

# SAP BTP Trial Tutorial\_221119

이 튜토리얼은 SAP BTP에서 개발을 시작하는 개발자를 위한 가이드입니다. 플랫폼 기본 사항에 대해 알아보고, Trial 계정에 등록하고, App을 배포합니다.

## 1. Login SAP BTP

1. <https://account.hana.ondemand.com> 로 이동하여 SAP BTP cockpit에 로그인(Sign In)합니다.
2. SAP BTP Trial 계정이 없다면 Register를 통해 회원가입을 진행합니다.

SAP Business Technology Platform

**SAP BTP**

SAP's open platform as a service for developing cloud business applications in a fully provisioned environment.

Using a set of end-to-end services, capabilities, and tools, developers can build, extend, and integrate business applications in the cloud.

[Read more on cloudplatform.sap.com](#)

**SAP BTP Cockpit**

The central Web-based user interface for administrators, providing access to a number of functions for configuring and managing applications and connecting them to services on SAP BTP.

Use the cockpit to manage resources, services, security, monitor application metrics, and perform actions on cloud applications.

Sign In **Register**

More Information

## 2. Create Global Account

1. 로그인 후 Region을 선택하는 화면이 나타나면 **US East(VA)- AWS > Create Account** 를 선택

SAP BTP Cockpit

Welcome to SAP BTP Trial

Welcome to Your Personal Trial

Learn how to create and deploy cloud apps and gain access to a comprehensive set of platform services.

Hi Myeong Han,

Before you continue, we need to finalize your trial account creation. Choose the region that's closest to you:

 US East (VA) - AWS

 Singapore - Azure

 Europe (Frankfurt) - AWS

The region Europe (Frankfurt) is no longer available on SAP BTP Trial. See [What's New for SAP BTP](#).

**Create Account**

SAP Business Application Studio

Develop business applications using SAP's next-generation, Web-based

Build a Business Application Using CAP for Node.js

Extension Suite - Development Efficiency

Develop a business application using SAP Cloud Application Programming Model (CAP)

Get started with SAP Mobile Cards and create a manager's approval app with the help of SAP BTP trial.

APIs for SAP BTP

Manage, build, and extend the core capabilities of SAP BTP

Request Product Details with an Integration Scenario

Integration Suite

Set up your own SAP Integration Suite tenant and deploy an integration scenario where you

2. Account 생성이 완료되면, 아래와 같이 Global Account, Subaccount, Org, Space가 자동으로 생성됩니다.
3. **Continue**를 선택합니다.

SAP BTP Cockpit

Welcome to SAP BTP Trial

Welcome to Your Personal Trial

Learn how to create and deploy cloud apps and gain access to a comprehensive set of platform services.

We will now set up your account. This process can take a minute.

Region: US East (VA) - AWS

Global Account: 0b3ef4e2trial

Subaccount: trial

Org: 0b3ef4e2trial

Space: dev

**Continue**

SAP Business Application Studio

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Extension Suite - Digital Experience

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Welcome to Your Personal Trial

We will now set up your account. This process can take a minute.

Region: US East (VA) - AWS

Global Account: Processing

Subaccount: Pending

Org: Pending

Space: Pending

Continue

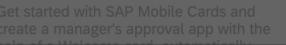
 SAP Business Application Studio  
Develop business applications using SAP's next-generation, Web-based IDE

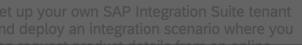
 Build a Business Application Using CAP for Node.js  
Extension Suite - Development Efficiency

 Get Started with SAP Mobile Cards  
Extension Suite - Digital Experience

 Request Product Details with an Integration Scenario  
Integration Suite

 Develop a business application using SAP Cloud Application Programming Model (CAP)





#### 4. Go To Your Trial Account를 선택합니다.

SAP BTP Cockpit

Welcome to SAP BTP Trial

Learn how to create and deploy cloud apps and gain access to a comprehensive set of platform services.

Go To Your Trial Account

Go To Your Trial Account

**Quick Tool Access**

 SAP Business Application Studio  
Develop business applications using SAP's next-generation, Web-based IDE

 CLI for BTP  
Manage your trial account using the command-line interface

 APIs for SAP BTP  
Manage, build, and extend the core capabilities of SAP BTP

**Start with Tutorials**

 Build a Business Application Using CAP for Node.js  
Extension Suite - Development Efficiency

 Get Started with SAP Mobile Cards  
Extension Suite - Digital Experience

 Request Product Details with an Integration Scenario  
Integration Suite

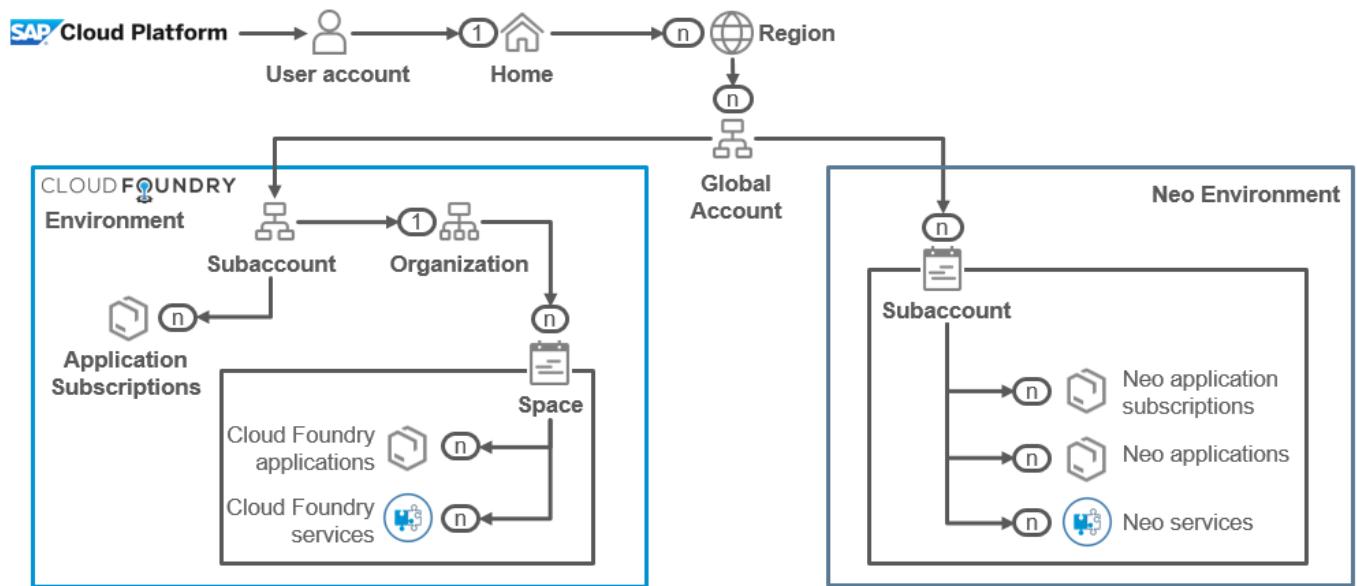
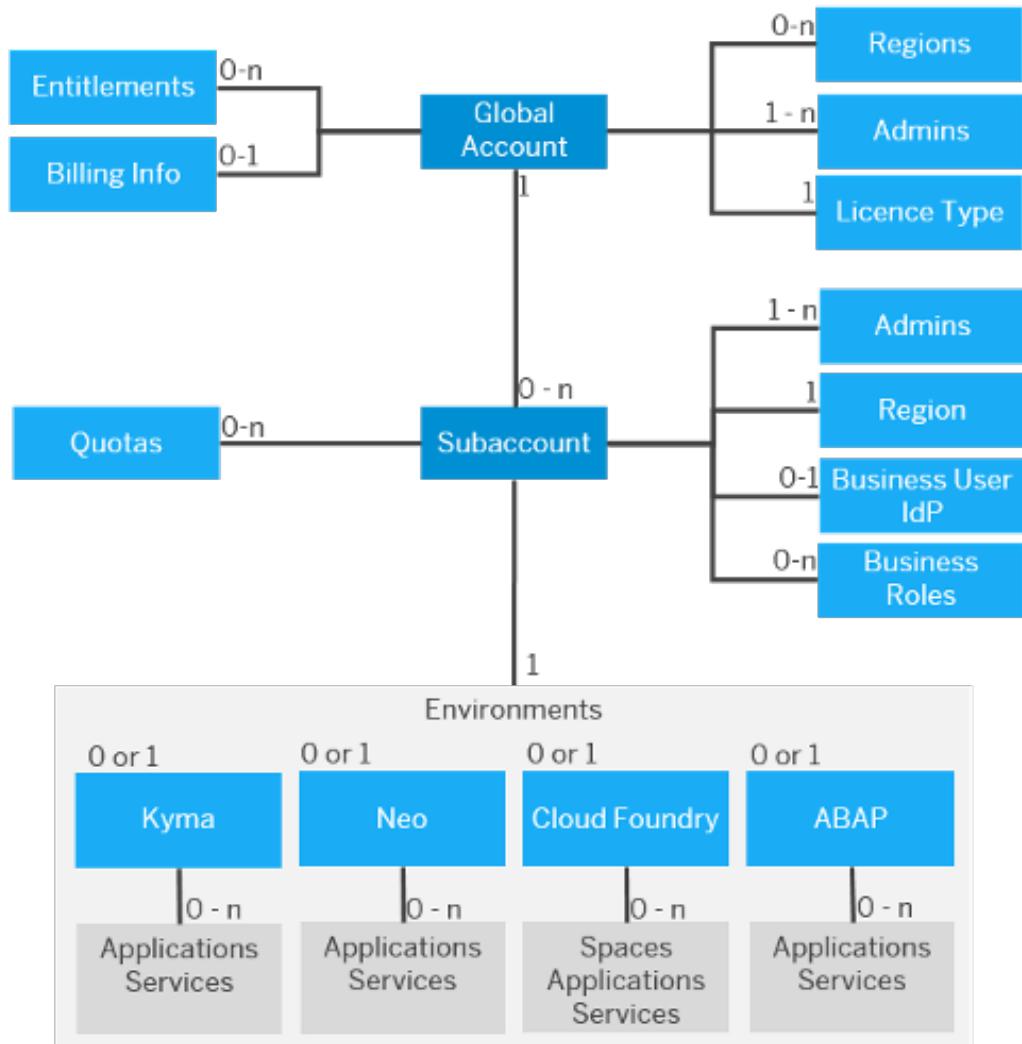
 Develop a business application using SAP Cloud Application Programming Model (CAP)





#### 5. Global Account는 Subaccount, 구성원(members), 권한(entitlements) 및 할당량(quotas)을 관리하는 데 사용됩니다.

Global Account 별로 플랫폼 리소스를 사용할 수 있는 권한(entitlements) 및 할당량(quotas)을 받은 다음 실제 사용을 위해 권한(entitlements) 및 할당량(quotas)을 Subaccount에 배포합니다.



6. SAP BTP Trial Global Account 화면입니다. 이 화면에서 Global Account의 설정이 가능합니다.
7. Subaccount 목록에서 방금 전 생성된 trial을 선택합니다.

The screenshot shows the SAP BTP Cockpit interface. On the left, there's a sidebar with links like Account Explorer, Resource Providers, Boosters, System Landscape, Entitlements, Usage Analytics, Help and Support, Useful Links, and Legal Information. The main area is titled "Global Account: Ob3ef4e2trial - Account Explorer". It shows "All: 0 directories, 1 subaccounts | Subdomain: Ob3ef4e2trial-ga". There's a search bar and a dropdown for "All Regions". Below, it says "Directories and Subaccounts" and "Subaccounts (1)". A subaccount named "trial" is listed, with details: Provider: Amazon Web Services (AWS), Region: US East (VA), and Environment: Multi-Environment. A red box highlights this subaccount entry.

