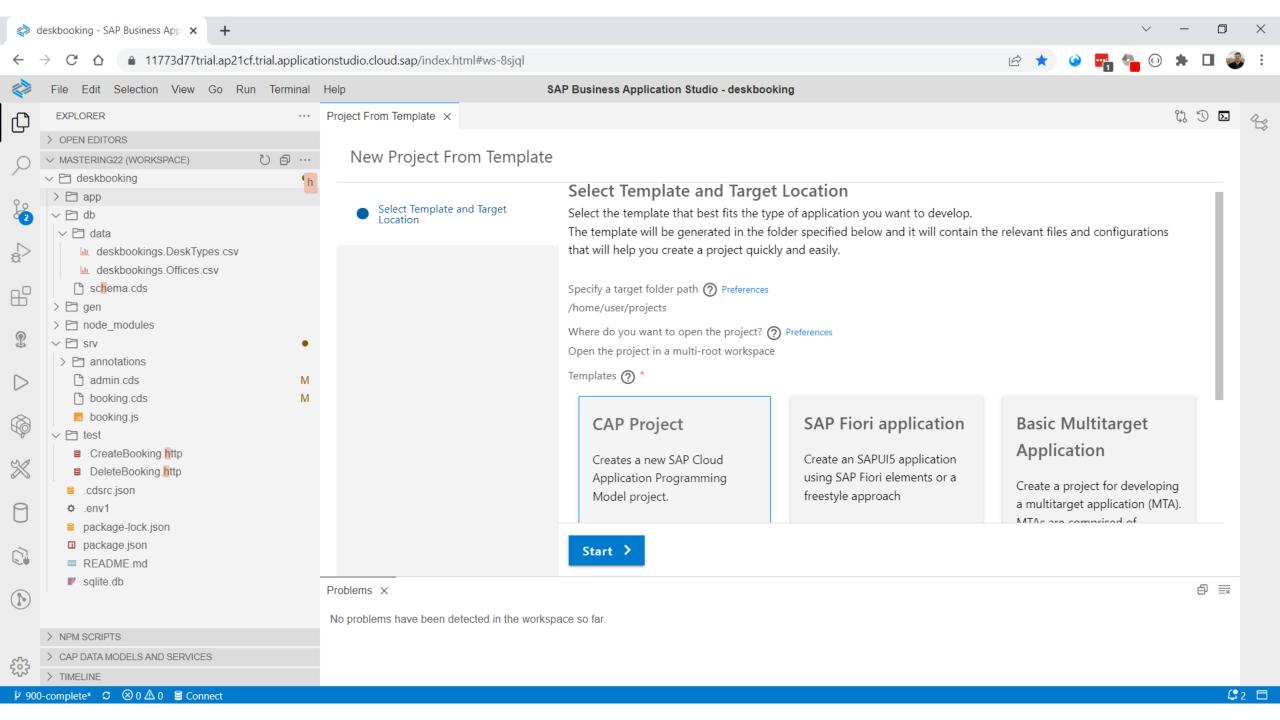
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