

Short term training program for student of BU-UIT Bhopal

NITTTR Bhopal

Project 01 – Boiler

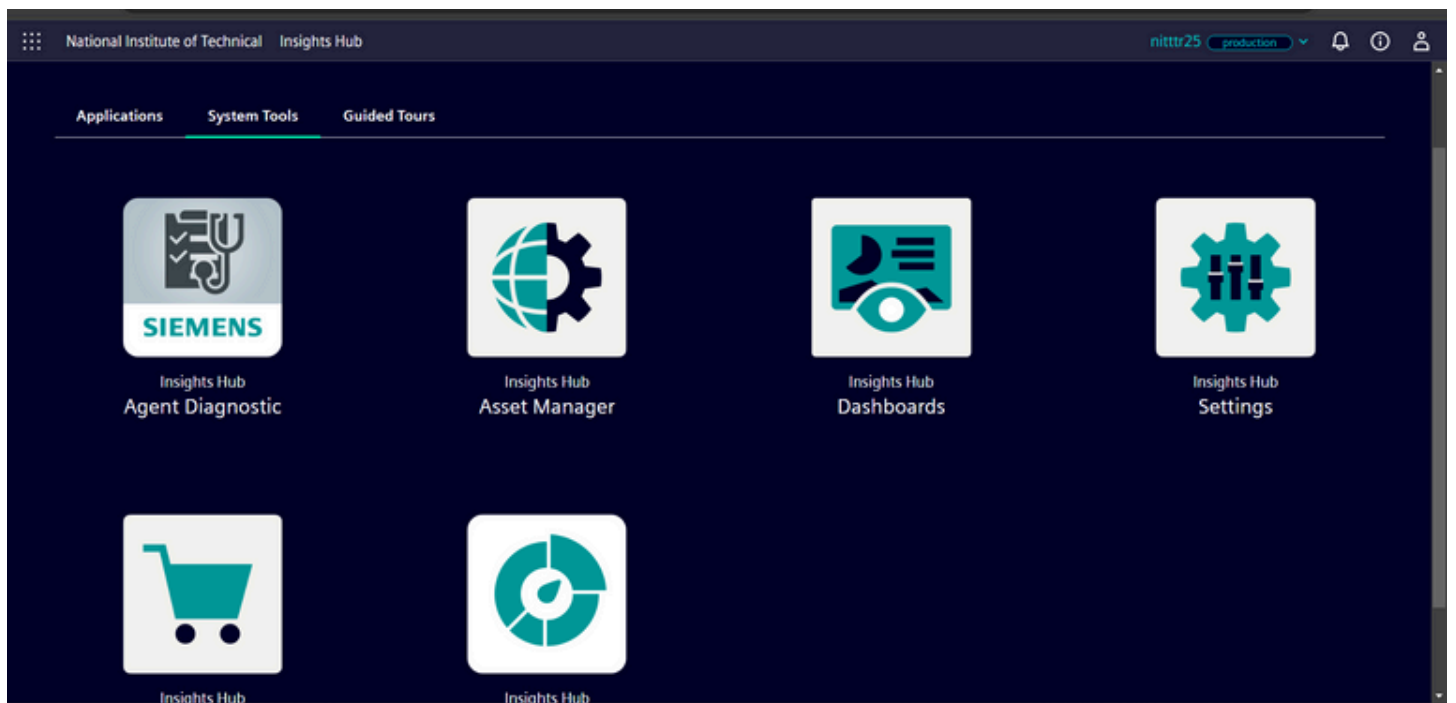
To create an IOT Model for representation of
IOT Lab and its participants in NITTTR Bhopal Siemens COE