8. SAP BTP Trial Subaccount 화면입니다. 이 화면에서 Subaccount의 설정이 가능합니다.
9. Overview 페이지에서 Subaccount의 기본 정보들을 확인할 수 있습니다.

### 3. Subaccount

The screenshot shows the SAP BTP Cockpit interface. The sidebar includes Overview, Services, Cloud Foundry, HTML5 Applications, Connectivity, Security, Entitlements, and Usage Analytics. The main area is titled "Subaccount: trial - Overview". It has tabs for General, Cloud Foundry Environment, Kyma Environment, and Entitlements. The General tab is selected, showing metrics: 79 Entitlements and 2 Instances and Subscriptions. A red box highlights the "General" tab and its content, which includes Subdomain: Ob3ef4e2trial, Tenant ID: 30e10e67-1755-438e-9fa8-addc70bf123d, Subaccount ID: 30e10e67-1755-438e-9fa8-addc70bf123d, Created By: (empty), Created On: 14 Nov 2022, 14:59:58 (GMT+09:00), and Modified On: 14 Nov 2022, 15:00:18 (GMT+09:00). Below this, the Cloud Foundry Environment tab is shown, with API Endpoint: https://api.cf.us10-001.hana.ondemand.com, Org Name: Ob3ef4e2trial, and Org ID: ea71b2b4-bd9c-4154-b0c0-20f0d4a6b2e1. A red box highlights this section. To the right, there's a "Spaces (1)" section with a table showing one space named "dev" with 0 applications and 0 service instances, and a "Create Space" button. At the bottom, there are links for Help and Support, Useful Links, and Legal Information.

1. Trial Global Account가 자동 생성될 경우, Booster를 통해 자동으로 Business Application Studio가 Subscription 됩니다.

2. Services > Instance and Subscription > SAP Business Application Studio 선택

## 4. SAP Business Application Studio

SAP BTP Cockpit

Overview Trial Home / 0b3ef4e2trial / trial

Services Service Marketplace Instances and Subscriptions Create

Cloud Foundry HTML5 Applications Connectivity Security Entitlements Usage Analytics

Subaccount: trial - Instances and Subscriptions All: 2

To manage the Cloud Foundry user-provided service instances, navigate to Cloud Foundry - Spaces, select your space, and then from Services select Service Instances.

Search All Services All Plans All Statuses

Subscriptions (1) Instances (0) Environments (1)

Application	Plan	Created On	Changed On	Status
SAP Business Application Studio	trial	14 Nov 2022	14 Nov 2022	Subscribed

Instances (0)

Service instances created in: Cloud Foundry | Kyma/Kubernetes | Other environments

Instance	Service	Plan	Runtime Env...	Scope	Credentials	Status
No instances. Choose 'Create' to get started.						

Help and Support Useful Links Legal Information

## Explore the SAP Business Application Studio

This site is governed by the [SAP Business Application Studio Trial Privacy Statement](#).

Do not show this message again

OK

1. Create Dev Space 선택

My Dev Spaces Watch Demo Tutorials Blogs Community Documentation Privacy

Welcome to SAP Business Application Studio

Now you can efficiently develop business applications for the Intelligent Enterprise with a powerful and modern development environment.

At the heart of SAP Business Application Studio are the dev spaces. A dev space is a pre-configured private environment (your own "virtual machine" on the cloud) where you can develop, build, test, and run using pre-installed runtimes and tools. You can create a dev space for each of your development scenarios.

**Create Dev Space**

## 2. Additional SAP Extensions에서 아래의 목록을 선택합니다.

- CAP Tools
- HTML5 Application Template
- Launchpad Module
- Basic UI5 Template
- SAP Business Application Studio Extension Development

## 3. Space의 이름을 입력하고 Create Dev Space 선택

SAP Business Application Studio Privacy

**Create a New Dev Space**

dev ✓

What kind of application do you want to create?

SAP Fiori

Low-Code-Based Full-Stack Cloud Application

Full Stack Cloud Application

SAP HANA Native Application

SAP Mobile Application

**SAP Fiori Dev Space**  
Develop, test, build, and deploy SAP Fiori freestyle or SAP Fiori elements applications to SAP Business Technology Platform. This dev space contains a comprehensive set of tools, such as best practice templates, code assist, code validation, service modeling, and application modeling and preview.

**SAP Predefined Extensions**  
The following extensions are enabled by default.

- SAPUI5 Adaptation Project  
Allows to extend SAPUI5 applications using Adaptation project and Visual Editor
- Basic Tools  
Allows you to optimize your web development workflow. The extension includes capabilities suc... more
- Fiori Freestyle Tools  
Allows you to optimize your Fiori-based development. This extension provides Fiori...
- HTML5 Runner  
Allows you to locally run HTML5 applications. Includes the HTML5 application runner and run configurations.
- MTA Tools

**Additional SAP Extensions**  
Select additional extensions to enhance your space.

- CDS Graphical Modeler  
Allows you to design SAP core data services models in SAP cloud business application... more
- CAP Tools  
Allows you to develop CAP applications using the CDS command-line and tools. Includes... more
- Chromium Browser Tools  
Allows you to use Chromium tools.
- SAP HANA Calculation View Editor  
Allows you to edit and manage SAP HANA calculation views. The extension includes th... more
- SAP HANA Performance Tools

**Create Dev Space**

4. 이제 BAS의 Space가 생성되기 시작하고, RUNNING 상태가 되면 Space Name을 선택

The screenshot shows the SAP Business Application Studio interface. At the top, there's a navigation bar with the SAP logo, 'SAP Business Application Studio', and links for 'Privacy', 'Help', and 'Logout'. Below the header, the title 'Dev Spaces' is displayed. A descriptive text block says: 'Create and manage your development environment according to the type of applications you want to develop. You can add extensions and tools to further enhance your development options.' To the right of this text is a blue button labeled 'Create Dev Space'. Below the text, there's a warning message: '⚠ You're using a trial version. Any dev space that hasn't been running for 30 days will be deleted. See the full list of restrictions.' On the left, there's a thumbnail for 'SAP Fiori' with the word 'dev' highlighted by a red box and a red arrow pointing to it. To the right of the thumbnail, the status 'RUNNING' is shown in green. Further details include 'Created On 2022.11.20. 오후 8:09', 'ID ws-nbrcw', 'Disk Usage 596 KB / 3.8 GB', and icons for download, delete, and edit.

## 5. Create Application

SAPUI5 Application을 생성하고 배포합니다.

### MTA(Multitarget Applications)

논리적으로 동일한 Life-Cycle을 공유하는 서로 다른 기술로 생성된 여러 모듈/리소스로 구성된 단일 응용 프로그램입니다.

개발자는 MTA 모듈, MTA 리소스 및 이들 간의 상호 종속성을 포함하는 MTA 모델을 사용하여 Cloud Foundry 환경으로 배포를 검증, 자동화합니다.

# MTA

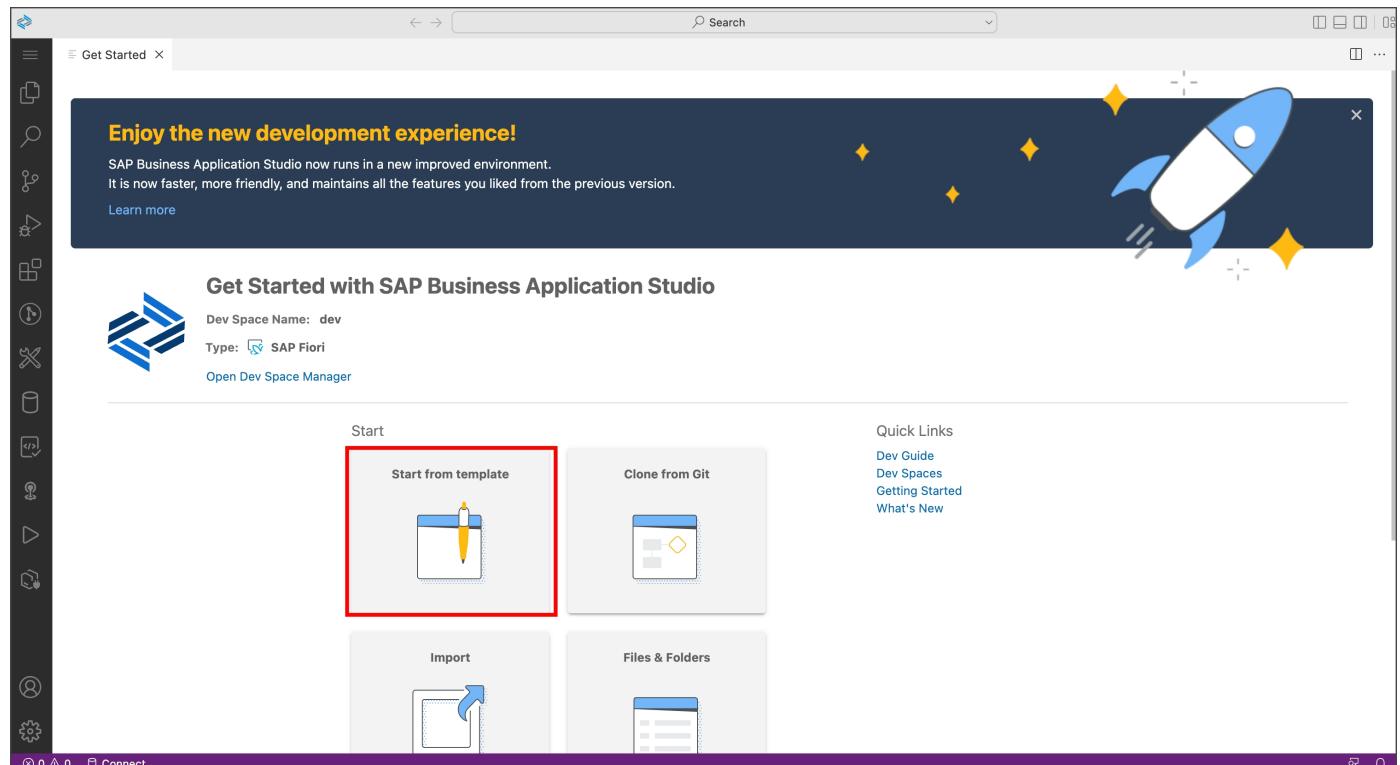
Approuter

SAPUI5 Application

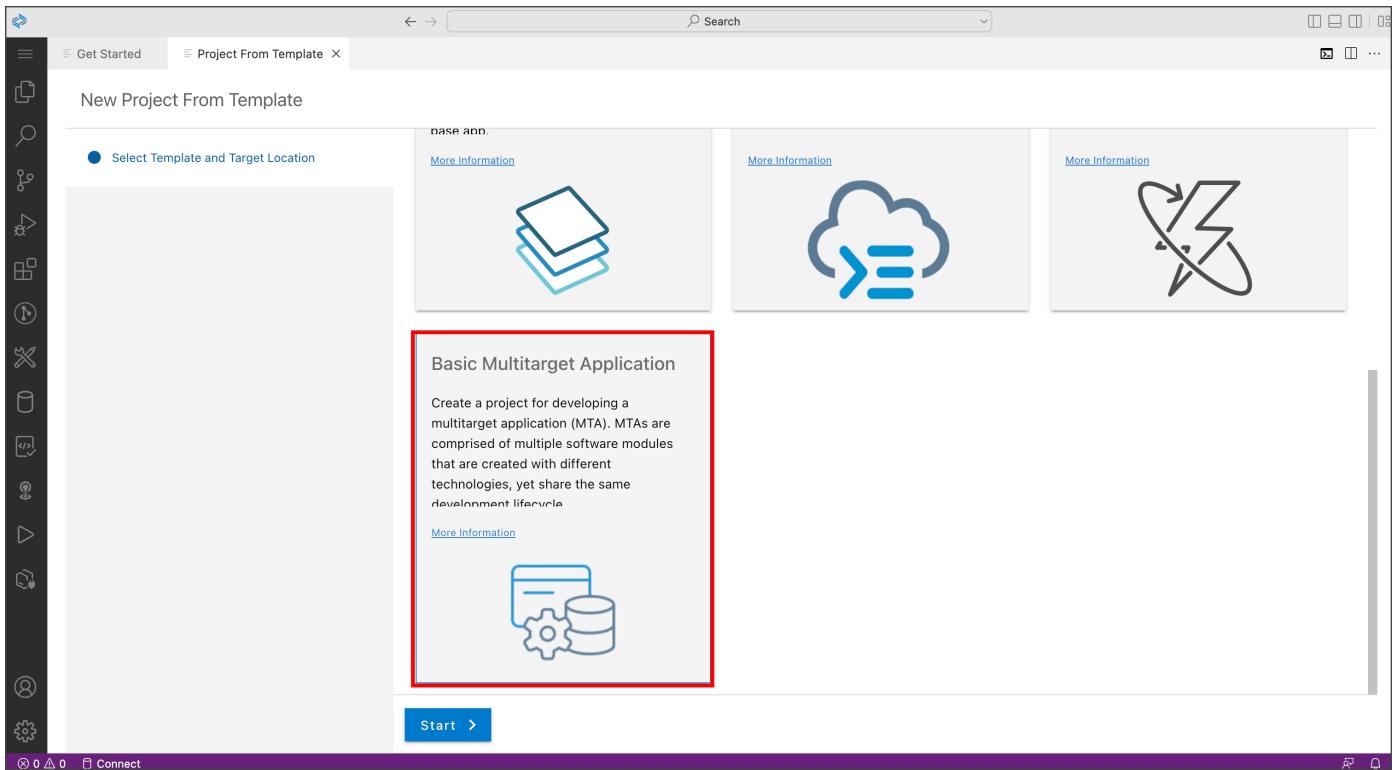
## 1) Create MTA Application

가장 최상단인 MTA Application을 먼저 생성합니다.

