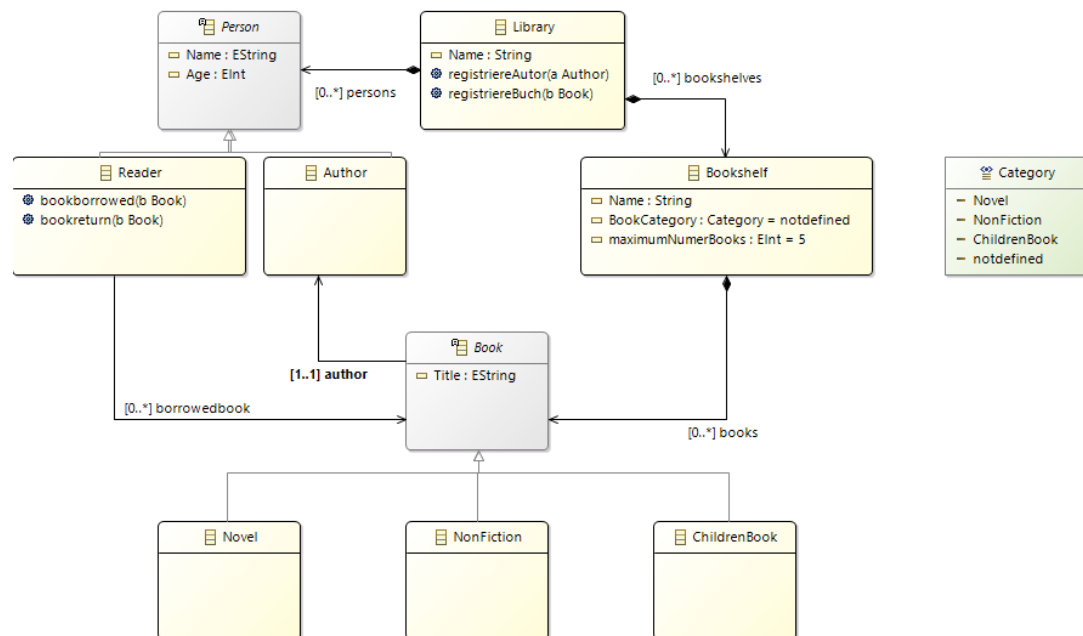
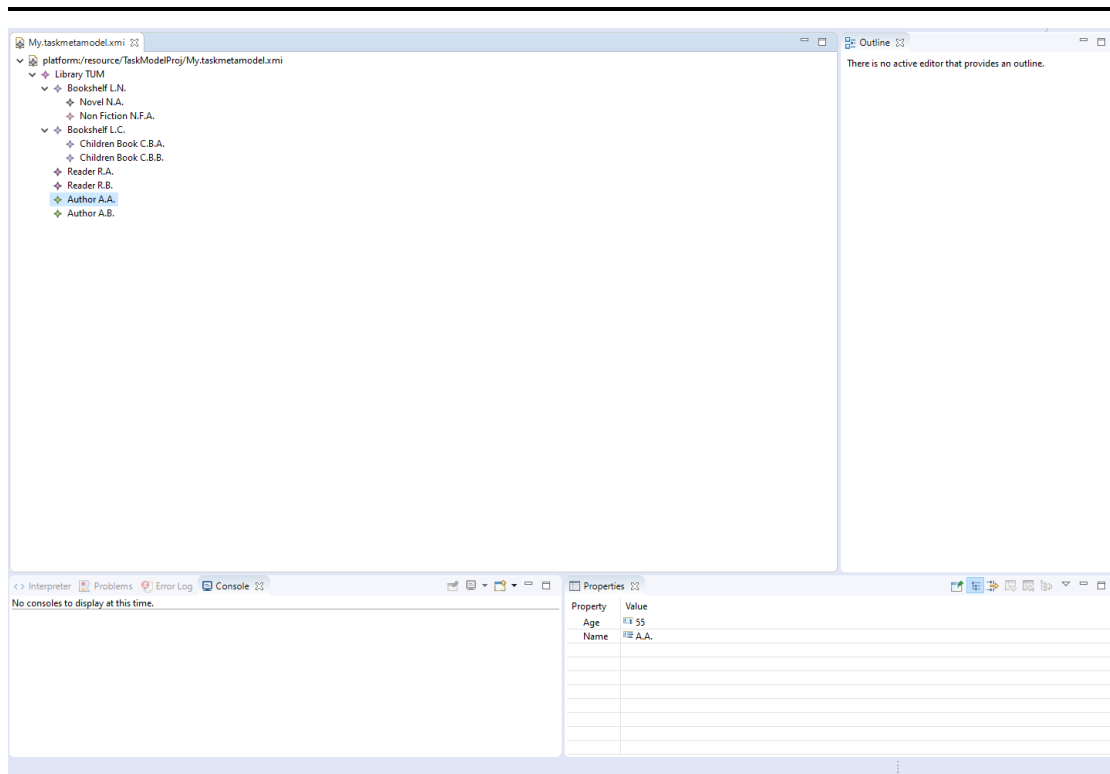