Project title : boiler Monitoring

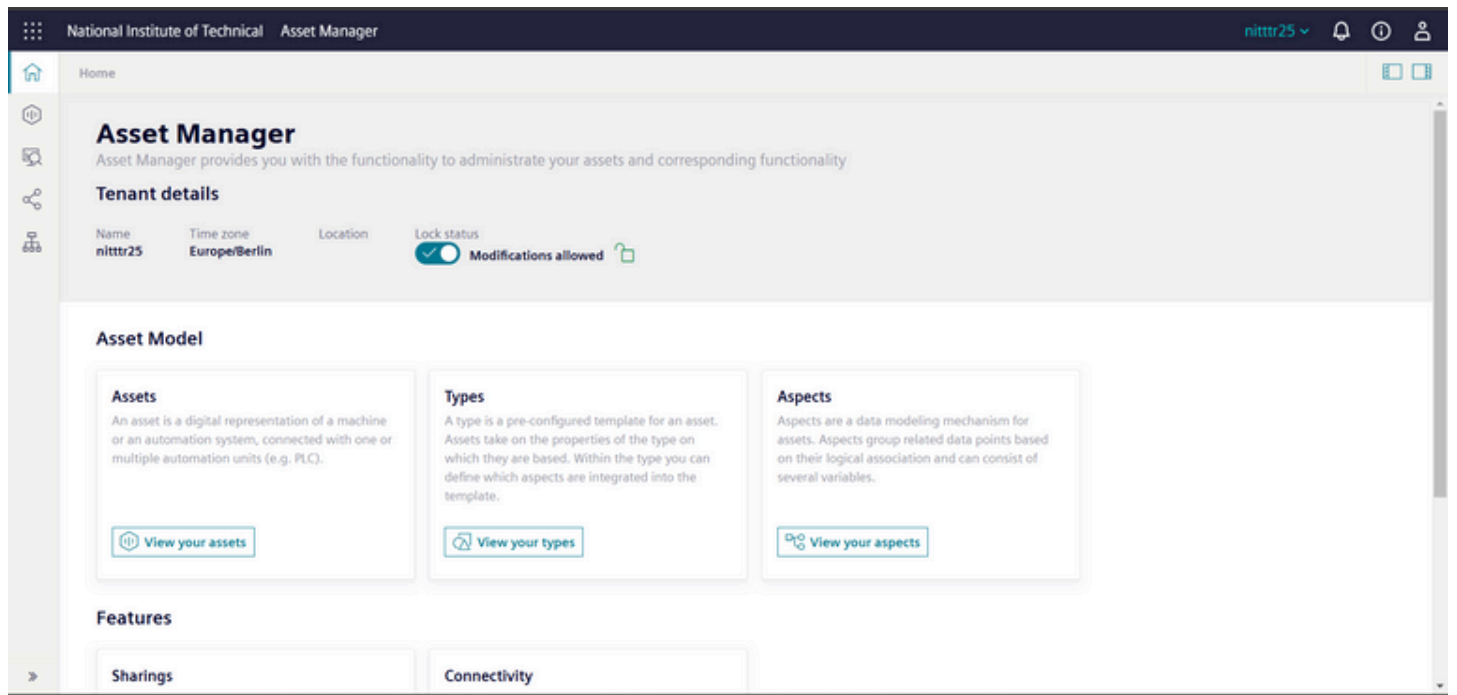
By: Shubhi Arjariya

Mentored by : Toshit Pathak

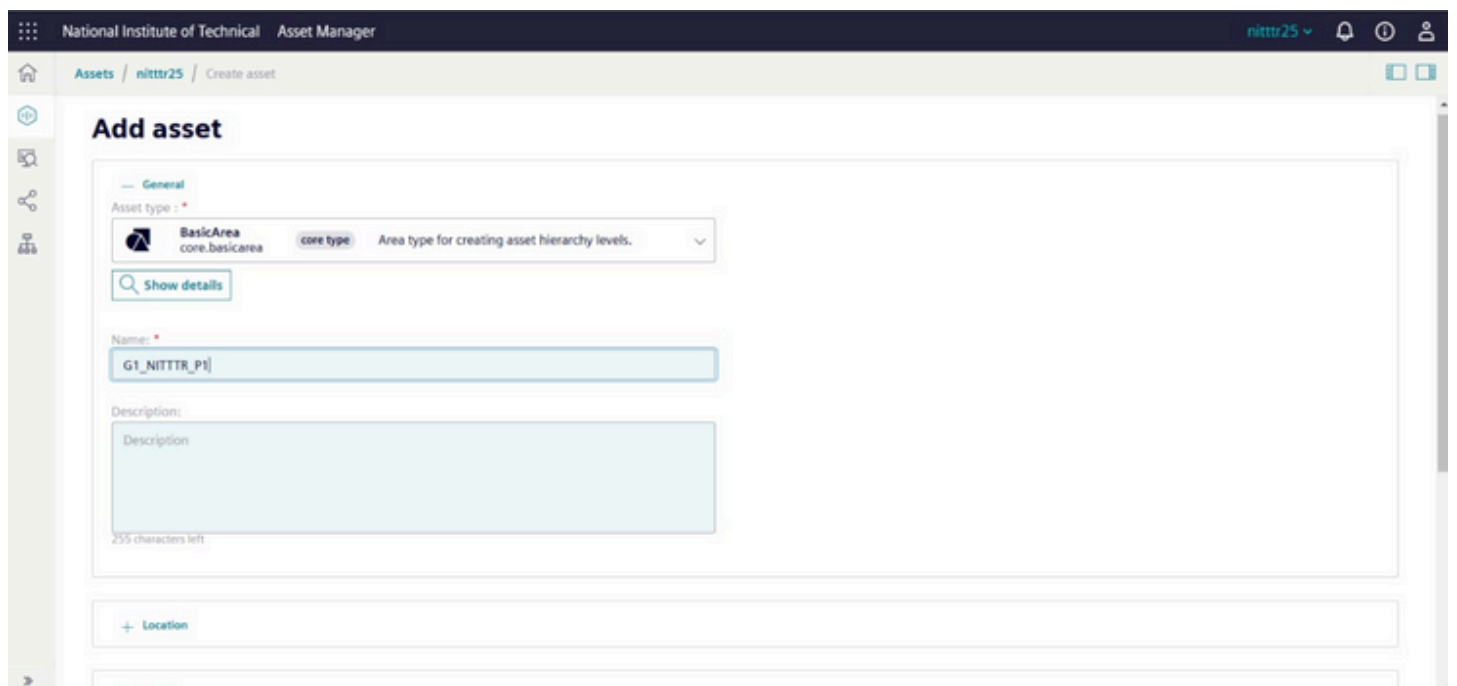
Step 01 : Click on Asset Manager



Step 02 : Click on View your Asset :



Step 03 : Create a basic area asset and name it “G1_NITTTR_P1”




Step 04 :Create its Child asset of basic site type and name its “G1_MECHANICAL_LAB”

National Institute of Technical Asset Manager nitttr25

Assets / nitttr25 / G1_NITTTR_P1 / Create asset

Add asset

General

Asset type:  BasicSite core.basicsite **core type** Site type for creating asset hierarchy levels. [Show details](#)

Name:

Description:
255 characters left

+ Location

+ Image

Step 05 : Go to home and click on view your Aspect

National Institute of Technical Asset Manager nitttr25

Home

Asset Manager

Asset Manager provides you with the functionality to administrate your assets and corresponding functionality.

Tenant details

Name	Time zone	Location	Lock status
nitttr25	Europe/Berlin		<input checked="" type="checkbox"/> Modifications allowed

Asset Model

Assets

An asset is a digital representation of a machine or an automation system, connected with one or multiple automation units (e.g. PLC).

[View your assets](#)

Types

A type is a pre-configured template for an asset. Assets take on the properties of the type on which they are based. Within the type you can define which aspects are integrated into the template.

[View your types](#)

Aspects

Aspects are a data modeling mechanism for assets. Aspects group related data points based on their logical association and can consist of several variables.