### 1. Start from template 선택

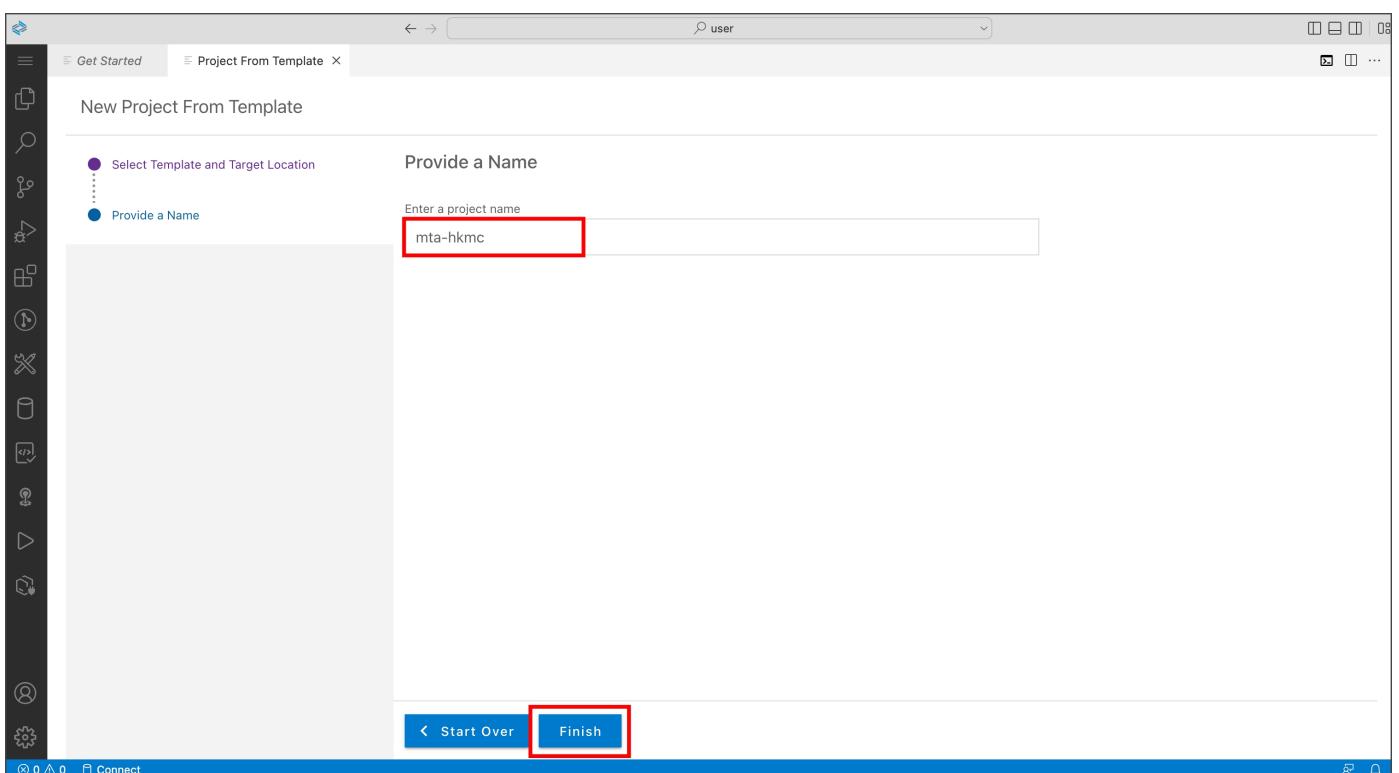


### 2. Basic Multitenant Application 선택 > Start 선택



### 3. MTA Project명 입력 > Finish 선택

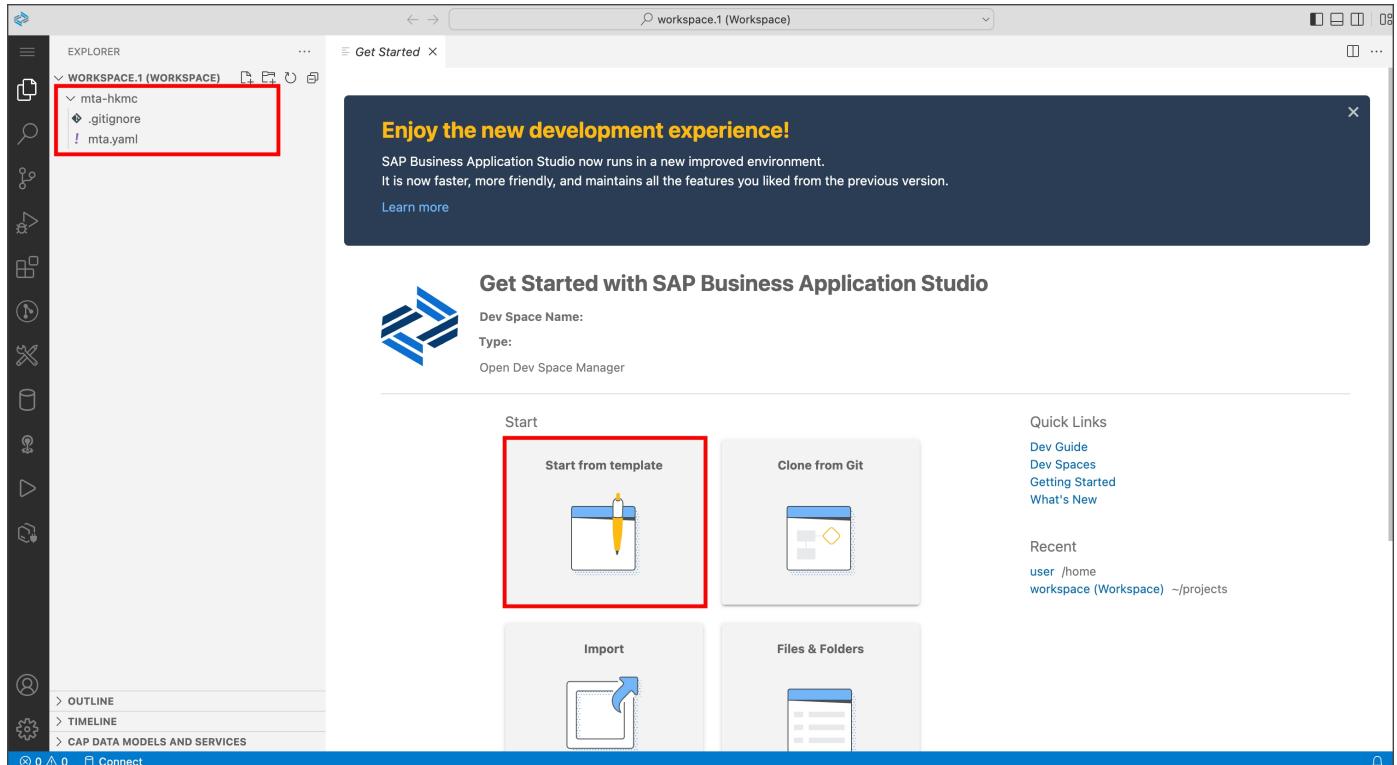
Property	Value
project name	mta-hkmc



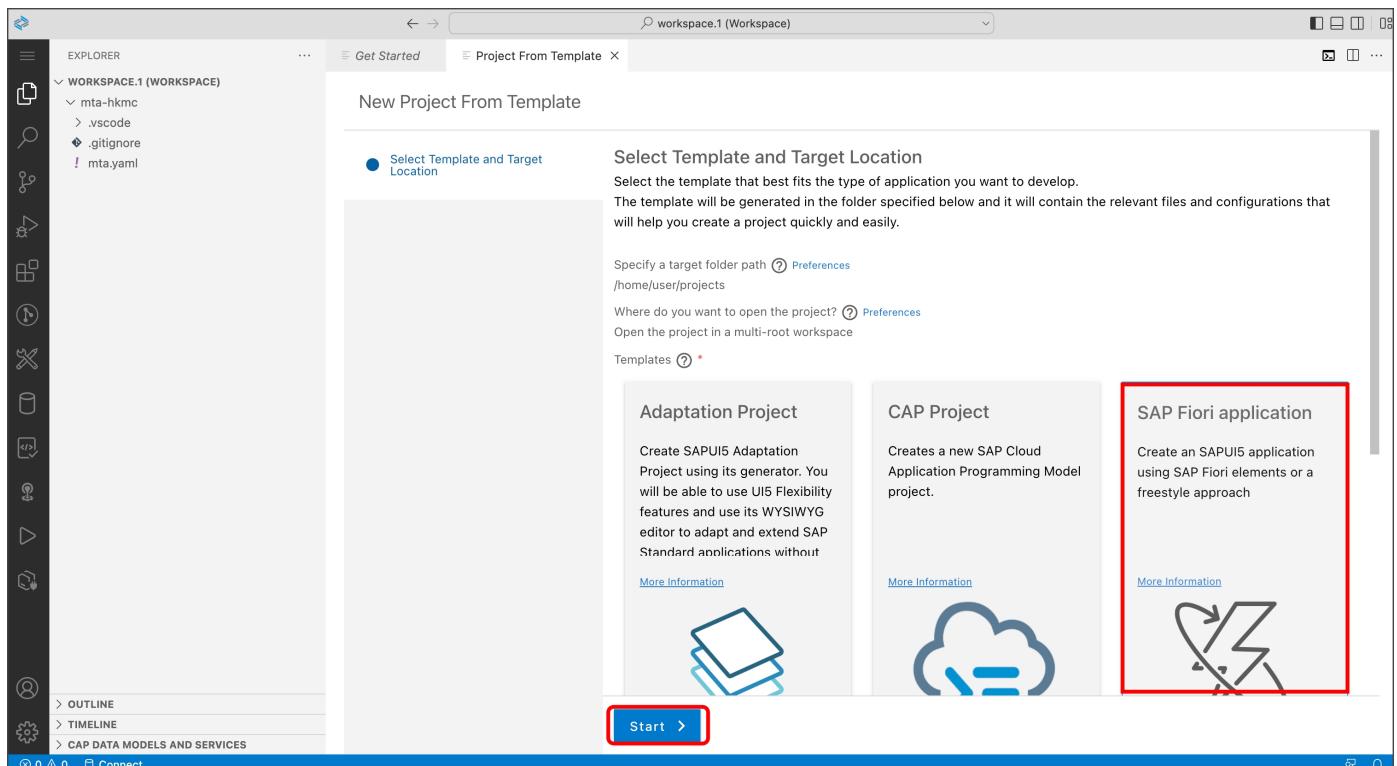
## 2) Create SAPUI5 Application

MTA Application의 SAPUI5 Application을 생성합니다.