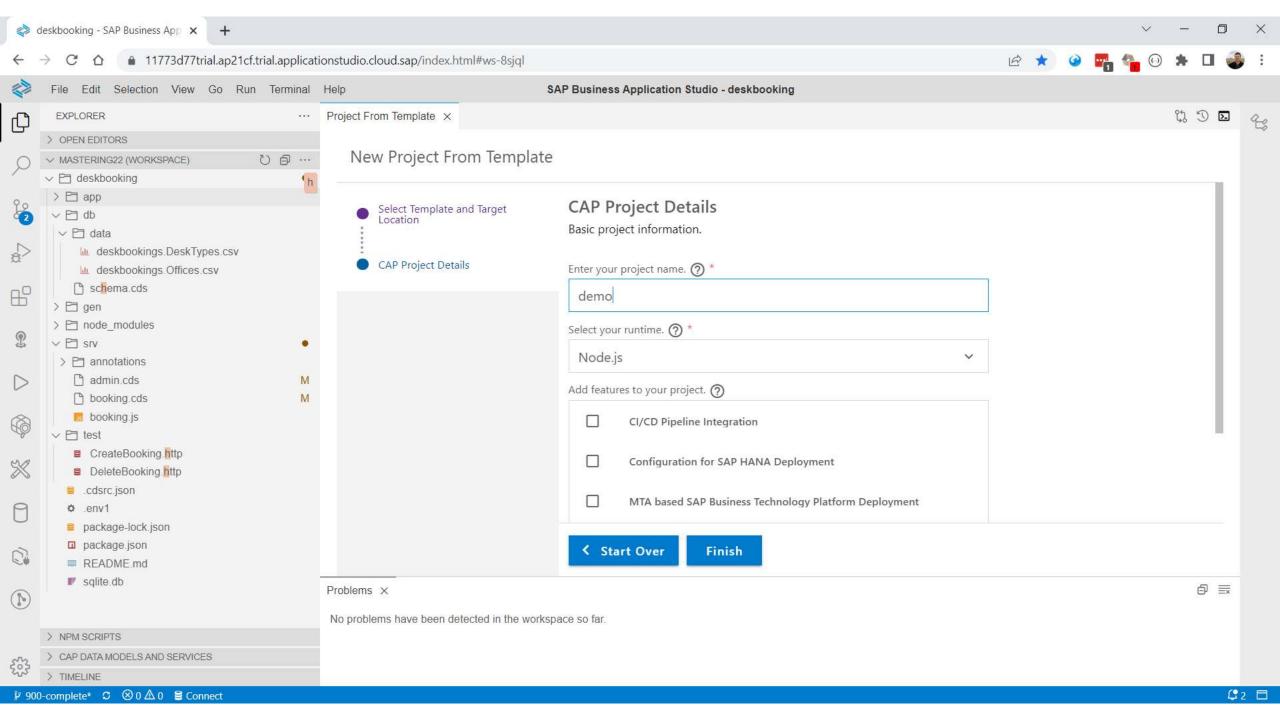


