

## Progress Report - 04 Agustus 2025

### A. Belajar Acceleo

1. Judul: Acceleo/User Guide

Link: [https://wiki.eclipse.org/Acceleo/User\\_Guide](https://wiki.eclipse.org/Acceleo/User_Guide)

Materi yang dipelajari:

- Acceleo language
- Acceleo tooling
- Acceleo launching
- Acceleo deploying
- Acceleo working with an existing generator
- Acceleo integrating in an existing workflow

2. Judul: Acceleo/Maven

Link: <https://wiki.eclipse.org/Acceleo/Maven>

Materi yang dipelajari:

- Compilation
- Execution

3. Judul: Acceleo/Interpreter

Link: <https://wiki.eclipse.org/Acceleo/Interpreter>

Materi yang dipelajari:

- Language selection
- Expression
- Evaluation result
- Sub-Expressions
- Variables
- Feedback
- Actions
- Additional interpreters

4. Judul: Acceleo/Runtime

Link: <https://wiki.eclipse.org/Acceleo/Runtime>

Materi yang dipelajari:

- Compiler
- Generation engine
- Stand alone

5. Judul: Acceleo/Views Perspective

Link: [https://wiki.eclipse.org/Acceleo/Views\\_Perspective](https://wiki.eclipse.org/Acceleo/Views_Perspective)

Materi yang dipelajari:

- Views and Perspective

- Overrides View
- Result View
- Generation Pattern

6. Judul: Acceleo/Module Editor

Link: [https://wiki.eclipse.org/Acceleo/Acceleo\\_Editor](https://wiki.eclipse.org/Acceleo/Acceleo_Editor)

Materi yang dipelajari:

- Syntax highlighting
- Smart completion
- Navigation to definitions and references
- Error detection
- Quick fixes
- Warning and information support
- Dynamic outline
- Quick outline
- Code folding
- Code templates
- Documentation hover
- Visible whitespace characters
- Search of occurrences
- Refactoring

7. Judul: MOF Model to Text Transformation Language

Link: <https://www.omg.org/spec/MOFM2T/1.0/PDF>

Materi yang dipelajari:

- Overview of mof2text
- Template language specification
- Example

8. Judul: Overview in the eclipse model-driven architecture tools

Link:

[https://www.itm-conferences.org/articles/itmconf/pdf/2022/06/itmconf\\_iceas2022\\_02001.pdf](https://www.itm-conferences.org/articles/itmconf/pdf/2022/06/itmconf_iceas2022_02001.pdf)

Materi yang dipelajari:

- Model-driven architecture
- Model transformations
- Model transformations tools

9. Judul: Acceleo Best Practices

Link: <https://www.obeosoft.com/en/acceleo-best-practices>

Materi yang dipelajari:

- Naming conventions
- Architecture of Acceleo project
- Writing a good module

- Usage of Java services
- Preventing problems with traceability information
- Testing Acceleo generator
- Managing user code

10. Judul: Code generation from visual models using Eclipse Sirius and Acceleo

Link: <https://blog.anj.ai/2020/12/acceleo.html>

Materi yang dipelajari:

- Generate code from custom modelling language

11. Judul: Acceleo 4 ever by Eclipse Foundation

Link: <https://youtu.be/XWXXzL8bi1g>

Materi yang dipelajari:

- Template-based approach of Acceleo
- EMF model-to-text generation
- Acceleo 4 demo
- Acceleo Query Language

12. Judul: Acceleo Model To Text Transformation by Jose Alfonso Aguilar

Link: <https://youtu.be/i68L4R5XGIw>

Materi yang dipelajari:

- Example Acceleo model to text using Eclipse Acceleo plugin

13. Judul: Code generation using Acceleo by Marco Di Natale

Link: <https://youtu.be/42jkrOWA9RE>

Materi yang dipelajari:

- Example Acceleo project

14. Judul: Acceleo/Getting Started

Link: [https://wiki.eclipse.org/Acceleo/Getting\\_Started](https://wiki.eclipse.org/Acceleo/Getting_Started)