Topic 3

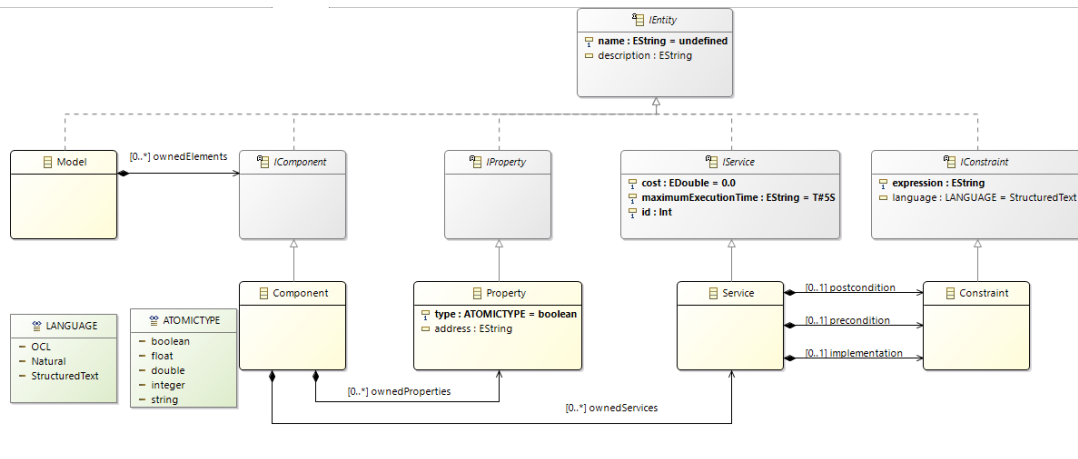
After uploading the homework for Topic3, I received a feedback email from Minjie Zou. According to the content of the email, I improved the structure of my homework for Topic3 again. And here is the result.

Task1 Library





Task 2 Exercise



The screenshot shows the Eclipse IDE with the following components:

- Editor:** Displays the XML file `SamplePlant.xml`. The content is as follows:


```

<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<model_testing_station>
  <component_testing_station>
    <property_e_werkstueck_vorhanden/>
    <property_e_werkstueck_nicht_schwarz/>
    <property_e_arbeitsraum_frei/>
    <property_e_hoehe_ok/>
    <property_e_aufzug_oben/>
    <property_e_aufzug_unten/>
    <property_e_zylinder_eingefahren/>
    <property_e_folgestation_frei/>
    <property_a_aufzug_abwaerts/>
    <property_a_aufzug_aufwaerts/>
    <property_a_zylinder_ausschieben/>
    <property_a_luft_an/>
    <property_a_station_frei/>
  </component_testing_station>
  <service_init/>
  <service_liftingup/>
  <service_loweringdown/>
  <service_cylinderextending/>
  <service_cylinderretraction/>
  <service_airinjection/>
  <service_airoff/>
  <service_setreleasesignal/>
</model_testing_station>
      
```
- Outline:** Shows a message: "There is no active editor that provides an outline."
- Properties:** Shows the selected property `Property e_werkstueck_vorhanden` with the value `boolean`.
- Console:** Shows the message: "No consoles to display at this time."