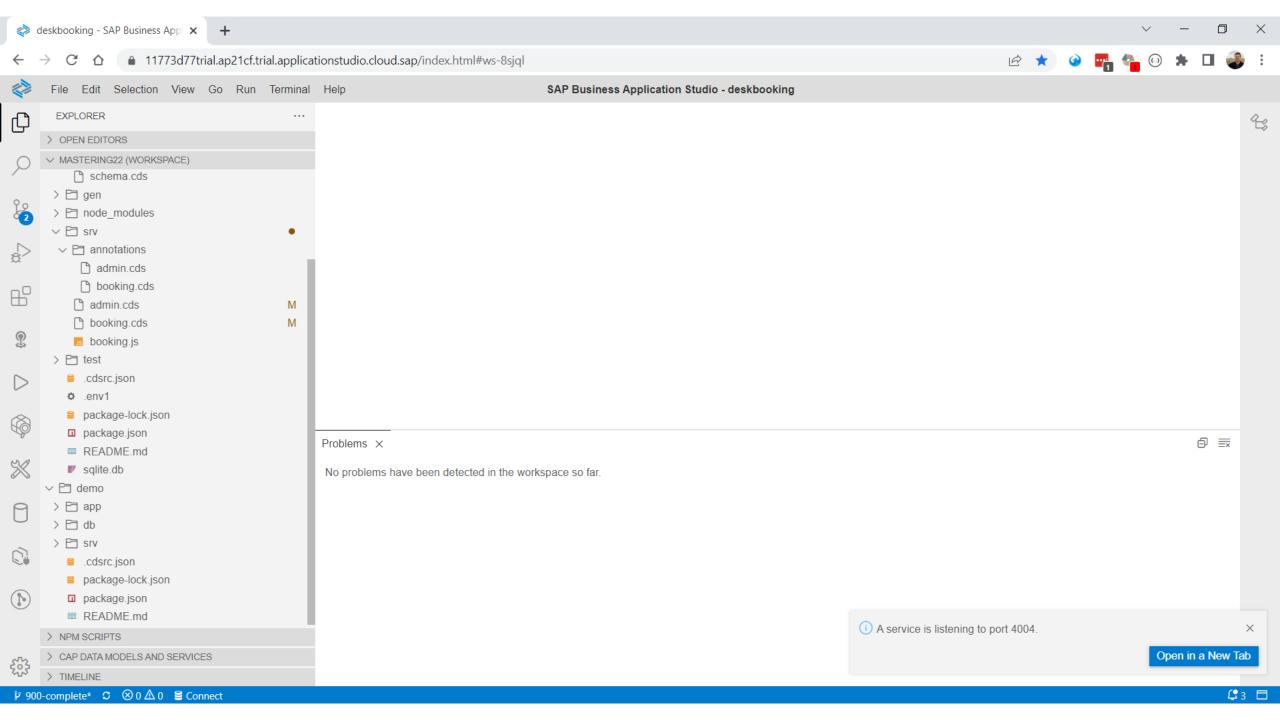
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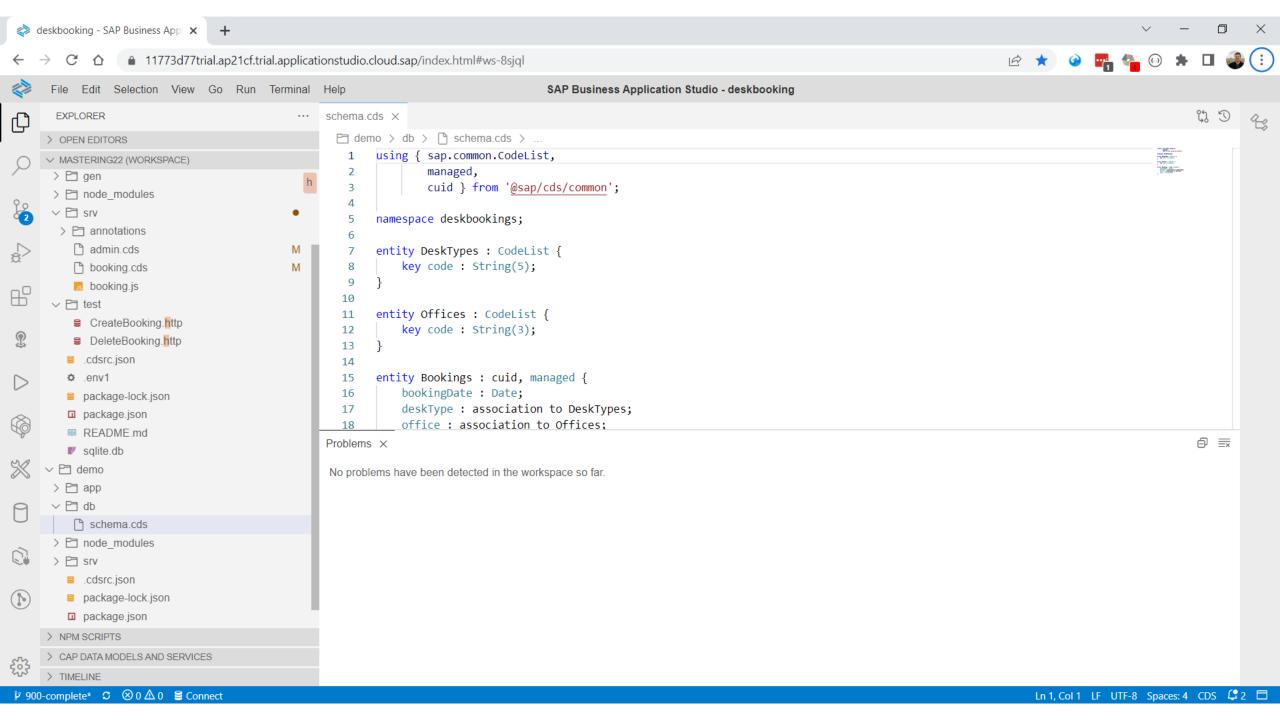