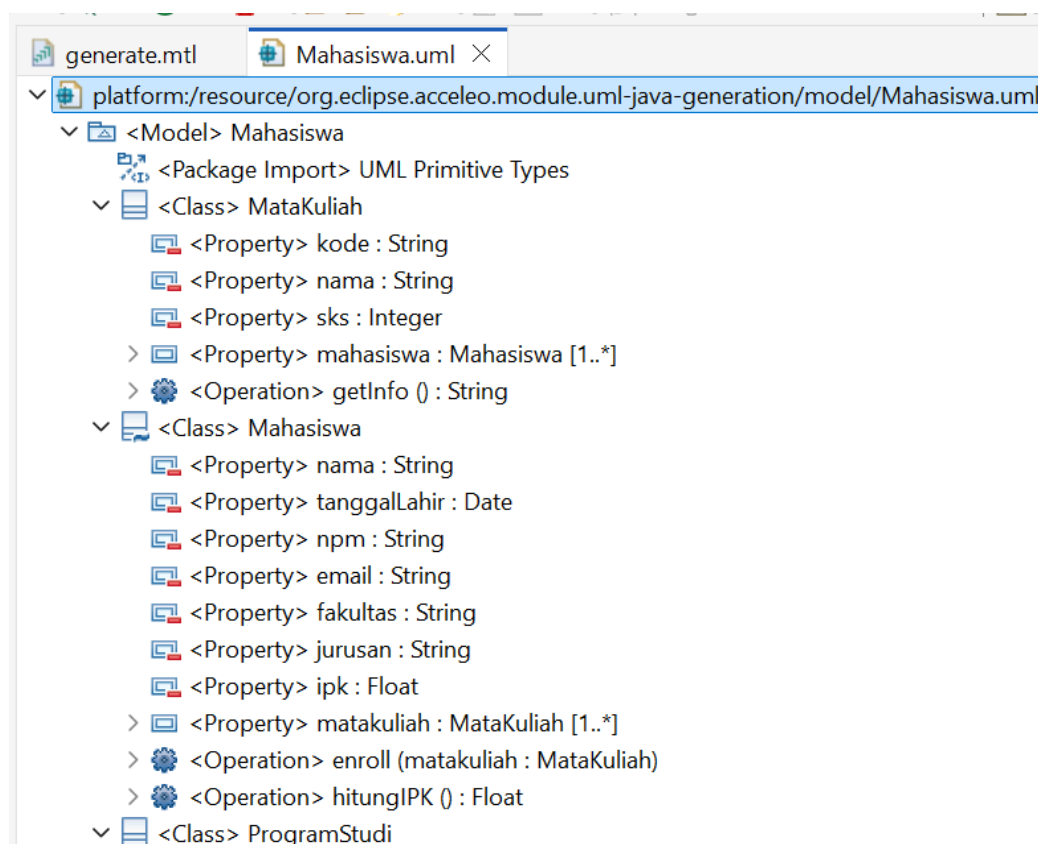
Materi yang dipelajari:

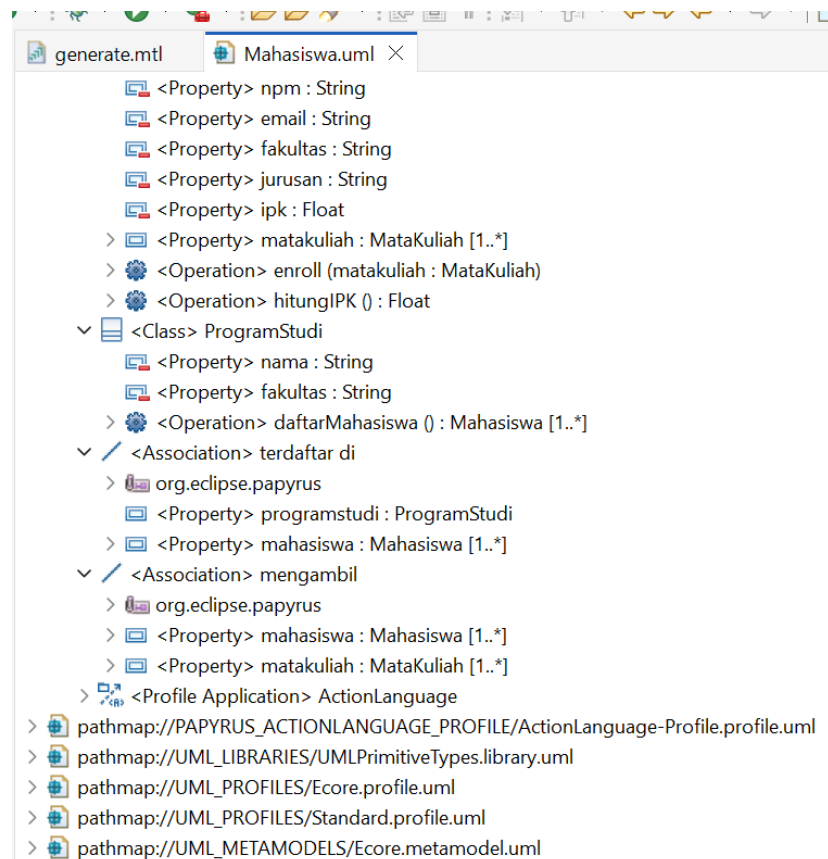
- Create UML Class to Java Generation Acceleo Project
- Generating Java Beans
- User code blocks
- Java services wrappers
- Create main module
- Create UI launcher