[View your aspects](#)

Features

Sharings

Connectivity

Step 06 : Create an Aspect and Name it “G1_BOILER_OPERATIONAL_PARAMETER”

National Institute of Technical Asset Manager nitr25 ▾ 🔔 ⓘ 👤

Library / Aspect Types / Create aspect

Create aspect

— Aspect information

Aspect ID:
nitr25.G1_BOILER_OPERATIONAL_PARAMETERS

Aspect ID cannot be changed after creation

Name: *
G1_BOILER_OPERATIONAL_PARAMETERS

Description:
Description

255 characters left

Choose category:

1 The category of an aspect cannot be changed afterwards.

☒ Dynamic
The aspect is used for time-series data

☐ Static
The aspect is used for static data

— Variables

Step 07: Click on add variables and add variables accordingly and save it !

National Institute of Technical Asset Manager nitr25 ▾ 🔔 ⓘ 👤

Library / Aspect Types / Create aspect

1 The category of an aspect cannot be changed afterwards.

☒ Dynamic
The aspect is used for time-series data

☐ Static
The aspect is used for static data

— Variables

1

- Variable names must be unique inside an aspect.
- The data type BIG_STRING is only available for a dynamic aspect.

⊕ Add variable
↕ Import variables
⬇ Download template
⬇ Export variables
🗑 Delete all new

Name	Unit	Data type	Max. length		
Steam_Pressure	Pa ▾	INT ▾	Max. length	Defined	🗑
Steam_Temperature	C ▾	INT ▾	Max. length	Defined	🗑
Fuel_Flow_Rate	kg/s ▾	INT ▾	Max. length	Defined	🗑
Air_Flow_Rate	kg/s ▾	INT ▾	Max. length	Defined	🗑
Feedwater_Temperature	C ▾	INT ▾	Max. length	Defined	🗑

Save
Cancel

Step 08: Create other aspects as well.

Step 9 : Go to home and create a type and name it "G1_BOILER_TYPE"

National Institute of Technical Asset Manager Memory usage: 165 MB nitttr25

Library / Asset Types / core.basicasst / Create type

Create type

Type information

Parent type: core.basicasst
Parent type due to hierarchical order

Name: *
G1_BOILER_TYPE

Type ID: *
nitttr25.G1_BOILER_TYPE
Type ID cannot be changed after creation

Description:
Description
255 characters left

+ Image

Step 10: Add your created aspects in it .