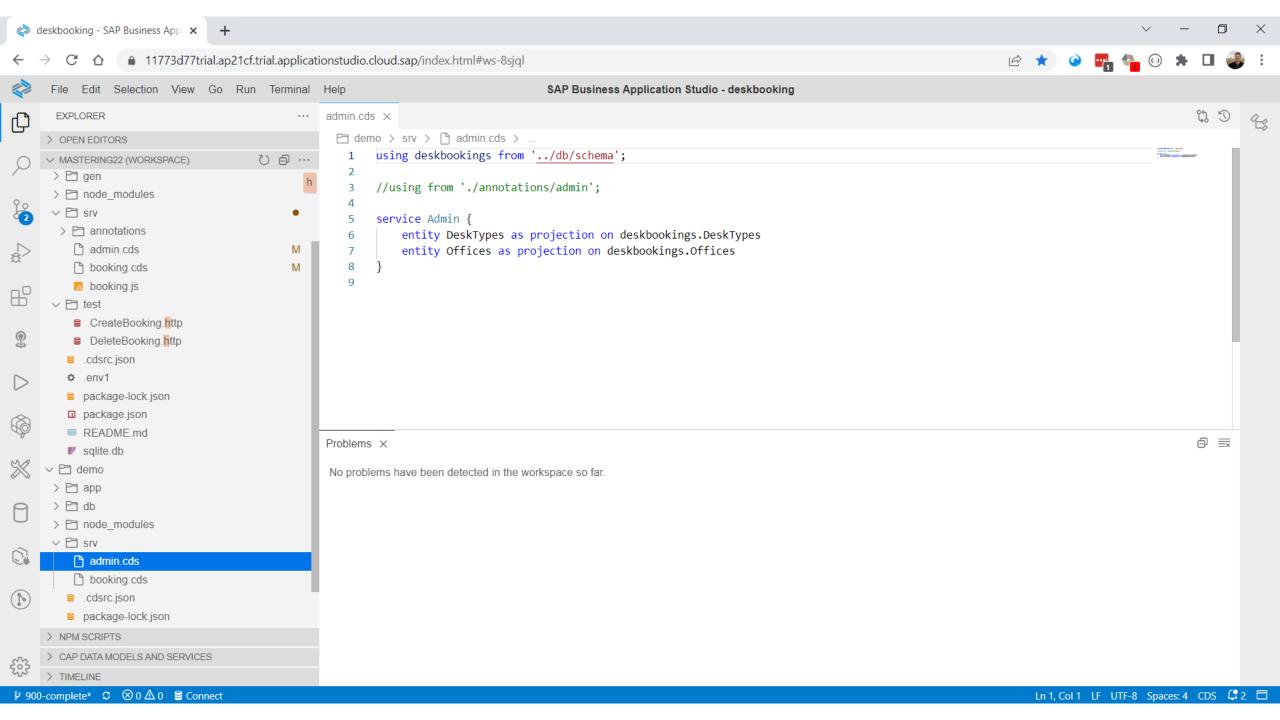


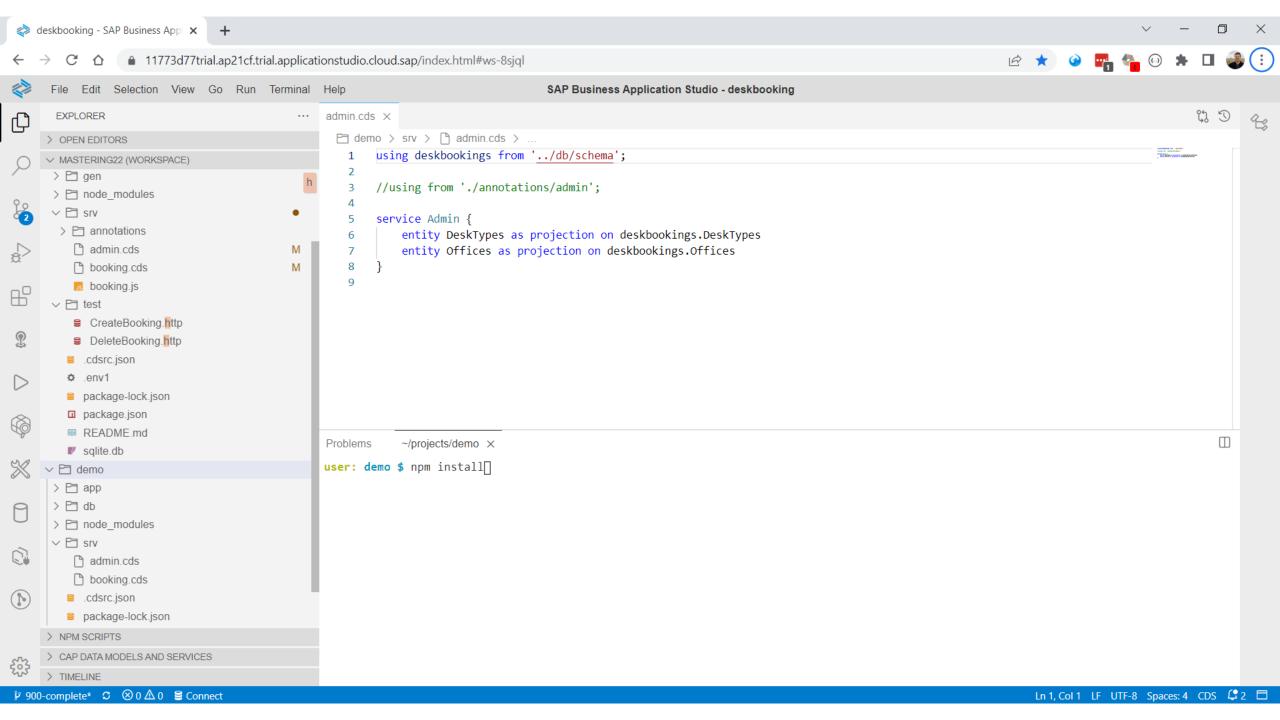


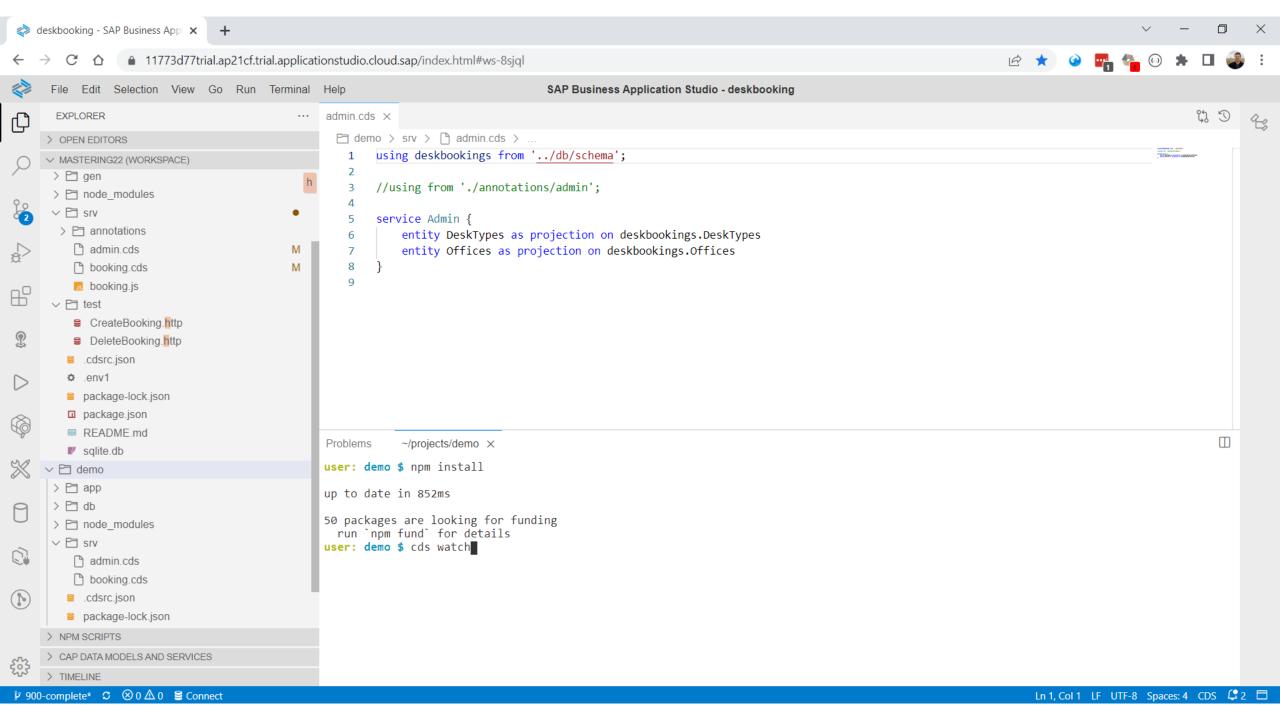


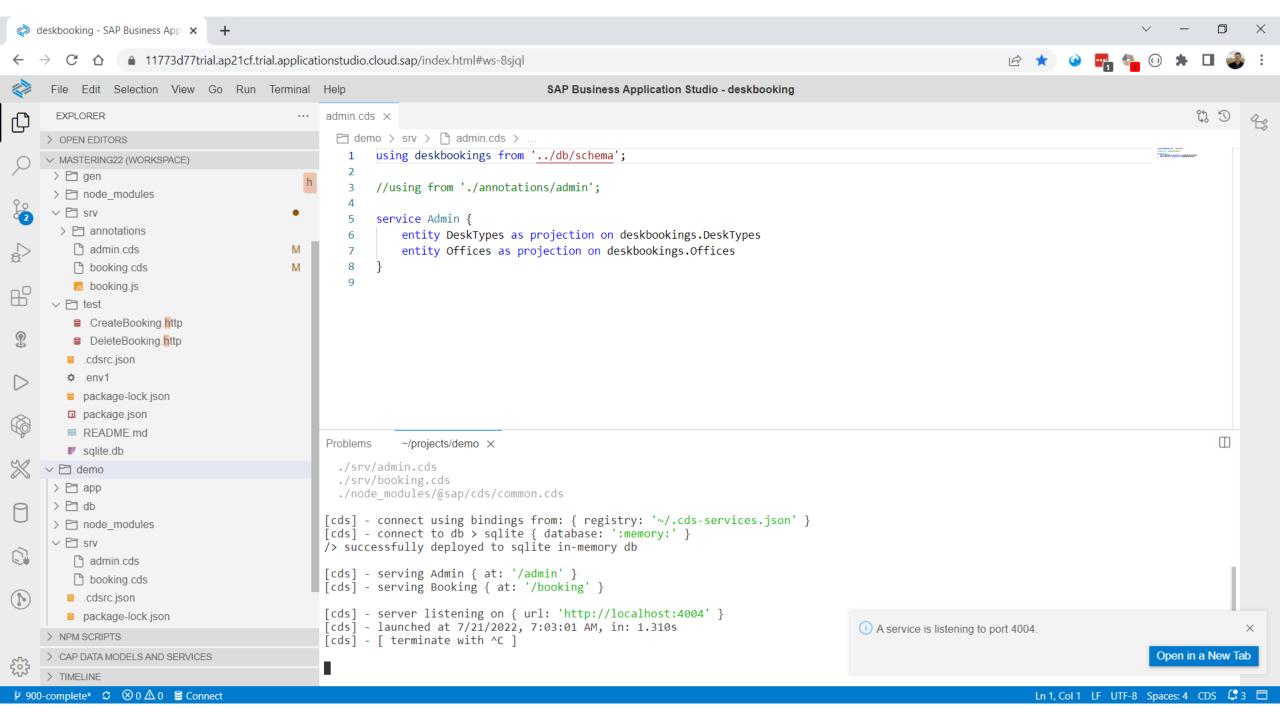


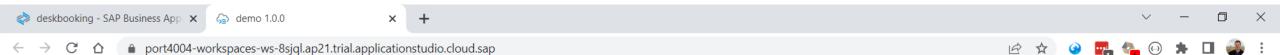












# Welcome to @sap/cds Server

Serving demo 1.0.0

These are the paths currently served ...

## Web Applications:

— none —

## Service Endpoints:

#### /admin / \$metadata

- DeskTypes → Fiori preview
- Offices → Fiori preview

### /booking / \$metadata

- $\bullet \ \ Bookings \to \mathsf{Fiori} \ \mathsf{preview}$
- DeskTypes  $\rightarrow$  Fiori preview
- Offices → Fiori preview

This is an automatically generated page.

You can replace it with a custom ./app/index.html.