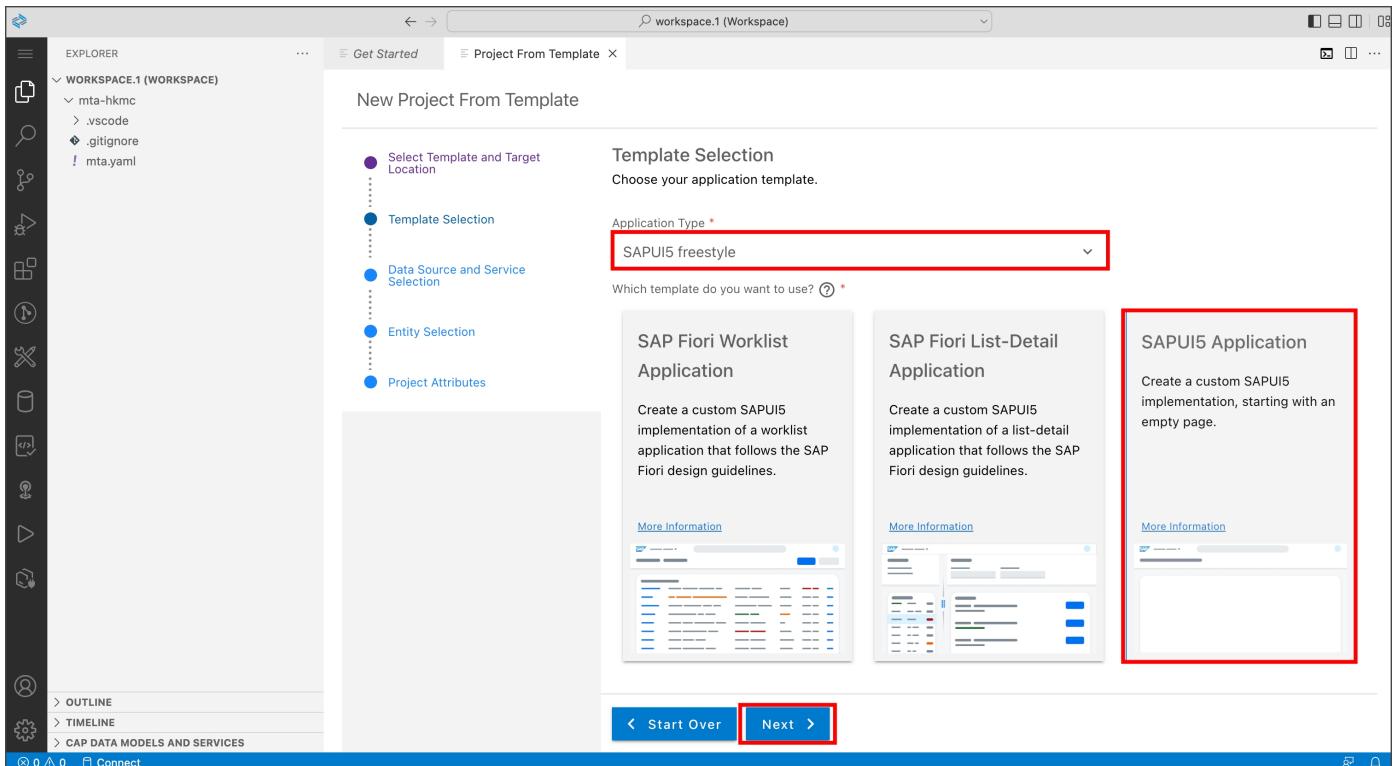
### 1. Start from template 선택



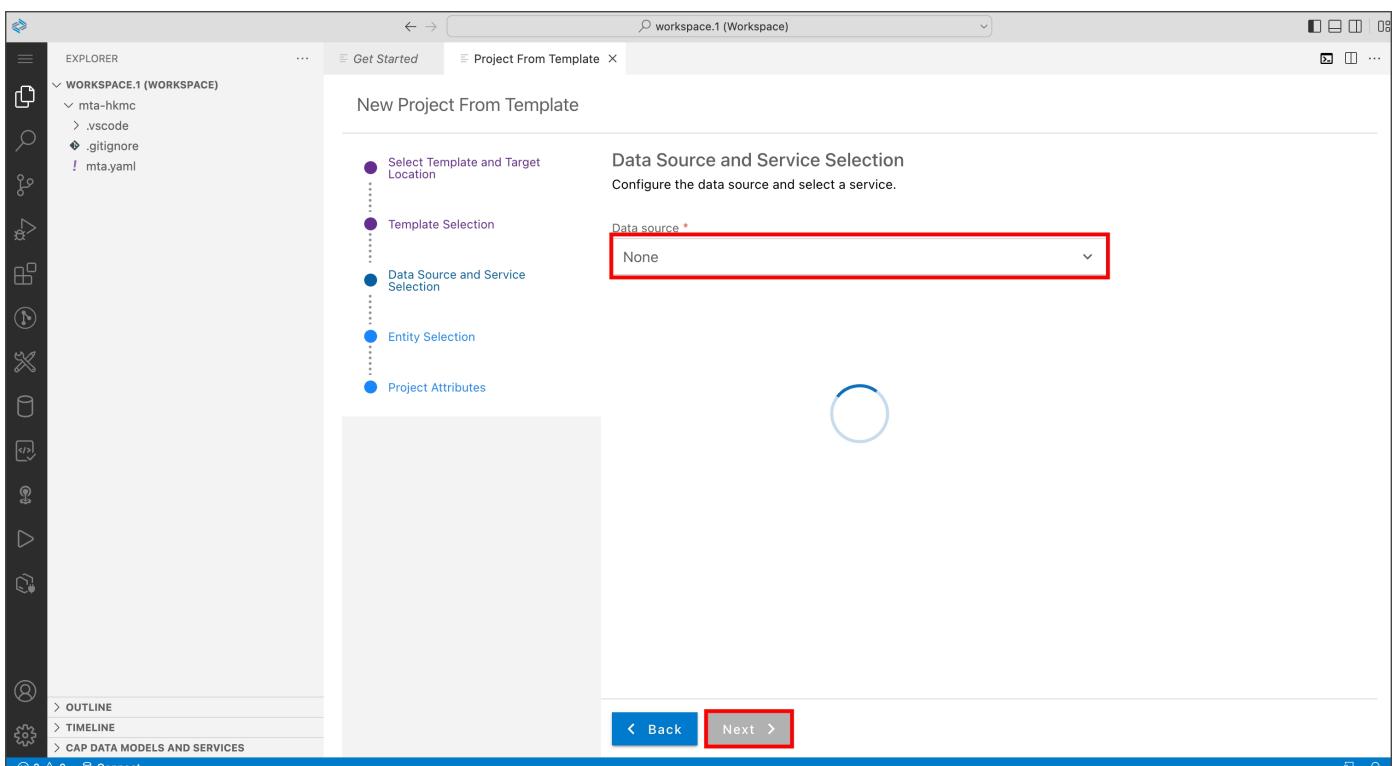
### 2. SAP Fiori Application 선택 > Start 선택