National Institute of Technical Asset Manager nitttr25

Library / Asset Types / core.basicasst / Create type

+ variables

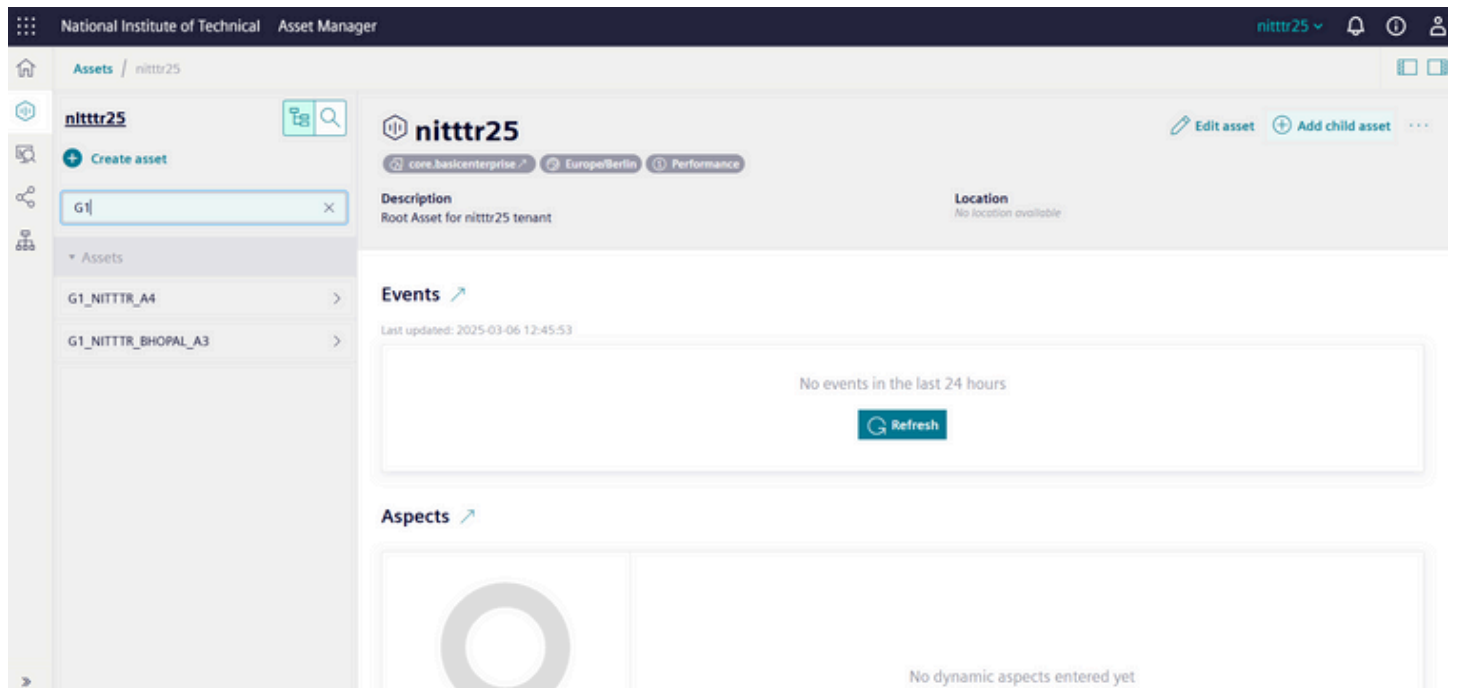
Aspects

+ Add aspect 🔍 Browse aspects

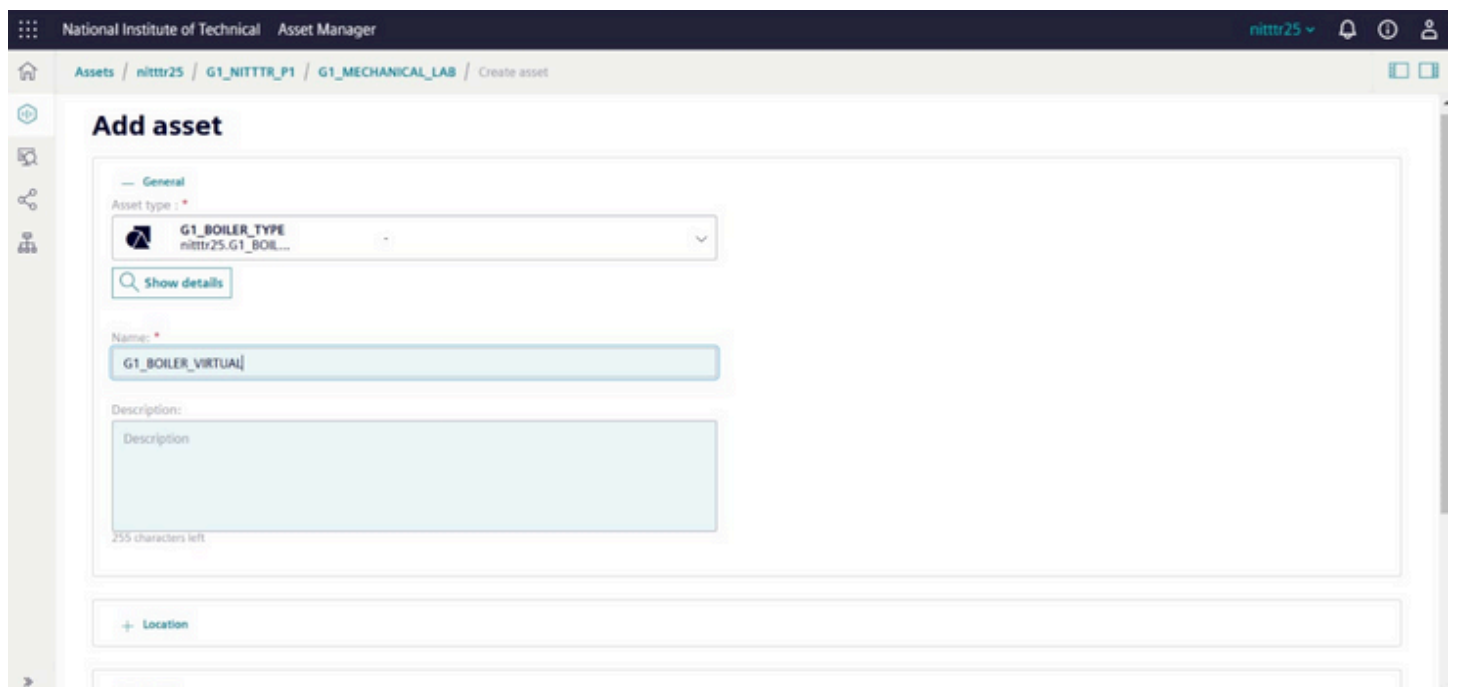
Name	Aspect	Category	
> G1_BOILER_EXTERNAL_FACTOR	nitttr25.G1_BOILER_EXTERNAL_FACTOR	Dynamic	Defined
> G1_BOILER_OPERATIONAL_PARAMETERS	nitttr25.G1_BOILER_OPERATIONAL_PARAMETERS	Dynamic	Defined
> G1_COMBUSTION	nitttr25.G1_COMBUSTION	Dynamic	Defined
> G1_CONTROL_AUTOMATION	nitttr25.G1_CONTROL_AUTOMATION	Dynamic	Defined
> G1_EMISSIONS	nitttr25.G1_EMISSIONS	Dynamic	Defined
> G1_MECHANICAL_STRUCTURAL	nitttr25.G1_MECHANICAL_STRUCTURAL	Dynamic	Defined
> G1_SAFETY_CONTROL_SYSTEM	nitttr25.G1_SAFETY_CONTROL_SYSTEM	Dynamic	Defined
> G1_WATER_QUALITY_TREATMENT	nitttr25.G1_WATER_QUALITY_TREATMENT	Dynamic	Defined

Save Cancel

11. Go to home and go to your created child asset “G1_BOILER_VIRTUAL”



Step 12 : Create its child asset and name it “G1_BOILER_VIRTUAL” and select your “G1_BOILER_TYPE” in it.