## B. UML Class to Java Generation Project

### 1. UML

Pembuatan UML Class menggunakan Papyrus Software Designer. UML Class yang dibuat berupa Mahasiswa.uml, terdiri dari tiga class, yaitu Mahasiswa, MataKuliah, dan ProgramStudi. Selain itu, dibentuk asosiasi antara Mahasiswa dan MataKuliah dengan konteks mahasiswa dapat mengambil mata kuliah dan dibentuk asosiasi antara Mahasiswa dan ProgramStudi dengan konteks setiap mahasiswa terdaftar di suatu program studi. Proses pembuatan UML berjalan lancar, namun saat pembuatan asosiasi yang merupakan bagian terakhir muncul kendala dimana tidak bisa mengakses Properties dan bermunculan error message (akan dibahas lebih lanjut dibawah). Lalu, ditemukan solusinya yaitu dengan dilanjutkan pengerjaan di Generic Code Editor. Berikut ini UML Class dari Mahasiswa.uml:





## 2. Acceleo Generation Module

Acceleo generation module dinamakan generate.mtl. Berdasarkan generate.mtl, setiap variabel dari Class yang ada di UML akan diinisiasi, dibuatkan get method, dan dibuatkan set method. Kemudian, setiap method dari Class pada UML akan dibuatkan method kosong dengan comment TODO didalamnya untuk menandakan bahwa method tersebut perlu di implementasi. Berikut ini Acceleo generation module yang telah dibuat:

```

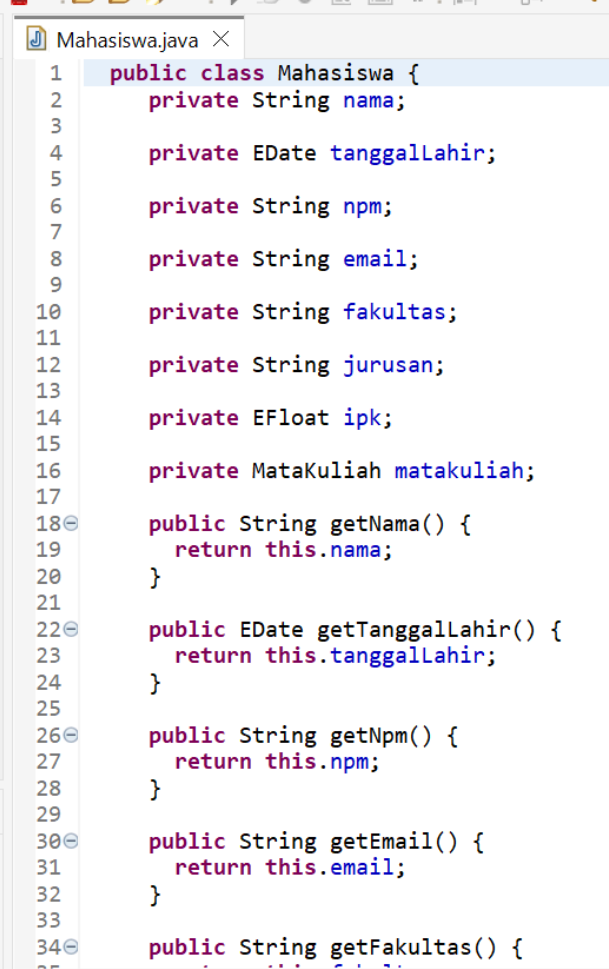
generate.mtl ×
1 [comment encoding = UTF-8 /]
2 [module generate('http://www.eclipse.org/uml2/5.0.0/UML')]
3
4
5 [template public generateElement(aClass : Class)]
6 [comment @main/]
7 [file (aClass.name.concat('.java'), false, 'UTF-8')]
8   public class [aClass.name.toUpperFirst()] {
9     [for (p: Property | aClass.ownedAttribute) separator('\n')]
10    private [p.type.name/] [p.name/];
11    [/for]
12
13    [for (p: Property | aClass.ownedAttribute) separator('\n')]
14    public [p.type.name/] get[p.name.toUpperFirst()]() {
15      return this.[p.name/];
16    }
17    [/for]
18
19    [for (p : Property | aClass.ownedAttribute) separator('\n')]
20    public void set[p.name.toUpperFirst()]([p.type.name/] [p.name/]) {
21      this.[p.name/] = [p.name/];
22    }
23    [/for]
24
25    [for (o: Operation | aClass.ownedOperation) separator('\n')]
26    public [o.type.name/] [o.name/]() {
27      // TODO should be implemented
28    }
29    [/for]
30  }
31 [/file]
32 [/template]
33
34

```

### 3. Generated Java File

Runner yang digunakan adalah Java Application. Oleh karena itu, terdapat penyesuaian terlebih dahulu pada MANIFEST.MF dan Generate.java sebelum run Aceleo application.

