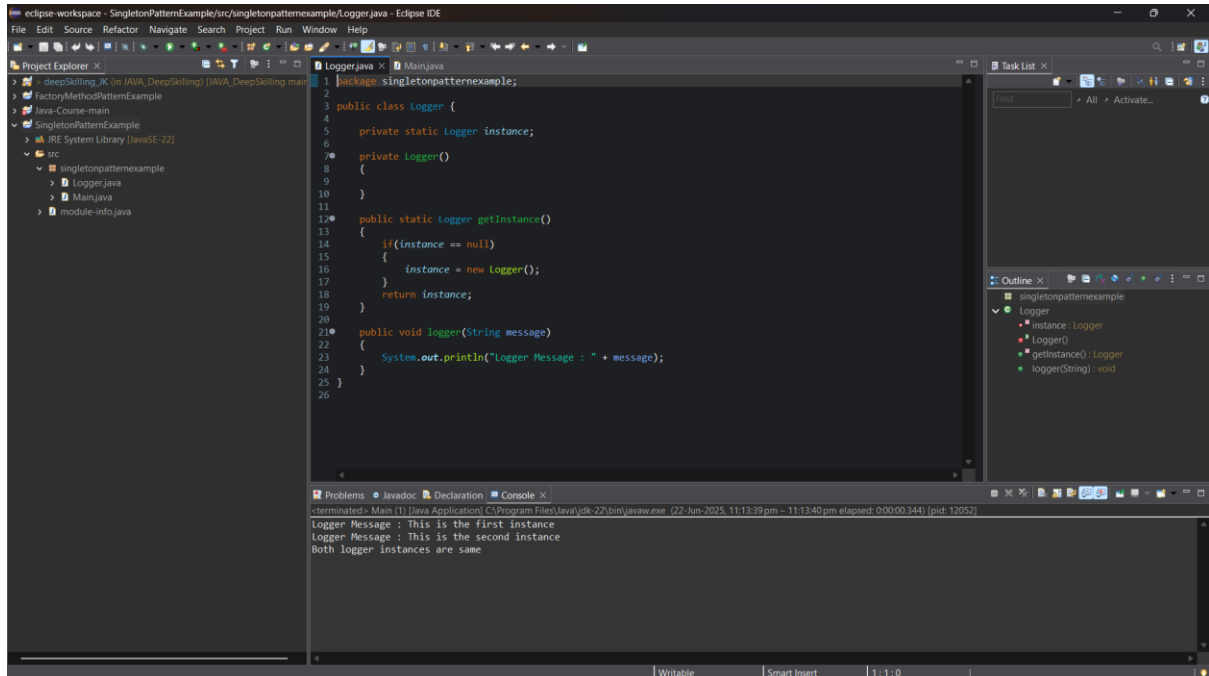


Week - 1

Implementing the Singleton Pattern

Logger.java



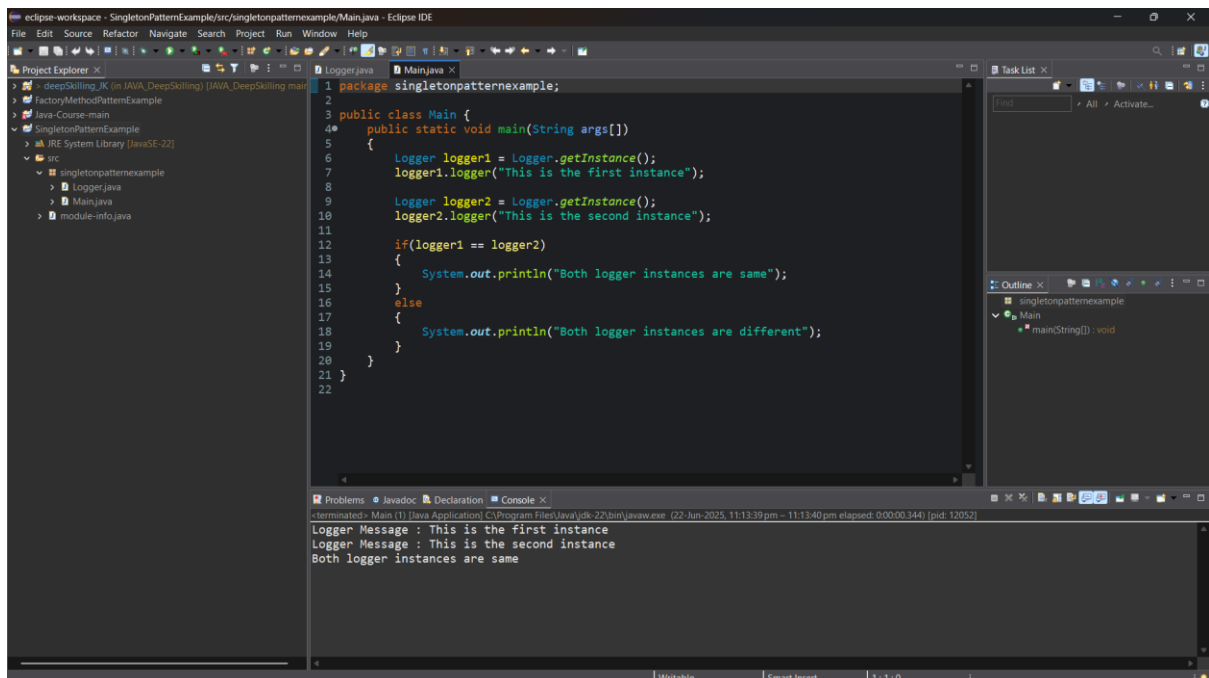
The screenshot shows the Eclipse IDE with the Logger.java file open. The code implements the Singleton pattern for a Logger class. The console output shows the results of running the application, demonstrating that only one instance of the Logger is created and used.

```
1 package singletonpatternexample;
2
3 public class Logger {
4     private static Logger instance;
5
6     private Logger() {
7     }
8
9     public static Logger getInstance() {
10        if(instance == null) {
11            instance = new Logger();
12        }
13        return instance;
14    }
15
16    public void logger(String message) {
17        System.out.println("Logger Message : " + message);
18    }
19 }
20
21
22
23
24
25
26
```

Console Output:

```
<terminated> Main (1) [Java Application] C:\Program Files\Java\jdk-22\bin\javaw.exe (22-Jun-2025, 11:13:39 pm - 11:13:40 pm elapsed: 0:00:00.344) [pid: 12052]