Step 13 : Result

Assets / nitttr25 / G1_NITTTR_P1 / G1_MECHANICAL_LAB / G1_BOILER_VIRTUAL / Aspects

Back

Create asset

Filter

Assets

G1_BOILER_VIRTUAL

The following table shows the most recent values or aggregated time series data within the last 12 hours. Therefore, the values may differ from the previous view.
For technical details, please refer to <https://developer.mindsphere.io/concepts/concept-iot.html>.

Refresh

Name	Status	
> G1_BOILER_EXTERNAL_FACTOR	No data available 2025-03-06 13:11:00	<div></div>
> G1_BOILER_OPERATIONAL_PARAMETERS	No data available 2025-03-06 13:11:00	<div></div>
> G1_COMBUSTION	No data available 2025-03-06 13:11:00	<div></div>
> G1_CONTROL_AUTOMATION	No data available 2025-03-06 13:11:00	<div></div>
> G1_EMISSIONS	No data available 2025-03-06 13:11:00	<div></div>
> G1_MECHANICAL_STRUCTURAL	No data available 2025-03-06 13:11:00	<div></div>
> G1_SAFETY_CONTROL_SYSTEM	No data available 2025-03-06 13:11:00	<div></div>
> G1_WATER_QUALITY_TREATMENT	No data available 2025-03-06 13:11:00	<div></div>