Berikut ini Mahasiswa.java yang merupakan generated Java file dari Mahasiswa Class UML:



```
Mahasiswa.java X
1  public class Mahasiswa {
2      private String nama;
3
4      private EDate tanggalLahir;
5
6      private String npm;
7
8      private String email;
9
10     private String fakultas;
11
12     private String jurusan;
13
14     private EFloat ipk;
15
16     private MataKuliah matakuliah;
17
18     public String getNama() {
19         return this.nama;
20     }
21
22     public EDate getTanggalLahir() {
23         return this.tanggalLahir;
24     }
25
26     public String getNpm() {
27         return this.npm;
28     }
29
30     public String getEmail() {
31         return this.email;
32     }
33
34     public String getFakultas() {
```

```

Mahasiswa.java X
34 public String getFakultas() {
35     return this.fakultas;
36 }
37
38 public String getJurusan() {
39     return this.jurusan;
40 }
41
42 public EFloat getIpk() {
43     return this.ipk;
44 }
45
46 public MataKuliah getMatakuliah() {
47     return this.matakuliah;
48 }
49
50 public void setName(String nama) {
51     this.nama = nama;
52 }
53
54 public void setTanggallahir(EDate tanggallahir) {
55     this.tanggallahir = tanggallahir;
56 }
57
58 public void setNpm(String npm) {
59     this.npm = npm;
60 }
61
62 public void setEmail(String email) {
63     this.email = email;
64 }
65
66 public void setFakultas(String fakultas) {
67     this.fakultas = fakultas;

```

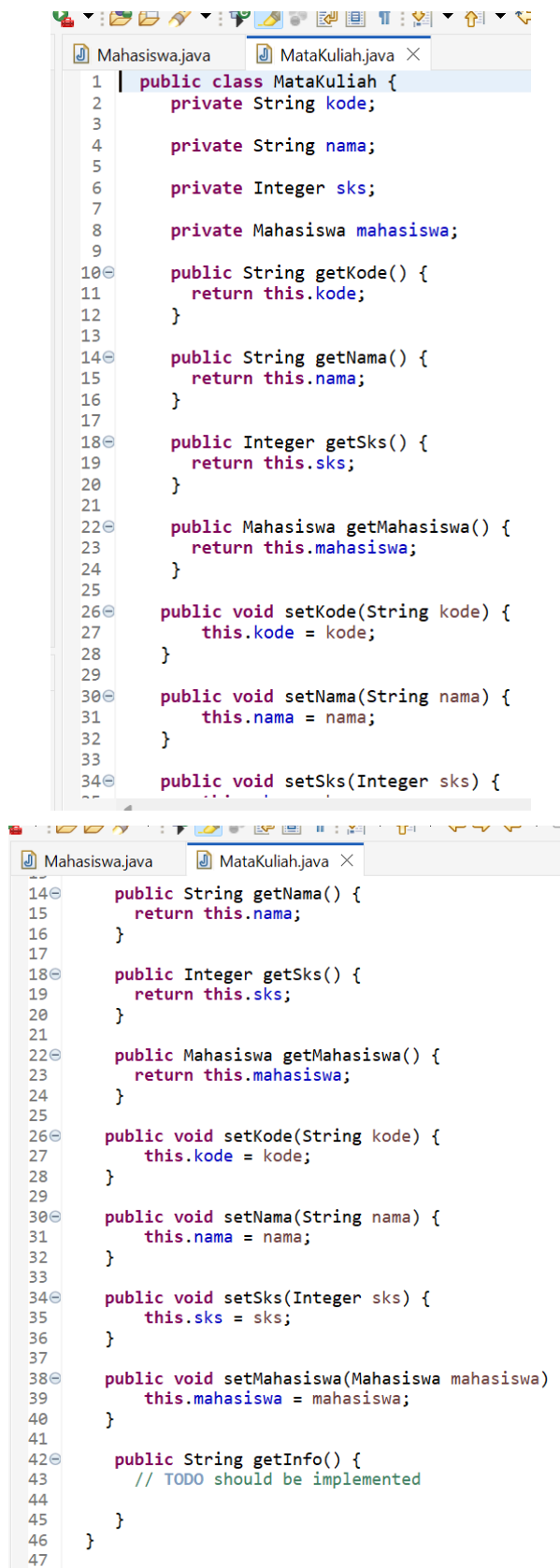
```

Mahasiswa.java X
59     this.npm = npm;
60 }
61
62 public void setEmail(String email) {
63     this.email = email;
64 }
65
66 public void setFakultas(String fakultas) {
67     this.fakultas = fakultas;
68 }
69
70 public void setJurusan(String jurusan) {
71     this.jurusan = jurusan;
72 }
73
74 public void setIpk(EFloat ipk) {
75     this.ipk = ipk;
76 }
77
78 public void setMatakuliah(MataKuliah matakuliah) {
79     this.matakuliah = matakuliah;
80 }
81
82 public void enroll() {
83     // TODO should be implemented
84 }
85
86
87 public EFloat hitungIPK() {
88     // TODO should be implemented
89 }
90 }
91 }
92