Logger Message : This is the first instance
Logger Message : This is the second instance
Both logger instances are same
```

Main.java



The screenshot shows the Eclipse IDE with the Main.java file open. The code demonstrates the use of the Singleton Logger class. The console output shows the results of running the application, demonstrating that only one instance of the Logger is created and used.

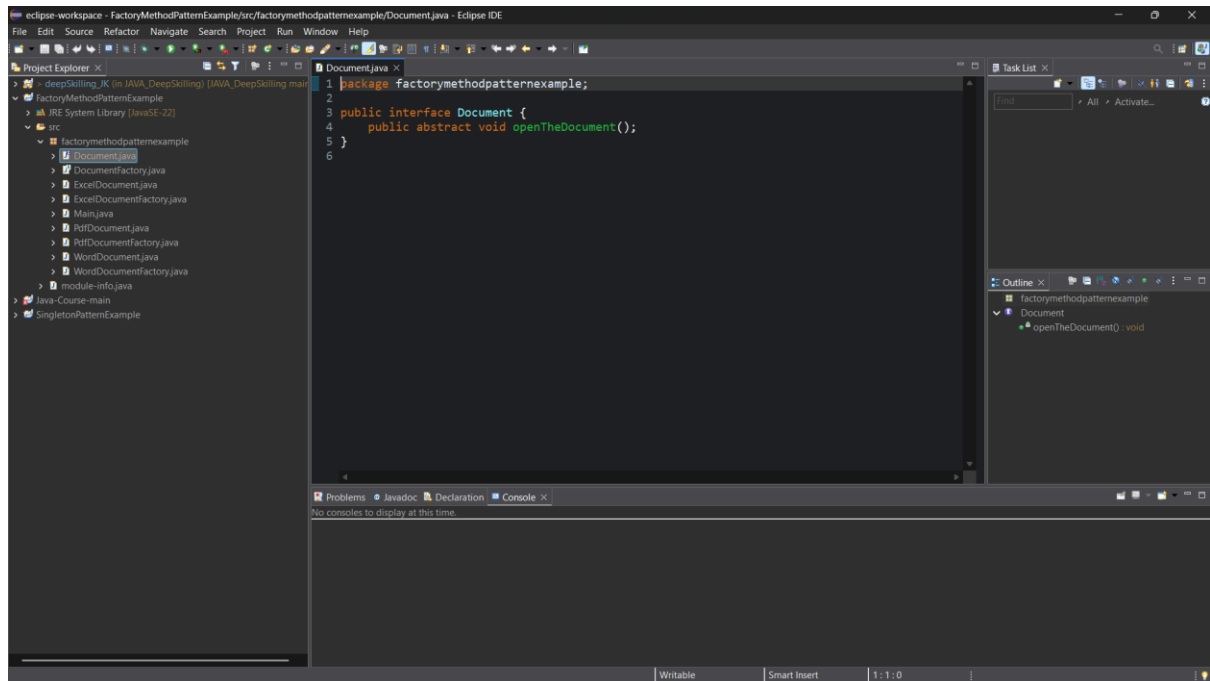
```
1 package singletonpatternexample;
2
3 public class Main {
4     public static void main(String args[]) {
5         Logger logger1 = Logger.getInstance();
6         logger1.logger("This is the first instance");
7
8         Logger logger2 = Logger.getInstance();
9         logger2.logger("This is the second instance");
10
11         if(logger1 == logger2) {
12             System.out.println("Both logger instances are same");
13         } else {
14             System.out.println("Both logger instances are different");
15         }
16     }
17 }
18
19
20
21
22
```