### 3. Application Type: SAPUI5 freestyle 선택 > SAPUI5 Application > Next 선택

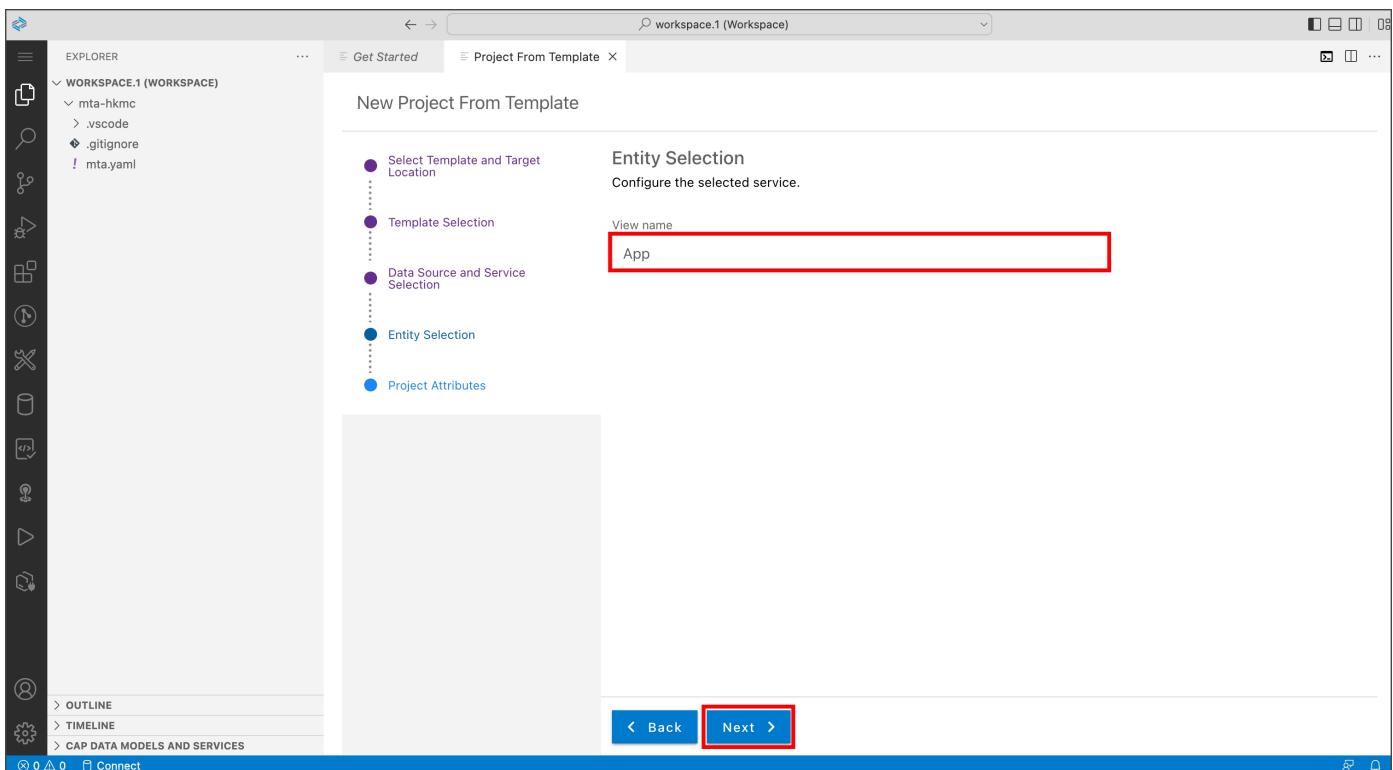


### 4. Data Source: None 선택 > SAPUI5 Application > Next 선택



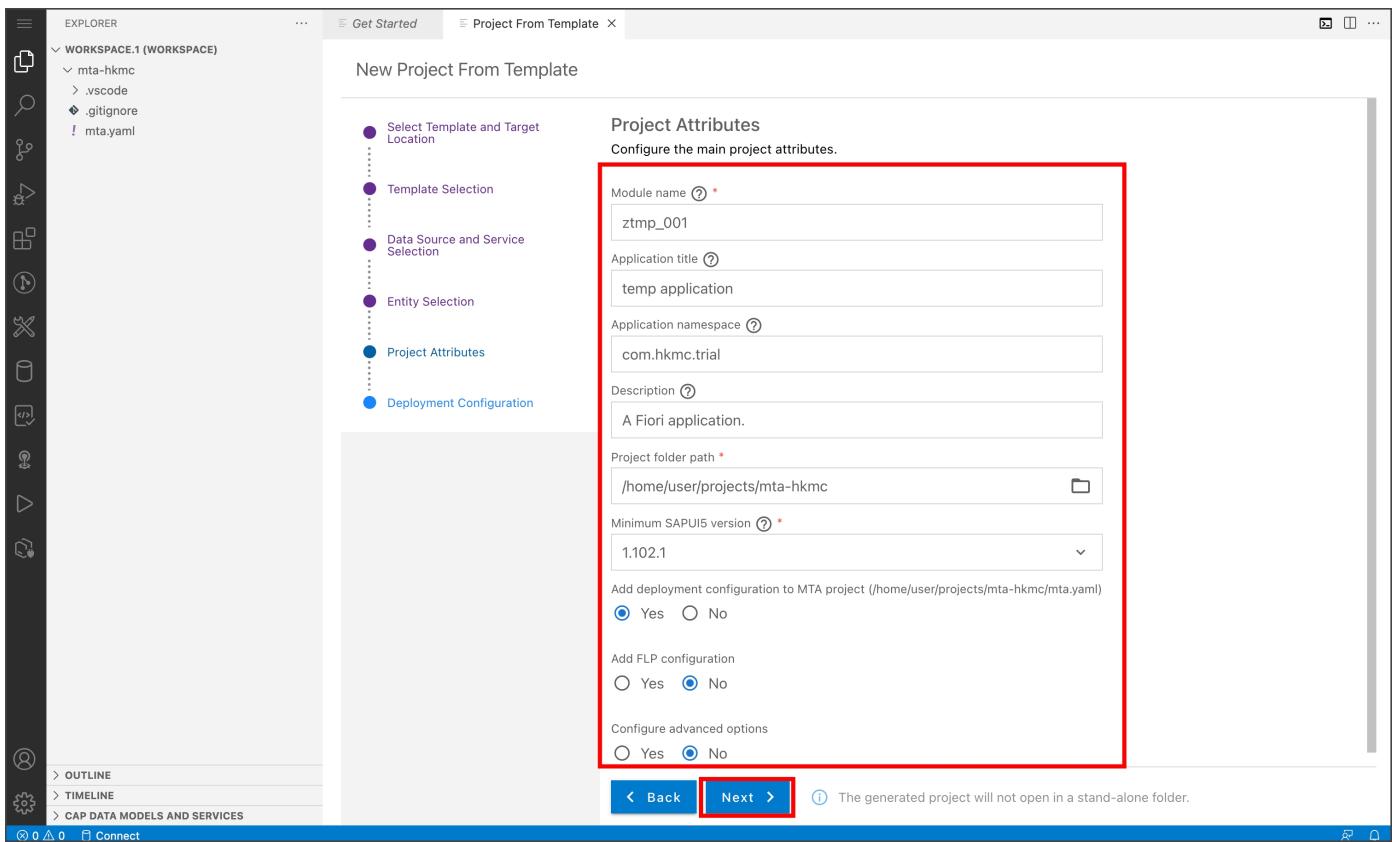
### 5. View Name: App 입력 > Next 선택

Property	Value
View name	App



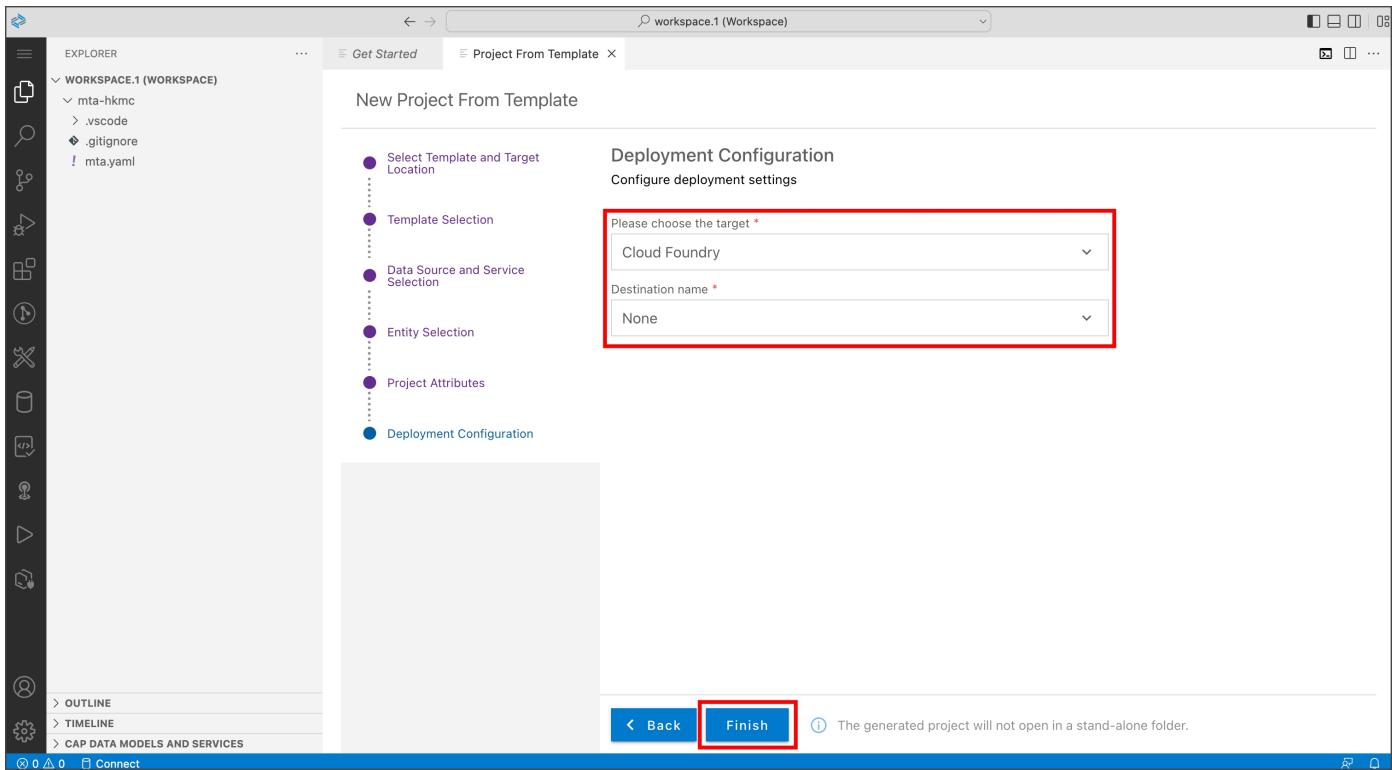
6. 아래와 같이 프로젝트 정보를 입력 > **Next** 선택

Property	Value
Module name	ztmp_001
Application namespace	com.hkmc.trial



7. 아래와 같이 프로젝트 정보를 입력 > **Next** 선택

Property	Value
target	Cloud Foundry
Destination name	None



### 3) Create Approuter

MTA Application의 SAP Approuter를 생성합니다.

#### SAP Approuter

Application이 여러 개의 서로 다른 앱(マイクロサービス)으로 구성된 경우 Application Router는 해당 Application에 대한 단일 진입 점(Single entry point)을 제공하는 데 Nodejs 기반의 라이브러리입니다.

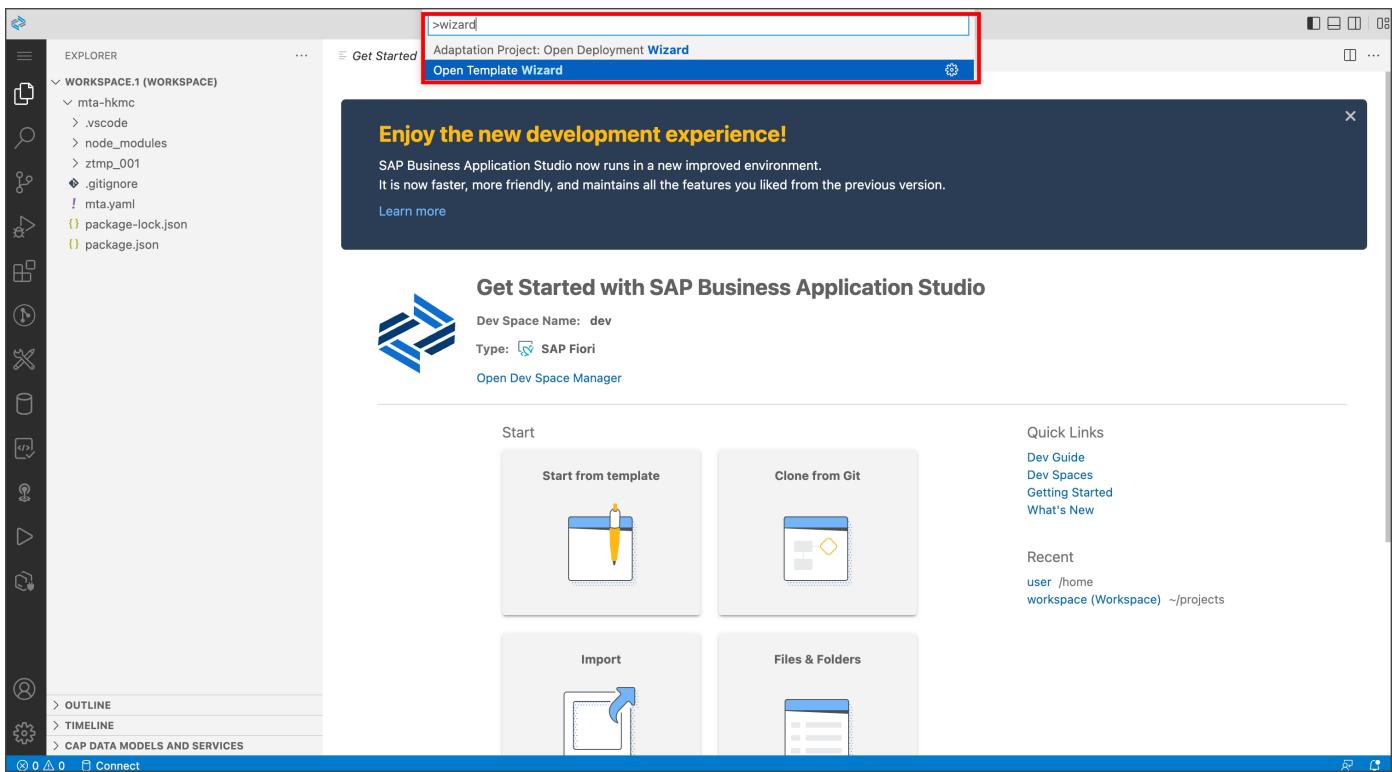
#### SAP Approuter를 사용할 수 있는 환경

- SAP CF – Cloud Foundry
- SAP XSA – XS Advanced (On Premise)
- Local environment