```



Berikut ini MataKuliah.java yang merupakan generated Java file dari MataKuliah Class UML:

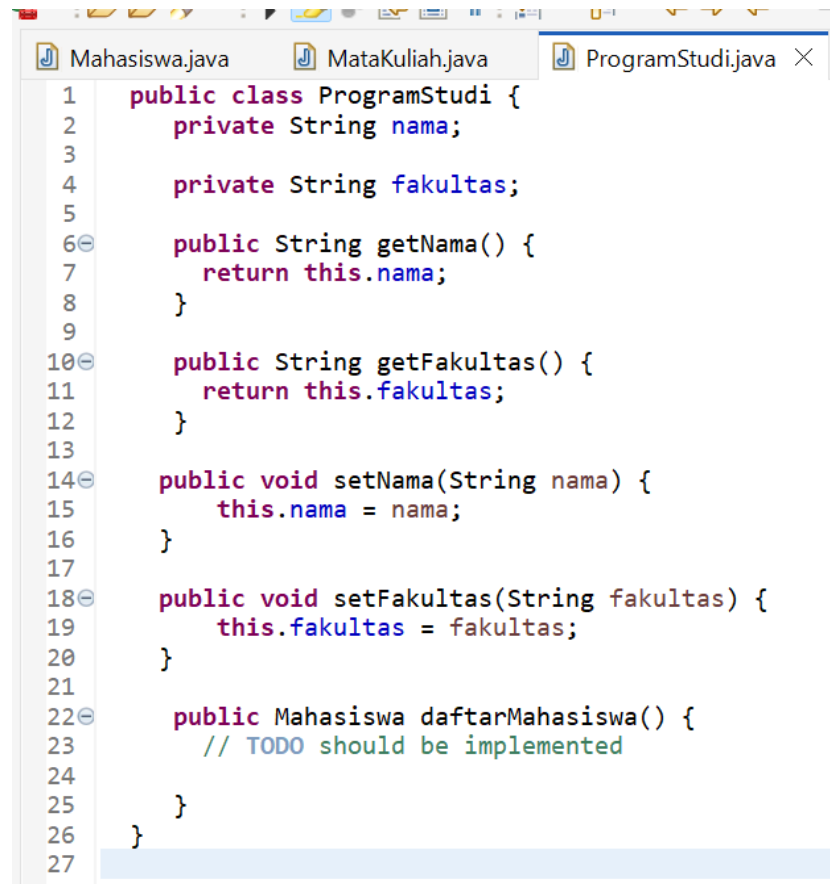


```

1  public class MataKuliah {
2      private String kode;
3
4      private String nama;
5
6      private Integer sks;
7
8      private Mahasiswa mahasiswa;
9
10     public String getKode() {
11         return this.kode;
12     }
13
14     public String getNama() {
15         return this.nama;
16     }
17
18     public Integer getSks() {
19         return this.sks;
20     }
21
22     public Mahasiswa getMahasiswa() {
23         return this.mahasiswa;
24     }
25
26     public void setKode(String kode) {
27         this.kode = kode;
28     }
29
30     public void setNama(String nama) {
31         this.nama = nama;
32     }
33
34     public void setSks(Integer sks) {
35         this.sks = sks;
36     }
37
38     public void setMahasiswa(Mahasiswa mahasiswa) {
39         this.mahasiswa = mahasiswa;
40     }
41
42     public String getInfo() {
43         // TODO should be implemented
44     }
45 }

```

Berikut ini ProgramStudi.java yang merupakan generated Java file dari ProgramStudi Class UML:



```
1 public class ProgramStudi {
2     private String nama;
3
4     private String fakultas;
5
6     public String getNama() {
7         return this.nama;
8     }
9
10    public String getFakultas() {
11        return this.fakultas;
12    }
13
14    public void setNama(String nama) {
15        this.nama = nama;
16    }
17
18    public void setFakultas(String fakultas) {
19        this.fakultas = fakultas;
20    }
21
22    public Mahasiswa daftarMahasiswa() {
23        // TODO should be implemented
24    }
25 }
26
27
```

#### 4. Beberapa Error yang Ditemukan

##### a. Error muncul pada proses pembuatan bagian akhir pada UML

Setiap menekan tombol apapun di eclipse maka error yang sama akan muncul. Berikut ini error yang muncul di Error Log dan Error Details:

The screenshot displays the Eclipse IDE interface with the 'Error Log' tab selected. The 'Workspace Log' section shows a list of error messages. The 'Event Details' window is open, providing a detailed view of the selected error.