Console Output:

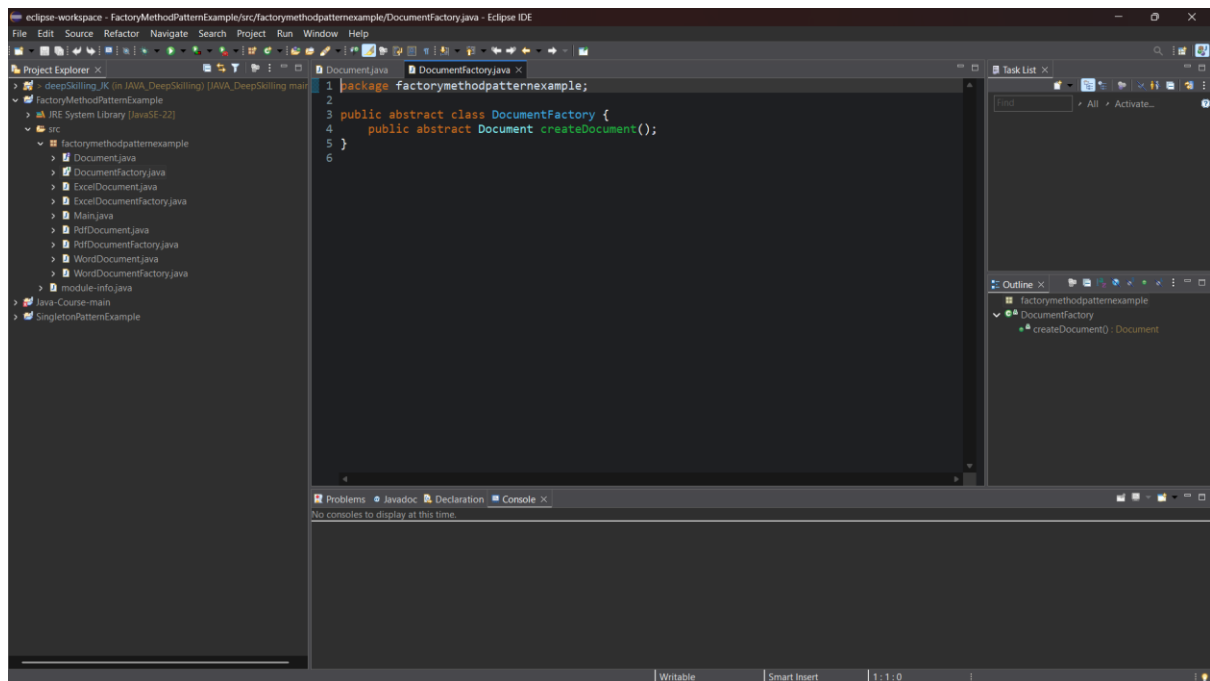
```
<terminated> Main (1) [Java Application] C:\Program Files\Java\jdk-22\bin\javaw.exe (22-Jun-2025, 11:13:39 pm - 11:13:40 pm elapsed: 0:00:00.344) [pid: 12052]
Logger Message : This is the first instance
Logger Message : This is the second instance
Both logger instances are same
```