SamplePlant.xml

platform/resource/plant.model/SamplePlant.xml

- Model Testing station
 - Component Testiong station
 - Property e_werkstueck_vorhanden
 - Property e_werkstueck_nicht_schwarz
 - Property e_arbeitsraum_frei
 - Property e_hoehe_ok
 - Property e_aufzug_oben
 - Property e_aufzug_unten
 - Property e_zylinder_eingefahren
 - Property e_folgestation_frei
 - Property a_aufzug_abwaerts
 - Property a_aufzug_aufwaerts
 - Property a_zylinder_ausschieben
 - Property a_luft_an
 - Property a_station_frei
 - Service Init
 - Constraint Init_Pre
 - Constraint Init_Post
 - Constraint Init_Impl
 - Service LiftingUp
 - Constraint LiftingUp_Pre
 - Constraint LiftingUp_Post
 - Constraint LiftingUp_Impl
 - Service LoweringDown
 - Service CylinderExtending
 - Service CylinderRetraction
 - Service AirInjection
 - Service AirOff
 - Service SetReleaseSignal

Outline

There is no active editor that provides an outline.

Interpreter Problems Error Log Console

No consoles to display at this time.

Property	Value
Cost	0.0
Description	
Id	0
Maximum Execution Time	T#55
Name	Init

SamplePlant.xml

platform/resource/plant.model/SamplePlant.xml

- Model Testing station
 - Component Testiong station
 - Property e_werkstueck_vorhanden
 - Property e_werkstueck_nicht_schwarz
 - Property e_arbeitsraum_frei
 - Property e_hoehe_ok
 - Property e_aufzug_oben
 - Property e_aufzug_unten
 - Property e_zylinder_eingefahren
 - Property e_folgestation_frei
 - Property a_aufzug_abwaerts
 - Property a_aufzug_aufwaerts
 - Property a_zylinder_ausschieben
 - Property a_luft_an
 - Property a_station_frei
 - Service Init
 - Constraint Init_Pre
 - Constraint Init_Post
 - Constraint Init_Impl
 - Service LiftingUp
 - Constraint LiftingUp_Pre
 - Constraint LiftingUp_Post
 - Constraint LiftingUp_Impl
 - Service LoweringDown
 - Service CylinderExtending
 - Service CylinderRetraction
 - Service AirInjection
 - Service AirOff
 - Service SetReleaseSignal

Outline

There is no active editor that provides an outline.

Interpreter Problems Error Log Console

No consoles to display at this time.

Property	Value
Description	
Expression	TRUE
Language	StructuredText
Name	Init_Pre

SamplePlant.xml

platform/resource/plant.model/SamplePlant.xml

- Model Testing station
 - Component Testiong station
 - Property e_werkstueck_vorhanden
 - Property e_werkstueck_nicht_schwarz
 - Property e_arbeitsraum_frei
 - Property e_hoehs_ok
 - Property e_aufzug_oben
 - Property e_aufzug_unten
 - Property e_zylinder_eingefahren
 - Property e_folgestation_frei
 - Property a_aufzug_abwaerts
 - Property a_aufzug_aufwaerts
 - Property a_zylinder_ausschieben
 - Property a_luft_an
 - Property a_station_frei
 - Service Init
 - Constraint Init_Pre
 - Constraint Init_Post
 - Constraint Init_Impl
 - Service LiftingUp
 - Constraint LiftingUp_Pre
 - Constraint LiftingUp_Post
 - Constraint LiftingUp_Impl
 - Service LoweringDown
 - Service CylinderExtending
 - Service CylinderRetraction
 - Service AirInjection
 - Service AirOff
 - Service SetReleaseSignal

Outline

There is no active editor that provides an outline.

Properties

Property	Value
Description	
Expression	m_SystemTimer((IN:=TRUE, PT:=T#0.5s); a_aufzug_aufwaerts:=TRUE;
Language	StructuredText
Name	LiftingUp_Impl