**Workspace Log**

Message	Plug-in
Problems occurred when invoking code from plug-in: "org.eclipse.ui.workbench".	org.eclipse.ui.workbench
Cannot invoke "org.eclipse.ui.IWorkbenchPage.getActiveEditor()" because the return value of "org.ec	org.eclipse.e4.ui.workbench
Problems occurred when invoking code from plug-in: "org.eclipse.e4.ui.workbench".	org.eclipse.e4.ui.workbench
Cannot invoke "org.eclipse.ui.IWorkbenchPage.getActiveEditor()" because the return value of "org.ec	org.eclipse.e4.ui.workbench
Problems occurred when invoking code from plug-in: "org.eclipse.e4.ui.workbench".	org.eclipse.e4.ui.workbench
Cannot invoke "org.eclipse.ui.IWorkbenchPage.getActiveEditor()" because the return value of "org.ec	org.eclipse.e4.ui.workbench
Problems occurred when invoking code from plug-in: "org.eclipse.e4.ui.workbench".	org.eclipse.e4.ui.workbench
Problems occurred when invoking code from plug-in: "org.eclipse.ui.workbench".	org.eclipse.ui.workbench
Problems occurred when invoking code from plug-in: "org.eclipse.ui.workbench".	org.eclipse.ui.workbench
Problems occurred when invoking code from plug-in: "org.eclipse.ui.workbench".	org.eclipse.ui.workbench
Cannot invoke "org.eclipse.ui.IWorkbenchPage.getActiveEditor()" because the return value of "org.ec	org.eclipse.e4.ui.workbench
Problems occurred when invoking code from plug-in: "org.eclipse.e4.ui.workbench".	org.eclipse.e4.ui.workbench
Cannot invoke "org.eclipse.ui.IWorkbenchPage.getActiveEditor()" because the return value of "org.ec	org.eclipse.e4.ui.workbench
Problems occurred when invoking code from plug-in: "org.eclipse.e4.ui.workbench".	org.eclipse.e4.ui.workbench
Cannot invoke "org.eclipse.ui.IWorkbenchPage.getActiveEditor()" because the return value of "org.ec	org.eclipse.e4.ui.workbench
Problems occurred when invoking code from plug-in: "org.eclipse.e4.ui.workbench".	org.eclipse.e4.ui.workbench
Cannot invoke "org.eclipse.ui.IWorkbenchPage.getActiveEditor()" because the return value of "org.ec	org.eclipse.e4.ui.workbench
Problems occurred when invoking code from plug-in: "org.eclipse.e4.ui.workbench".	org.eclipse.e4.ui.workbench
Cannot invoke "org.eclipse.ui.IWorkbenchPage.getActiveEditor()" because the return value of "org.ec	org.eclipse.e4.ui.workbench
Problems occurred when invoking code from plug-in: "org.eclipse.e4.ui.workbench".	org.eclipse.e4.ui.workbench
Cannot invoke "org.eclipse.ui.IWorkbenchPage.getActiveEditor()" because the return value of "org.ec	org.eclipse.e4.ui.workbench
Problems occurred when invoking code from plug-in: "org.eclipse.e4.ui.workbench".	org.eclipse.e4.ui.workbench

**Event Details**

Plug-in: org.eclipse.e4.ui.workbench  
Severity: Error  
Date: 04/08/2025, 14:27:33.939  
Message: Problems occurred when invoking code from plug-in: "org.eclipse.e4.ui.workbench".