Implementing the Factory Method Pattern

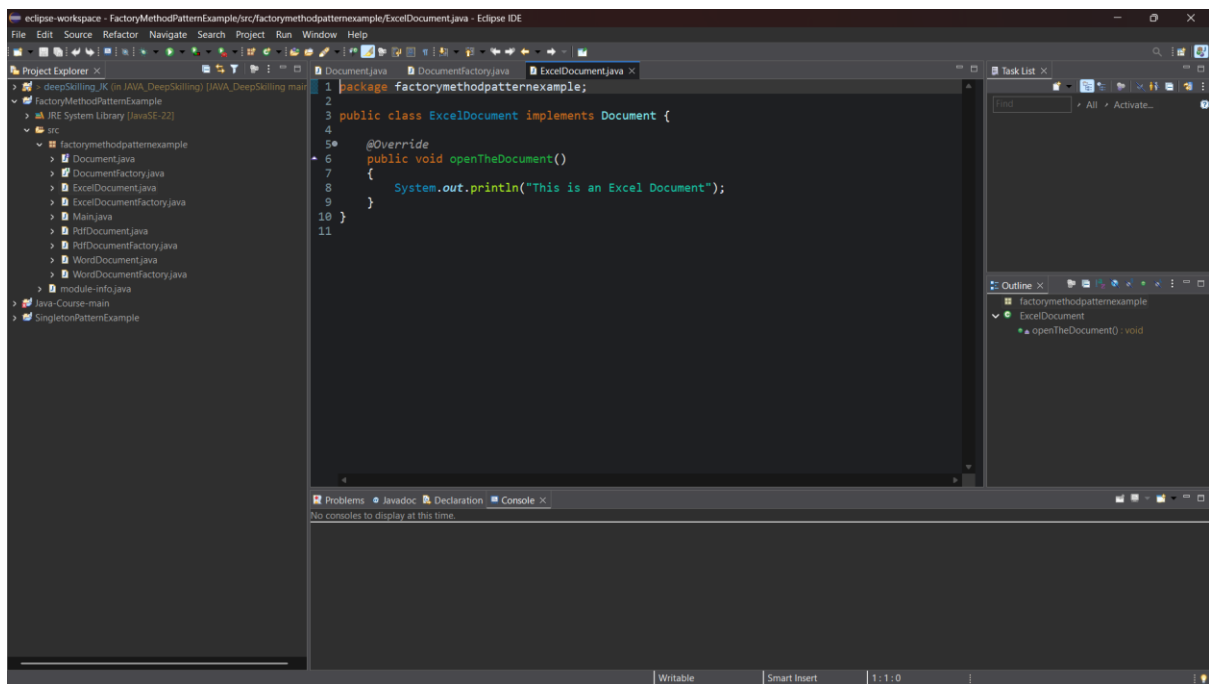
Document.java