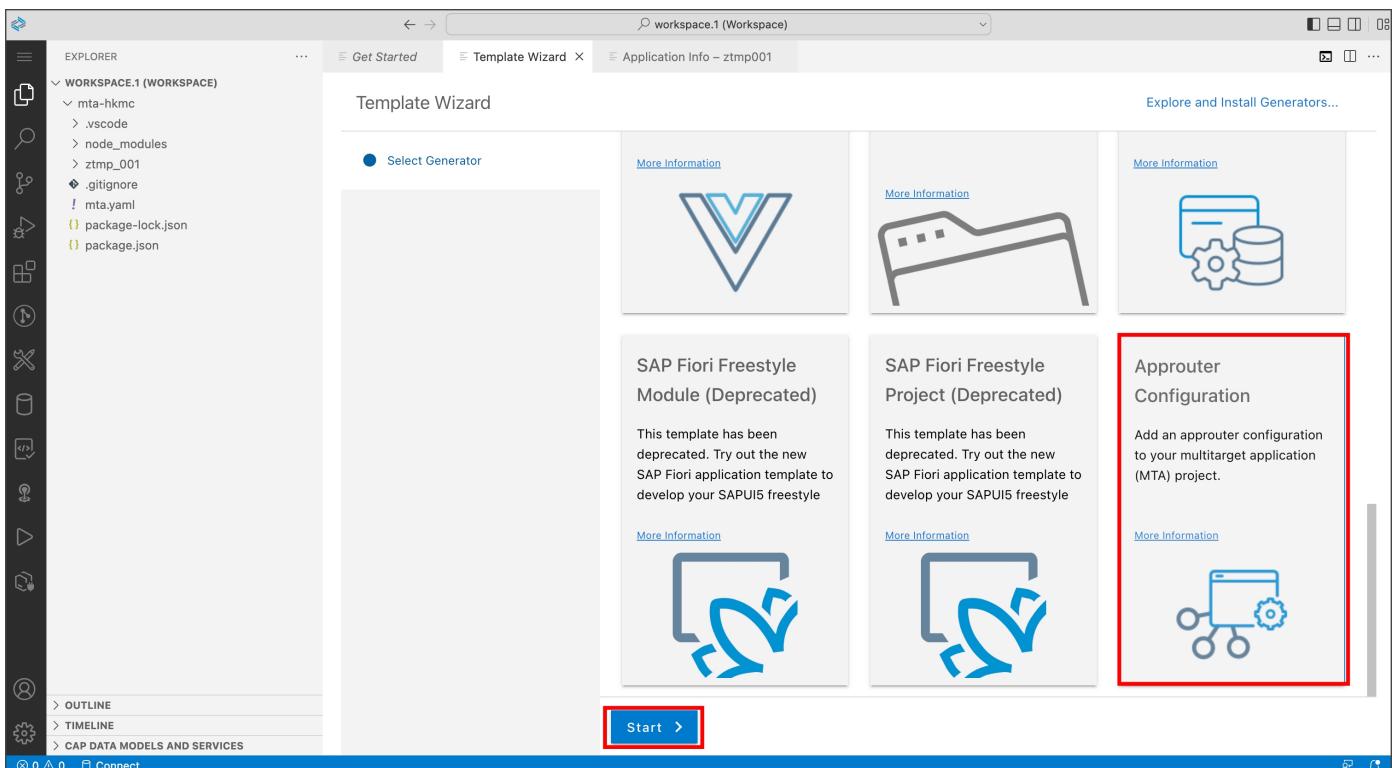
#### 주요기능

- Dispatching of requests to other microservices
- Authentication
- Authorization check
- Complete integration with Destination service
- Complete integration with HTML5 Application repository
- Complete integration with Business Services

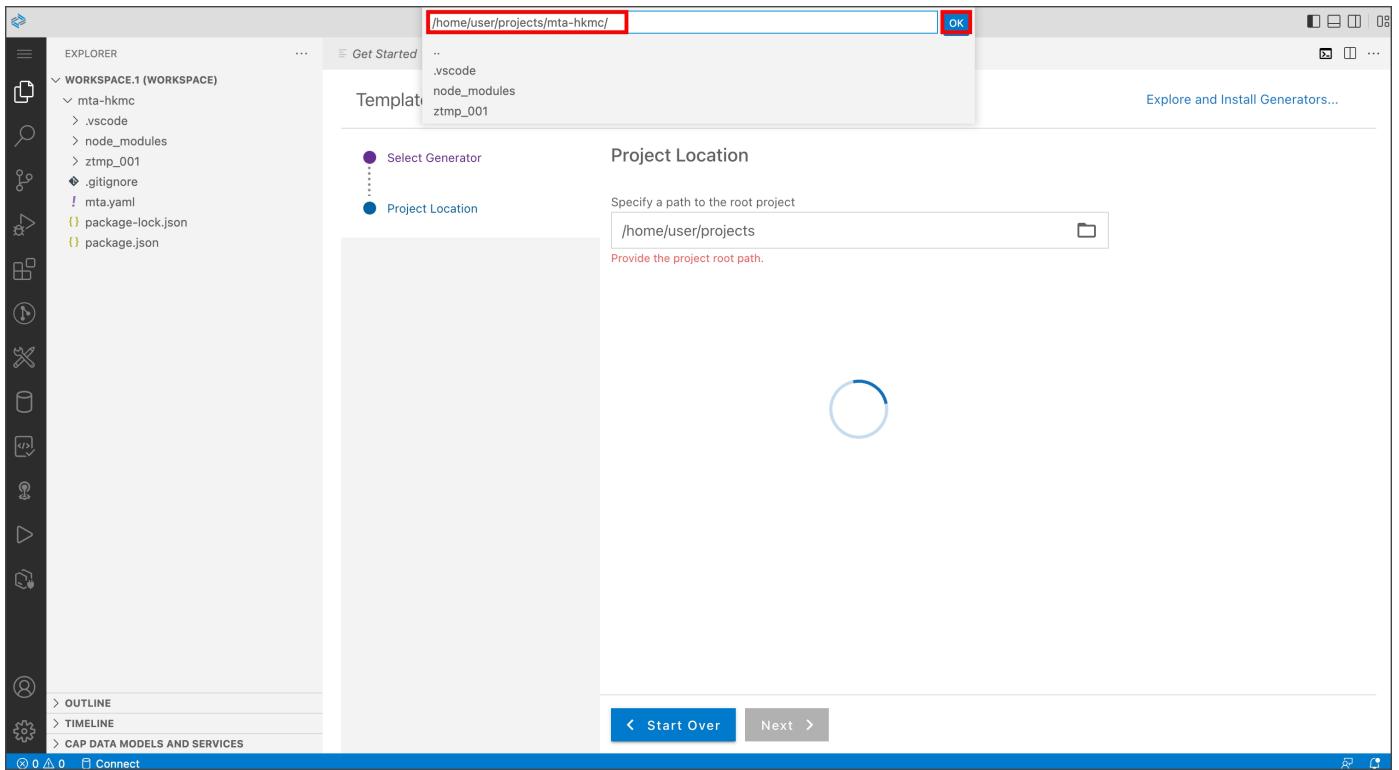
1. Show all commands(Ctrl + Shift + P) > Open Template Wizard 선택



## 2. Approuter Configuration 선택 > Next 선택

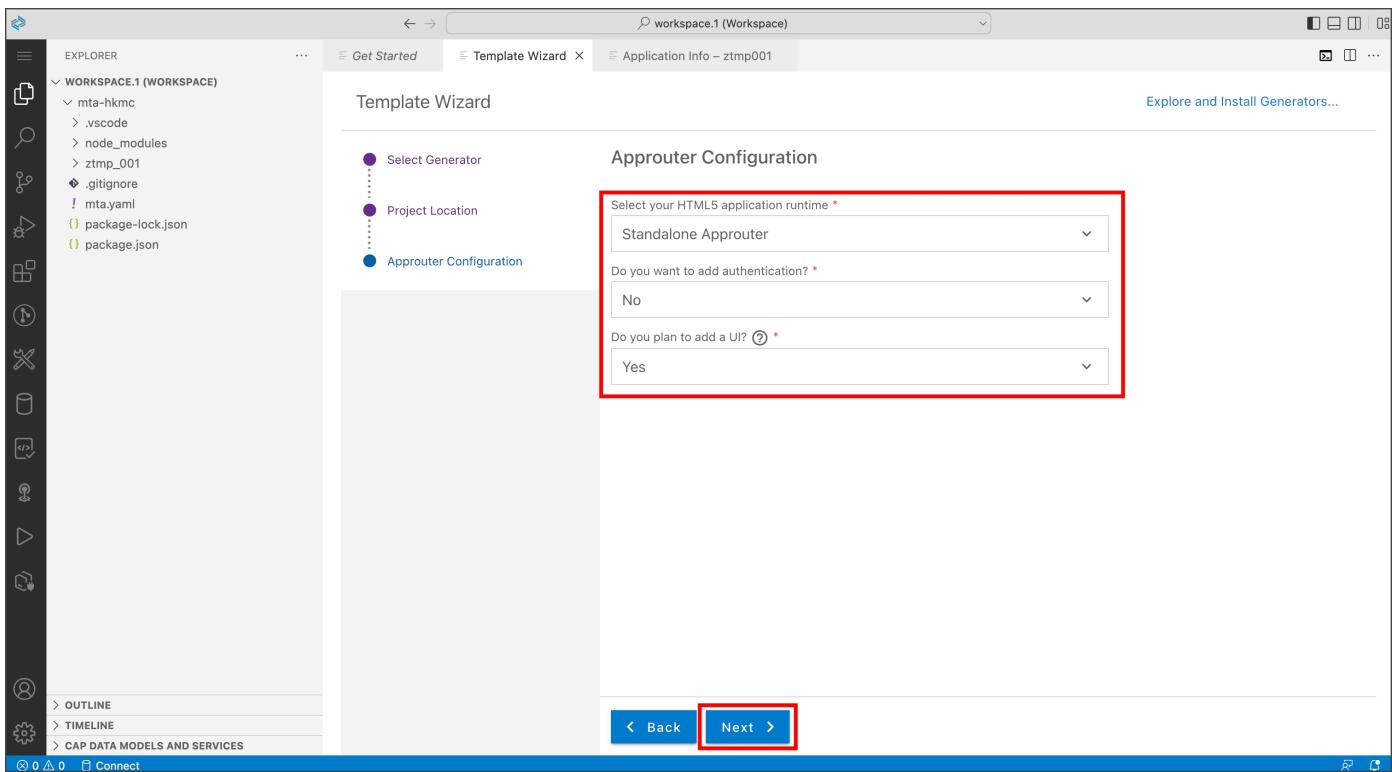


## 3. Prejoect Location을 mta-hkmc 프로젝트 경로로 선택 > Next 선택

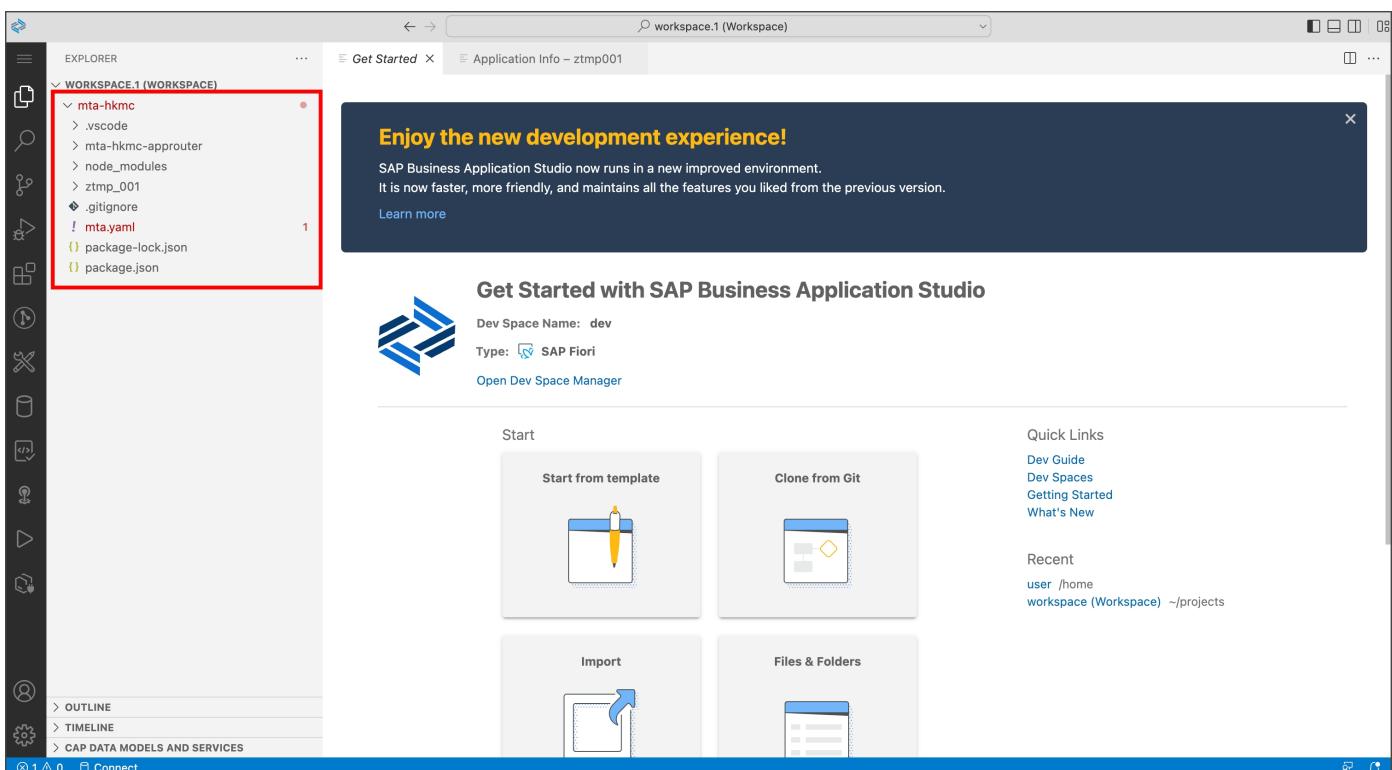


4. 아래와 같이 프로젝트 정보를 설정 > **Next** 선택

Property	Value
Application Runtime	Standalone Approuter
authentication	No
add UI	Yes



5. 최종적인 프로젝트 구조는 아래와 같습니다.