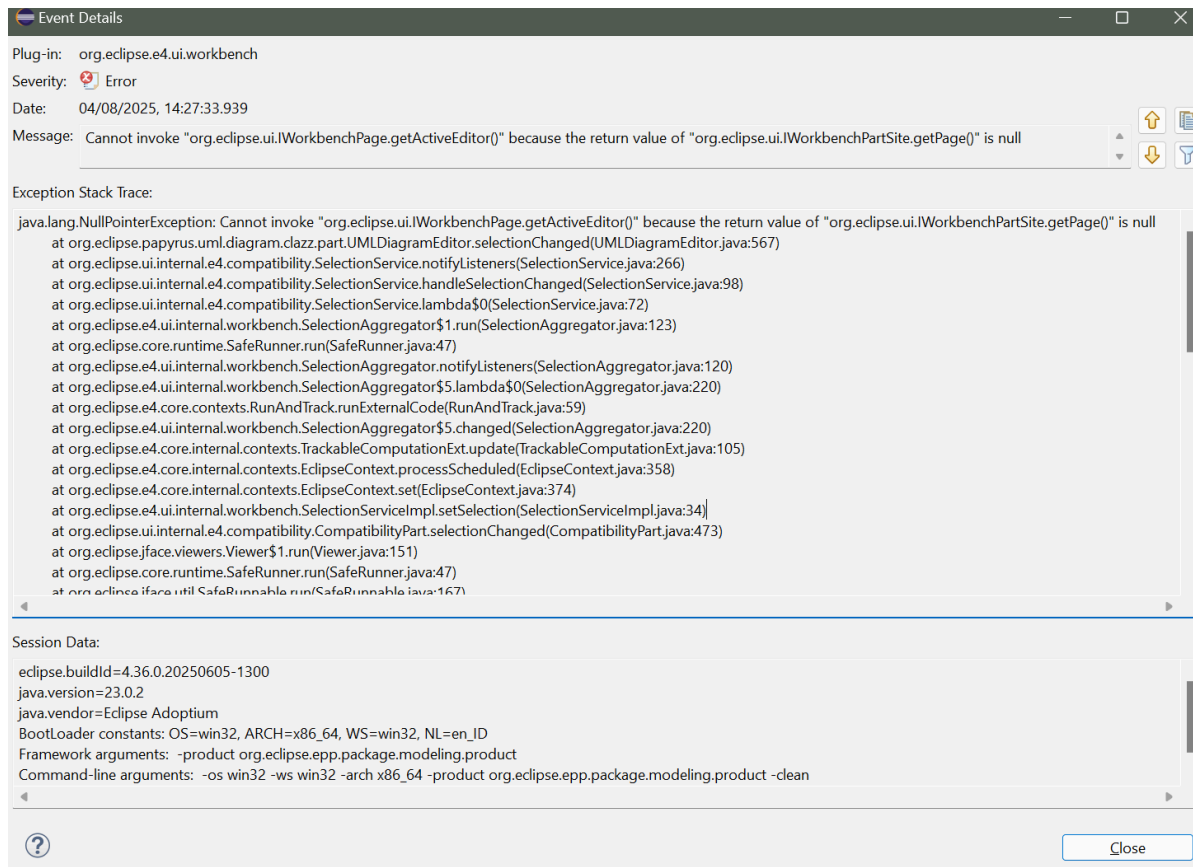
**Exception Stack Trace:**

```
java.lang.NullPointerException: Cannot invoke "org.eclipse.ui.IWorkbenchPage.getActiveEditor()" because the return value of "org.eclipse.ui.IWorkbenchPartSite.getPage()" is null
    at org.eclipse.papyrus.uml.diagram.clazz.part.UMLDiagramEditor.selectionChanged(UMLDiagramEditor.java:567)
    at org.eclipse.ui.internal.e4.compatibility.SelectionService.notifyListeners(SelectionService.java:266)
    at org.eclipse.ui.internal.e4.compatibility.SelectionService.handleSelectionChanged(SelectionService.java:98)
    at org.eclipse.ui.internal.e4.compatibility.SelectionService.lambda$0(SelectionService.java:72)
    at org.eclipse.e4.ui.internal.workbench.SelectionAggregator$1.run(SelectionAggregator.java:123)
    at org.eclipse.core.runtime.SafeRunner.run(SafeRunner.java:47)
    at org.eclipse.e4.ui.internal.workbench.SelectionAggregator.notifyListeners(SelectionAggregator.java:120)
    at org.eclipse.e4.ui.internal.workbench.SelectionAggregator$5.lambda$0(SelectionAggregator.java:220)
    at org.eclipse.e4.core.contexts.RunAndTrack.runExternalCode(RunAndTrack.java:59)
    at org.eclipse.e4.ui.internal.workbench.SelectionAggregator$5.changed(SelectionAggregator.java:220)
    at org.eclipse.e4.core.internal.contexts.TrackableComputationExt.update(TrackableComputationExt.java:105)
    at org.eclipse.e4.core.internal.contexts.EclipseContext.processScheduled(EclipseContext.java:358)
    at org.eclipse.e4.core.internal.contexts.EclipseContext.set(EclipseContext.java:374)
    at org.eclipse.e4.ui.internal.workbench.SelectionServiceImpl.setSelection(SelectionServiceImpl.java:34)
    at org.eclipse.ui.internal.e4.compatibilityPart.selectionChanged(CompatibilityPart.java:473)
    at org.eclipse.jface.viewers.Viewer$1.run(Viewer.java:151)
    at org.eclipse.core.runtime.SafeRunner.run(SafeRunner.java:47)
    at org.eclipse.jface.util.SafeRunnable.run(SafeRunnable.java:167)
```