SamplePlant.xml

platform/resource/plant.model/SamplePlant.xml

- Model Testing station
 - Component Testiong station
 - Property e_werkstueck_vorhanden
 - Property e_werkstueck_nicht_schwarz
 - Property e_arbeitsraum_frei
 - Property e_hoehs_ok
 - Property e_aufzug_oben
 - Property e_aufzug_unten
 - Property e_zylinder_eingefahren
 - Property e_folgestation_frei
 - Property a_aufzug_abwaerts
 - Property a_aufzug_aufwaerts
 - Property a_zylinder_ausschieben
 - Property a_luft_an
 - Property a_station_frei
 - Service Init
 - Constraint Init_Pre
 - Constraint Init_Post
 - Constraint Init_Impl
 - Service LiftingUp
 - Constraint LiftingUp_Pre
 - Constraint LiftingUp_Post
 - Constraint LiftingUp_Impl
 - Service LoweringDown
 - Constraint LoweringDown_Pre
 - Constraint LoweringDown_Post
 - Constraint LoweringDown_Impl
 - Service CylinderExtending
 - Service CylinderRetraction
 - Service AirInjection
 - Service AirOff
 - Service SetReleaseSignal

Outline

There is no active editor that provides an outline.

Properties

Property	Value
Description	
Expression	e_aufzug_oben AND NOT e_aufzug_unten AND e_arbeitsraum_frei
Language	StructuredText
Name	LoweringDown_Pre

[illegible]

The screenshot displays the Eclipse IDE interface with the following components:

- Project Explorer:** Shows the project structure for 'SamplePlant.xml'. The 'Model Testing station' component is expanded, revealing a hierarchy of properties and services. The 'Constraint CylinderExtending_Pre' property is selected and highlighted.
- Outline:** Displays the message 'There is no active editor that provides an outline.'
- Properties:** Shows the properties of the selected 'Constraint CylinderExtending_Pre' element. The 'Description' property is expanded, showing its value as 'e_werkstueck_vorhanden AND e_zylinder_eingefahren'.
- Console:** Displays the message 'No consoles to display at this time.'

SamplePlant.xml

platform/resource/plant.model/SamplePlant.xml

- Model Testing station
 - Component Testiong station
 - Property e_werkstueck_vorhanden
 - Property e_werkstueck_nicht_schwarz
 - Property e_arbeitsraum_frei
 - Property e_hoehs_ok
 - Property e_aufzug_oben
 - Property e_aufzug_unten
 - Property e_zylinder_eingefahren
 - Property e_folgestation_frei
 - Property a_aufzug_abwaerts
 - Property a_aufzug_aufwaerts
 - Property a_zylinder_ausschieben
 - Property a_luft_an
 - Property a_station_frei
 - Service Init
 - Constraint Init_Pre
 - Constraint Init_Post
 - Constraint Init_Impl
 - Service LiftingUp
 - Constraint LiftingUp_Pre
 - Constraint LiftingUp_Post
 - Constraint LiftingUp_Impl
 - Service LoweringDown
 - Constraint LoweringDown_Pre
 - Constraint LoweringDown_Post
 - Constraint LoweringDown_Impl
 - Service CylinderExtending
 - Constraint CylinderExtending_Pre
 - Constraint CylinderExtending_Post
 - Constraint CylinderExtending_Impl
 - Service CylinderRetraction
 - Service AirInjection
 - Service AirOff
 - Service SetReleaseSignal

Properties

Property	Value
Description	
Expression	<code>m_zylinder_ausschieben==TRUE; m_SystemTimer(IN:=TRUE, PT:=T#0.5s);</code>
Language	StructuredText
Name	CylinderExtending_Impl

No consoles to display at this time.

Outline

There is no active editor that provides an outline.

SamplePlant.xml

platform/resource/plant.model/SamplePlant.xml

- Model Testing station
 - Component Testiong station
 - Property e_werkstueck_vorhanden
 - Property e_werkstueck_nicht_schwarz
 - Property e_arbeitsraum_frei
 - Property e_hoehs_ok
 - Property e_aufzug_oben
 - Property e_aufzug_unten
 - Property e_zylinder_eingefahren
 - Property e_folgestation_frei
 - Property a_aufzug_abwaerts
 - Property a_aufzug_aufwaerts
 - Property a_zylinder_ausschieben
 - Property a_luft_an
 - Property a_station_frei
 - Service Init
 - Service LiftingUp
 - Service LoweringDown
 - Service CylinderExtending
 - Service CylinderRetraction
 - Constraint CylinderRetraction_Pre
 - Constraint CylinderRetraction_Post
 - Constraint CylinderRetraction_Impl
 - Service AirInjection
 - Service AirOff
 - Service SetReleaseSignal

Properties

Property	Value
Description	
Expression	<code>NOT e_werkstueck_vorhanden AND NOT e_zylinder_eingefahren</code>
Language	StructuredText
Name	CylinderRetraction_Pre

No consoles to display at this time.