## 6. Application Configuration

앱을 실행하기 전에 우선적으로 설정해줘야하는 내역을 설명합니다.

# 1) SAPUI5 Configuration

- **xs-app.json**

어떤 요청을 어떤 목적지로 전달해야 하는지 결정하는 규칙을 `routes` 라고 합니다. routing을 정의하려면 xs-app.json 파일을 구성해야 합니다.

SAPUI5 Application의 xs-app.json 파일을 열고 아래와 같이 수정합니다.

경로: /mta-hkmc/ztmp\_001/**xs-app.json**

```
{  
    "welcomeFile": "/index.html",  
    "authenticationMethod": "none",  
    "routes": [  
        {  
            "source": "^(.*)$",  
            "target": "$1",  
            "service": "html5-apps-repo-rt",  
            "authenticationType": "xsuaa"  
        }  
    ]  
}
```

- **index.html**

SAPUI5 Application을 실행하는 파일입니다.

SAPUI5 Application의 index.html 파일을 열고 아래와 같이 수정합니다.

경로: /mta-hkmc/ztmp\_001/webapp/**index.html**

Property	Value
src	<a href="https://sapui5.hana.ondemand.com/resources/sap-ui-core.js">https://sapui5.hana.ondemand.com/resources/sap-ui-core.js</a>
data-sap-ui-frameOptions	allow

```
<!DOCTYPE html>  
<html lang="en">  
  <head>  
    <meta charset="UTF-8">  
    <meta name="viewport" content="width=device-width, initial-scale=1.0">  
    <meta http-equiv="X-UA-Compatible" content="IE=edge">  
    <title>temp application</title>
```

```

<style>
    html, body, body > div, #container, #container-uiarea {
        height: 100%;
    }
</style>
<script
    id="sap-ui-bootstrap"
    src="https://sapui5.hana.ondemand.com/resources/sap-ui-core.js"
    data-sap-ui-theme="sap_horizon"
    data-sap-ui-resourceroots='{
        "com.hkmc.trial.ztmp001": "./"
    }'
    data-sap-ui-compatVersion="edge"
    data-sap-ui-async="true"
    data-sap-ui-frameOptions="allow"
></script>
<script id="locate-reuse-libs" src="./utils/locate-reuse-libs.js"
    data-sap-ui-manifest-uri="./manifest.json"
    data-sap-ui-componentName="com.hkmc.trial.ztmp001">
</script>
</head>
<body class="sapUiBody sapUiSizeCompact" id="content">
    <div
        data-sap-ui-component
        data-name="com.hkmc.trial.ztmp001"
        data-id="container"
        data-settings='{"id" : "com.hkmc.trial.ztmp001"}'
        data-handle-validation="true"
    ></div>
</body>
</html>

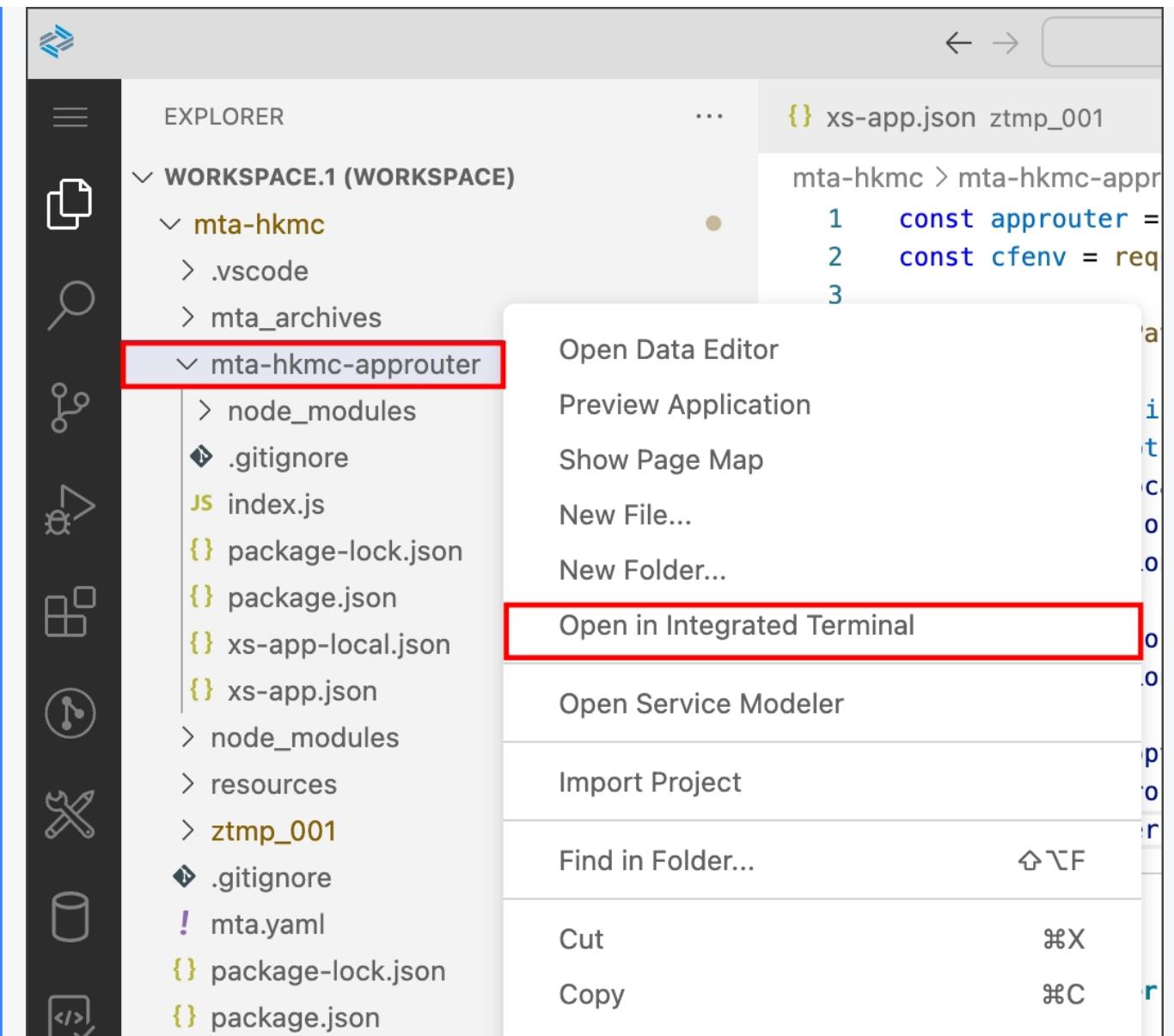
```

## 2) SAP Approuter

기본적으로 제공해주는 Default Approuter 구성이 있습니다.

하지만 Default Approuter 구성을 이용하기에는 기능적으로 한계가 있으므로, Customizing된 Approuter를 구성합니다.

[mta-hkmc/mta-hkmc-approuter/](#)



먼저 위의 경로에서 터미널(Ctrl + Shift + `)을 열고 아래의 명령어를 입력 cfenv 모듈을 설치합니다.

```
npm i cfenv
```

위의 경로에서 index.js 파일을 생성합니다.

## index.js

```
const approuter = require('@sap/approuter');
const cfenv = require('cfenv');

const getConfigPath = () => {
  try {
    const { isLocal } = cfenv.getAppEnv();
```

```

const options = { xsappConfig: null, destinations: null };

if (isLocal) {
  console.log(`실행환경: localhost`);
  options.xsappConfig = require("./xs-app-local.json");
} else {
  console.log(`실행환경: cloud foundry`);
  options.xsappConfig = require("./xs-app.json");
}

return options;
} catch (error) {
  return error;
}
};

try {
  const { xsappConfig, destinations } = getConfigPath();
  const { isLocal, ['app']: appEnv } = cfenv.getAppEnv();
  const env = isLocal ? 'localhost' : appEnv.space_name === 'prd' ? appEnv.space_name :
  appEnv.application_name.split('-').reverse()[0];
  const port = process.env.PORT || 5000;
  const ar = approuter();
  ar.start({ port: port, xsappConfig }, () => {
    console.log('start approuter');
  });
} catch (error) {
  console.log(error);
}
}

```

다음으로 package.json을 수정합니다.

### package.json

```
{
  "name": "approuter",
  "description": "Node.js based application router service for html5-apps",
  "dependencies": {
    "@sap/approuter": "10.5.1",
    "cfenv": "^1.2.4"
  },
  "devDependencies": {
    "@sap/html5-repo-mock": "2.1.0"
  },
  "scripts": {
    "start": "node .",
    "start-local": "node node_modules/@sap/html5-repo-mock/index.js"
  }
}
```

```
    }  
}
```

다음으로 approuter 경로에서 두개의 파일을 생성합니다.

### xs-app.json

이 파일은 배포된 후 Cloud Foundry에서 사용되는 routes 설정 파일입니다.

```
{  
  "welcomeFile": "comhkmctrialztmp001/index.html",  
  "authenticationMethod": "none",  
  "routes": [  
    {  
      "source": "^/comhkmctrialztmp001/(.*)$",  
      "target": "$1",  
      "localDir": "../ztmp_001/webapp"  
    }  
  ]  
}
```

### xs-app-local.json

이 파일은 로컬 환경에서에서 사용되는 routes 설정 파일입니다.

```
{  
  "welcomeFile": "comhkmctrialztmp001/index.html",  
  "authenticationMethod": "none",  
  "routes": []  
}
```