**Session Data:**

```
eclipse.buildId=4.36.0.20250605-1300
java.version=23.0.2
java.vendor=Eclipse Adoptium
BootLoader constants: OS=win32, ARCH=x86_64, WS=win32, NL=en_ID
Framework arguments: -product org.eclipse.epp.package.modeling.product
Command-line arguments: -os win32 -ws win32 -arch x86_64 -product org.eclipse.epp.package.modeling.product -clean
```

Close



Kemudian, dilakukan beberapa hal dalam usaha menangani error:

- Melakukan cleaning untuk flush plugin caches dengan melakukan langkah berikut:

1. Close eclipse
2. Buka properties dari eclipse
3. Pada bagian Target, tambahkan “ -clean” sehingga Target menjadi “/path/ -clean”
4. Open eclipse

- Reset Perspective dengan melakukan langkah berikut:

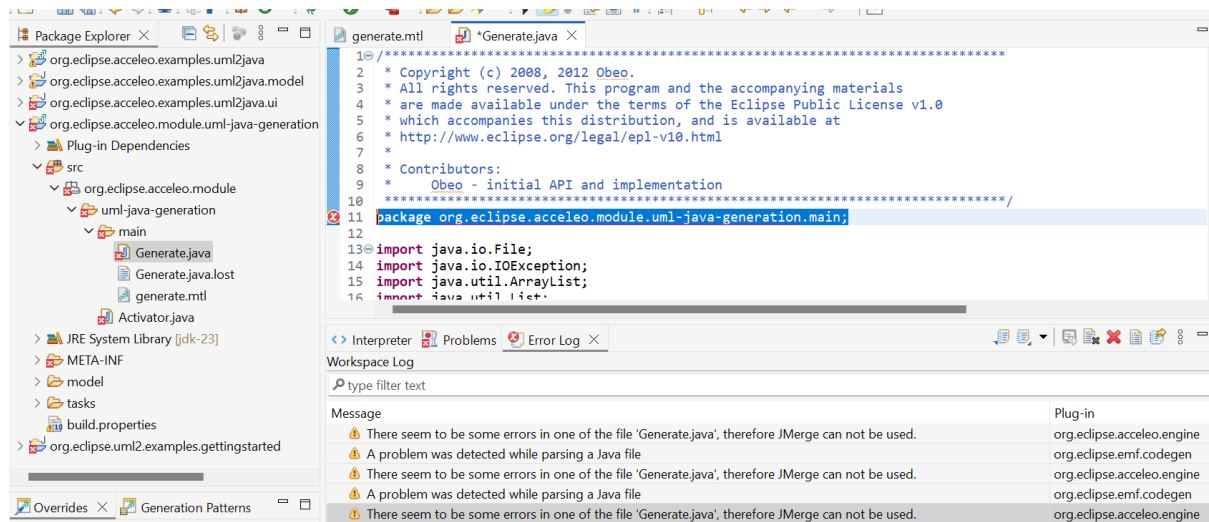
1. Pada eclipse, memilih Window > Perspective > Reset Perspective
2. Konfirmasi reset ke default settings
3. Membuka kembali Properties dengan Window > Show View > Other > General > Properties

Walaupun, sudah melakukan langkah yang diatas beberapa kali masih saja setiap menekan tombol apapun di eclipse maka error yang sama akan muncul. Karena error dengan pop up message yang tetap muncul tersebut tidak menghentikan pengerjaan bagian lainnya, maka error pop up message akhirnya diabaikan selagi melanjutkan pengerjaan lainnya.

Setelah dilakukan restart eclipse dan clean project beberapa kali dalam proses pengerjaan bagian lainnya, akhirnya error tersebut berhenti sendiri ditandai dengan tidak ada error pop up message dan tidak ada error tersebut di Error Log.

### b. Error dalam generate Java file

Error muncul pada Activator.java, MANIFEST.MF, dan Generate.java. Berikut bisa dilihat pada baris 11 pada Generate.java terdapat error dimana package tidak terdeteksi:



Oleh karena itu, melakukan pengecekan dan perbaikan pada settings dan configurations dengan asumsi error muncul dari situ. Setelah mencoba memahami mengapa quick fixes memberi saran berupa “`org.eclipse.acceleo.module.uml`”, maka ditemukan ternyata kesalahannya terletak pada penamaan project yaitu “`uml-java-generation`” dimana penggunaan hypens (-) merupakan java identifier yang tidak valid. Dengan demikian, refactor rename project menjadi “`uml_java_generation`” membuat error tidak muncul kembali dan generate Java file berhasil dijalankan.