Outline

There is no active editor that provides an outline.

SamplePlant.xml

platform/resource/plant.model/SamplePlant.xml

- Model Testing station
 - Component Testiong station
 - Property e_werkstueck_vorhanden
 - Property e_werkstueck_nicht_schwarz
 - Property e_arbeitsraum_frei
 - Property e_hoehe_ok
 - Property e_aufzug_oben
 - Property e_aufzug_unten
 - Property e_zylinder_eingefahren
 - Property e_folgestation_frei
 - Property a_aufzug_abwaerts
 - Property a_aufzug_aufwaerts
 - Property a_zylinder_ausschieben
 - Property a_luft_an
 - Property a_station_frei
 - Service Init
 - Service LiftingUp
 - Service LoweringDown
 - Service CylinderExtending
 - Service CylinderRetraction
 - Service AirInjection
 - Service AirOff
 - Constraint AirOff_Pre
 - Constraint AirOff_Post**
 - Constraint AirOff_Impl
 - Service SetReleaseSignal

Outline

There is no active editor that provides an outline.

Properties

Property	Value
Description	
Expression	TRUE
Language	StructuredText
Name	AirOff_Post

No consoles to display at this time.

SamplePlant.xml

platform/resource/plant.model/SamplePlant.xml

- Model Testing station
 - Component Testiong station
 - Property e_werkstueck_vorhanden
 - Property e_werkstueck_nicht_schwarz
 - Property e_arbeitsraum_frei
 - Property e_hoehe_ok
 - Property e_aufzug_oben
 - Property e_aufzug_unten
 - Property e_zylinder_eingefahren
 - Property e_folgestation_frei
 - Property a_aufzug_abwaerts
 - Property a_aufzug_aufwaerts
 - Property a_zylinder_ausschieben
 - Property a_luft_an
 - Property a_station_frei
 - Service Init
 - Service LiftingUp
 - Service LoweringDown
 - Service CylinderExtending
 - Service CylinderRetraction
 - Service AirInjection
 - Service AirOff
 - Constraint AirOff_Pre
 - Constraint AirOff_Post
 - Constraint AirOff_Impl**
 - Service SetReleaseSignal

Outline

There is no active editor that provides an outline.

Properties

Property	Value
Description	
Expression	m_SystemTimer(N:=TRUE, PT:=T#2s); a_luft_an:=TRUE;
Language	StructuredText
Name	AirOff_Impl

No consoles to display at this time.

The screenshot shows the Eclipse IDE interface. The Project Explorer on the left displays the file structure of 'SamplePlant.xml'. The file is expanded, showing a hierarchy of components: 'Model Testing station', 'Component Testing station', and various properties like 'e_werkstueck_vorhanden', 'e_werkstueck_nicht_schwarz', etc. The 'Properties' view at the bottom shows the 'Description' of the selected element, 'Constraint SetReleaseSignal_Post', which is a 'StructuredText'.

SamplePlant.xml

platform/resource/plant.model/SamplePlant.xml

Model Testing station

Component Testiong station

Property e_werkstueck_vorhanden

Property e_werkstueck_nicht_schwarz

Property e_arbeitsraum_frei

Property e_hoehhe_ok

Property e_aufzug_oben

Property e_aufzug_unten

Property e_zylinder_eingefahren

Property e_folgestation_frei

Property a_aufzug_abwaerts

Property a_aufzug_aufwaerts

Property a_zylinder_ausschieben

Property a_luft_an

Property a_station_frei

Service Init

Service LiftingUp

Service LoweringDown

Service CylinderExtending

Service CylinderRetraction

Service AirInjection

Service AirOff

Service SetReleaseSignal

Constraint SetReleaseSignal_Pre

Constraint SetReleaseSignal_Post

Constraint SetReleaseSignal_Impl

Outline

There is no active editor that provides an outline.

<> I P E C

No consoles to display at this time.

Properties

Property	Value
Description	
Expression	a_station_frei=TRUE;
Language	StructuredText
Name	SetReleaseSignal_Impl