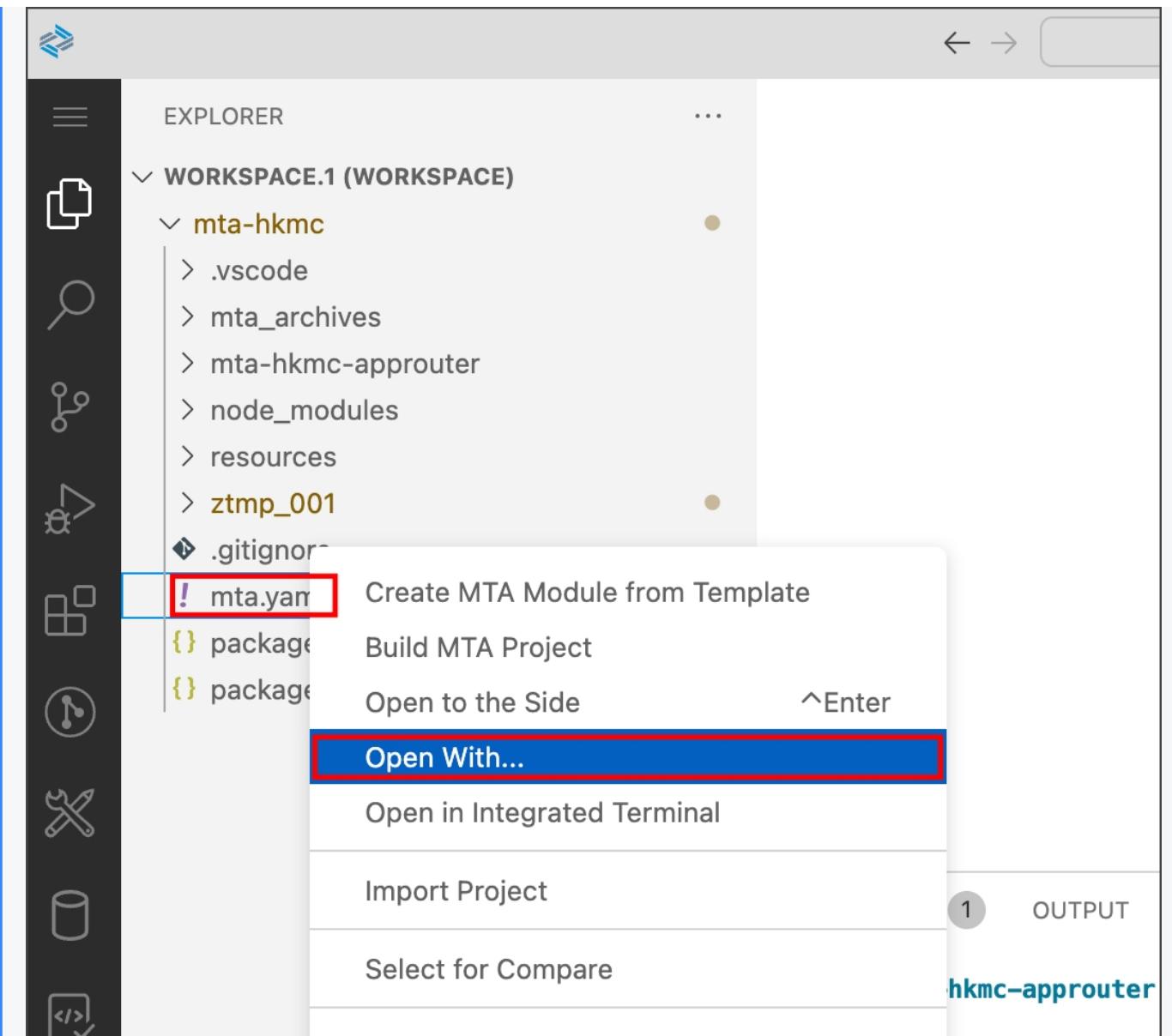
## 참고

welcomeFile은 Application이 최초 실행시 route 경로입니다. local환경에서는 localDir에서 직접 접근을 하며, 배포 환경인 Cloud foundry에서는 html5 repository runtime 서비스를 사용하게 됩니다. welcomeFile namespace는 SAPUI5의 Application의 `app id` 를 사용합니다. 해당 내용은 SAPUI5 Application의 `manifest.json` 에서 확인할 수 있습니다.

```
{  
...  
"sap.app": {  
  "id": "com.hkmc.trial.ztmp001",  
  ...  
}  
...  
}
```

## 3) MTA Application

mta.yaml은 배포 자동화와 관련된 내용을 정의합니다.



mta.yaml > Open With... > Text Editor

아래와 같이 mta.yaml을 작성합니다.

### mta.yaml

```
_schema-version: "3.2"
ID: mta-hkmc
version: 0.0.1
modules:
- name: mta-hkmc-app-content
  type: com.sap.application.content
  path: .
  requires:
- name: mta-hkmc-repo-host
parameters:
```

```
  content-target: true
build-parameters:
  build-result: resources
  requires:
    - artifacts:
        - comhkmctrialztmp001.zip
        name: comhkmctrialztmp001
        target-path: resources/
  - name: comhkmctrialztmp001
    type: html5
    path: ztmp_001
    build-parameters:
      build-result: dist
      builder: custom
      commands:
        - npm install
        - npm run build:cf
      supported-platforms: []
  - name: mta-hkmc-approuter
    type: approuter.nodejs
    path: mta-hkmc-approuter
    requires:
      - name: mta-hkmc_html_repo_runtime
    parameters:
      disk-quota: 256M
      memory: 256M
resources:
  - name: mta-hkmc-repo-host
    type: org.cloudfoundry.managed-service
    parameters:
      service: html5-apps-repo
      service-plan: app-host
  - name: mta-hkmc_html_repo_runtime
    type: org.cloudfoundry.managed-service
    parameters:
      service: html5-apps-repo
      service-plan: app-runtime
parameters:
  deploy_mode: html5-repo
```

## 7. Run Application

SAP Approuter 경로

/mta-hkmc/mta-hkmc-approuter/

해당 경로에서 터미널(Ctrl + Shift + `)을 열고 아래의 명령어를 통해 Application을 실행합니다.

The screenshot shows the SAP Studio IDE interface. On the left, the Explorer view displays the project structure under 'WORKSPACE (WORKSPACE)'. The 'package.json' file is selected, showing the following content:

```
1  {
2   "name": "approuter",
3   "description": "Node.js based application router service for html5-apps",
4   "dependencies": {
5     "esap/approuter": "10.5.1",
6     "cfenv": "1.2.4"
7   },
8   "devDependencies": {
9     "@sap/html5-repo-mock": "2.1.0"
10 },
11  "scripts": {
12    "start": "node .",
13    "start-local": "node node_modules/@sap/html5-repo-mock/index.js"
14  }
15 }
```

In the center, the terminal window shows the command 'user: mta-hkmc-approuter \$ npm start' being run. The output shows logs from the approuter service starting up, including log level switching and configuration details. A message at the end indicates the application is listening on port 5000. A red box highlights the 'Open in a New Tab' button in the bottom right corner of the terminal panel.

오른쪽 아래의 **Open in a New Tab**을 통해 실행된 Application 미리보기가 가능합니다.

만약 위와 같이 오른쪽 아래에 탭이 나타나지 않을 경우, **Show all commands(Ctrl + Shift + P) > Ports: Preview**를 통해 실행된 Application을 미리보기 할 수 있습니다.

## 8. Deploy Cloud Foundry

mta.yaml에 설정된 배포 정의를 통해 Cloud Foundry에 배포를 자동으로 수행합니다.

## 1) Login Cloud Foundry

배포(deploy)를 하기 위해 배포 Target 으로 로그인합니다.

/mta-hkmc

해당 경로에서 터미널(Ctrl + Shit + `)을 열고 아래의 cf cli 명령어를 통해 로그인을 진행합니다.

```
cf l -a https://api.cf.us10-001.hana.ondemand.com
```



```
PROBLEMS 1 OUTPUT DEBUG CONSOLE TERMINAL SQL CONSOLE
user: mta-hkmc $ cf l -a https://api.cf.us10-001.hana.ondemand.com
API endpoint: https://api.cf.us10-001.hana.ondemand.com

Email: weaver7@istn.co.kr
Password:

Authenticating...
OK

Targeted org 0b3ef4e2trial.
Targeted space dev.

API endpoint: https://api.cf.us10-001.hana.ondemand.com
API version: 3.126.0
user: weaver7@istn.co.kr
org: 0b3ef4e2trial
space: dev
user: mta-hkmc $
```

## 2) Build MTA

MTA를 배포하기 위해서는 빌드를 우선적으로 수행해야 합니다. Build를 진행합니다.

/mta-hkmc

해당 경로에서 터미널(Ctrl + Shit + `)을 열고 아래의 명령어를 통해 빌드를 진행합니다.

빌드가 완료되면 archive 폴더에 필드된 mtar 파일이 생성되고, 터미널에 해당 파일의 경로가 출력됩니다. 해당 경로를 더블클릭해 복사(Ctrl+C)합니다.

```
mbt build
```

PROBLEMS 1 OUTPUT DEBUG CONSOLE TERMINAL SQL CONSOLE

bash + ×

```

added 5 packages in 905ms

2 packages are looking for funding
  run `npm fund` for details
[2022-11-20 15:28:28] INFO the build results of the "mta-hkmc-approuter" module will be packaged and saved in the "/home/user/projects/mta-hkmc/.mta-hkmc_mta_build_tmp/mta-hkmc-approuter" folder
[2022-11-20 15:28:30] INFO finished building the "mta-hkmc-approuter" module
[2022-11-20 15:28:30] INFO building the "mta-hkmc-app-content" module...
[2022-11-20 15:28:30] INFO copying files matching the [comhkmctrialztmp001.zip,...] patterns from the "/home/user/projects/mta-hkmc/ztmp_001/dist" folder to the "/home/user/projects/mta-hkmc/resources" folder
[2022-11-20 15:28:30] INFO the "/home/user/projects/mta-hkmc/resources" folder has been created
[2022-11-20 15:28:30] INFO copying the "comhkmctrialztmp001.zip" pattern from the "/home/user/projects/mta-hkmc/ztmp_001/dist" folder to the "/home/user/projects/mta-hkmc/resources" folder
[2022-11-20 15:28:30] INFO the build results of the "mta-hkmc-app-content" module will be packaged and saved in the "/home/user/projects/mta-hkmc/.mta-hkmc_mta_build_tmp/mta-hkmc-app-content" folder
[2022-11-20 15:28:30] INFO finished building the "mta-hkmc-app-content" module
[2022-11-20 15:28:30] INFO generating the metadata...
[2022-11-20 15:28:30] INFO generating the "/home/user/projects/mta-hkmc/.mta-hkmc_mta_build_tmp/META-INF/mtad.yaml" file...
[2022-11-20 15:28:30] INFO generating the MTA archive...
[2022-11-20 15:28:30] INFO the MTA archive generated at: /home/user/projects/mta-hkmc/mta_archives/mta-hkmc_0.0.1.mtar
[2022-11-20 15:28:30] INFO cleaning temporary files...

```

**Double Click Ctrl + C**

### 3) Deploy MTA

위에서 복사한 mtar 파일의 경로를 이용해  
터미널(Ctrl + Shit + `)을 열고 아래의 명령어를 통해 빌드를 진행합니다.

```
#cf deploy <file path>
cf deploy /home/user/projects/mta-hkmc/mta_archives/mta-hkmc_0.0.1.mtar
```

PROBLEMS 1 OUTPUT DEBUG CONSOLE TERMINAL SQL CONSOLE

bash + ×

```

No deployed MTA detected - this is initial deployment of MTA with ID "mta-hkmc"
Detected new MTA version: "0.0.1"
Processing service "mta-hkmc_html_repo_runtime"...
Creating service "mta-hkmc_html_repo_runtime" from MTA resource "mta-hkmc_html_repo_runtime"...
Processing service "mta-hkmc-repo-host"...
Creating service "mta-hkmc-repo-host" from MTA resource "mta-hkmc-repo-host"...
1 of 1 done
1 of 1 done
Creating service key "mta-hkmc-app-content-mta-hkmc-repo-host-credentials" for service "mta-hkmc-repo-host"...
Uploading content module "mta-hkmc-app-content" in target service "mta-hkmc-repo-host"...
Deploying content module "mta-hkmc-app-content" in target service "mta-hkmc-repo-host"...
Creating application "mta-hkmc-approuter" from MTA module "mta-hkmc-approuter"...
Binding service instance "mta-hkmc_html_repo_runtime" to application "mta-hkmc-approuter"...
Uploading application "mta-hkmc-approuter"...
Started async upload of application "mta-hkmc-approuter"
Staging application "mta-hkmc-approuter"...
Application "mta-hkmc-approuter" staged
Starting application "mta-hkmc-approuter"...
Application "mta-hkmc-approuter" started and available at "0b3ef4e2trial-dev-mta-hkmc-approuter.cfapps.us10-001.hana.ondemand.com"
Skipping deletion of services, because the command line option "--delete-services" is not specified.
Process finished.
Use "cf logs -t bea2b963-68e8-11ed-831d-eeee0a91acbd" to download the logs of the process.

```

배포가 완료된 URL을 통해 배포된 Application에 접속하면 아래와 같이 SAPUI5 Application이 나타나는 것을 확인할 수 있습니다.

App Title

여기까지 SAP BTP Trial에 대한 기본적인 개발 방법 및 배포 방법에 대해 알아보았습니다.

해당 상세 소스는 아래의 git를 통해 확인하실 수 있습니다.

<https://github.com/rendez0829/mta-hkmc-trial/>