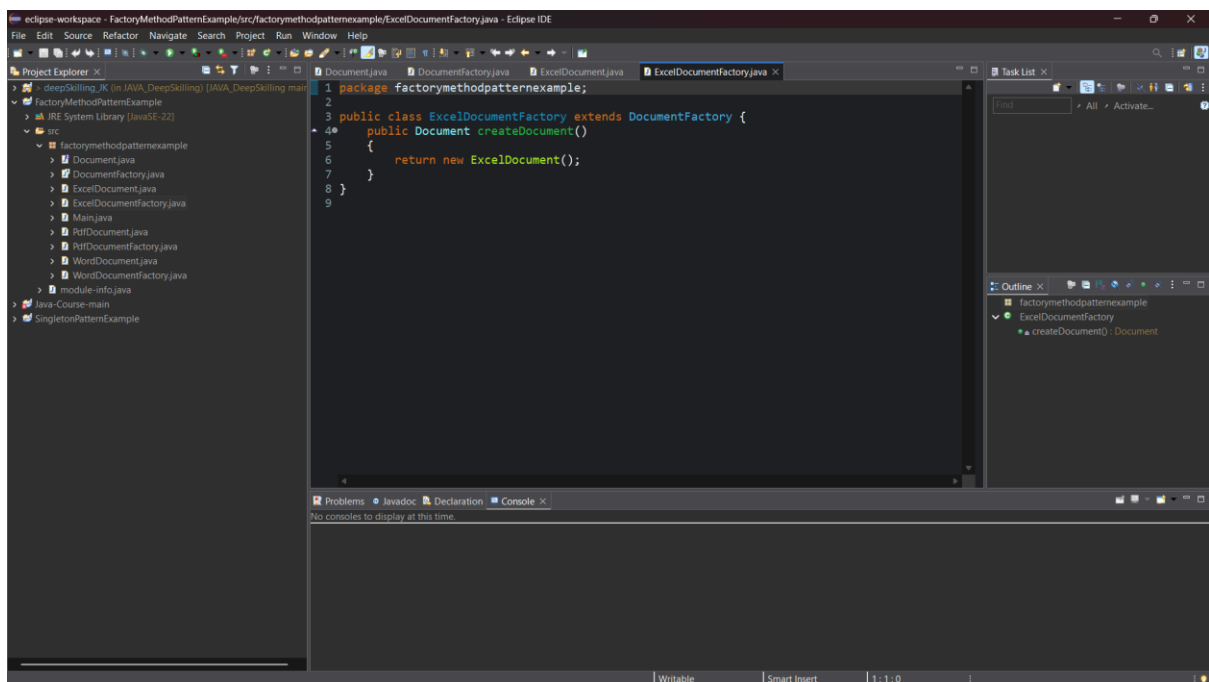
DocumentFactory.java



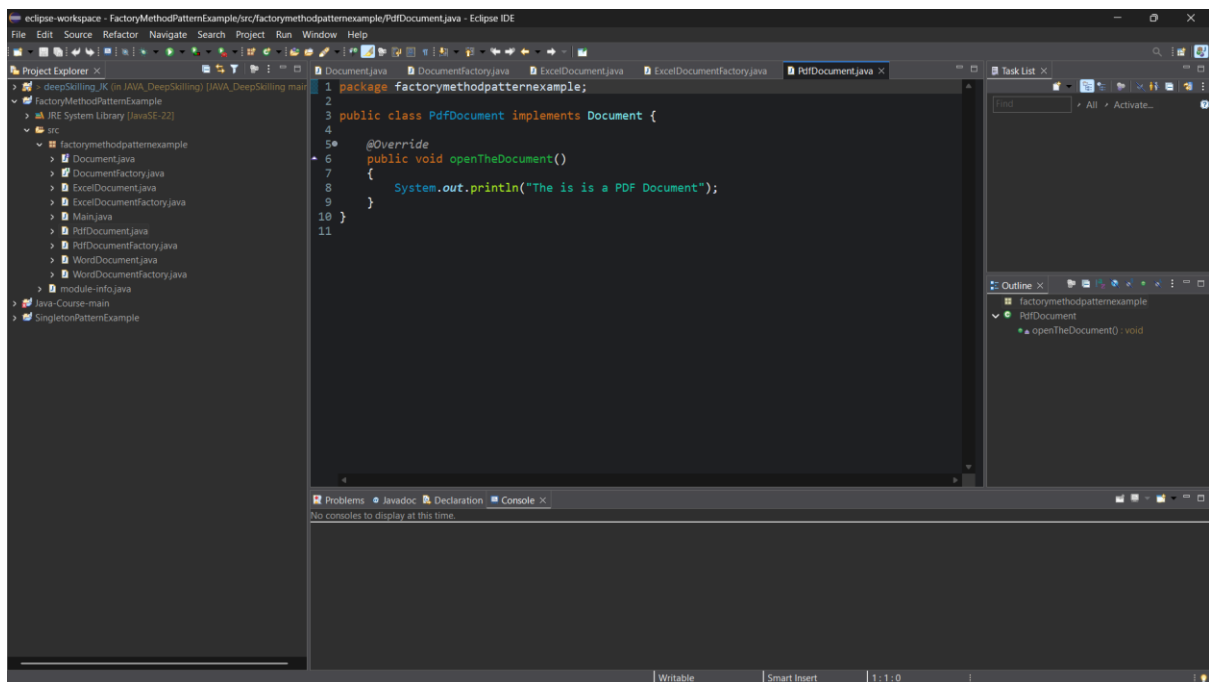
ExcelDocument.java



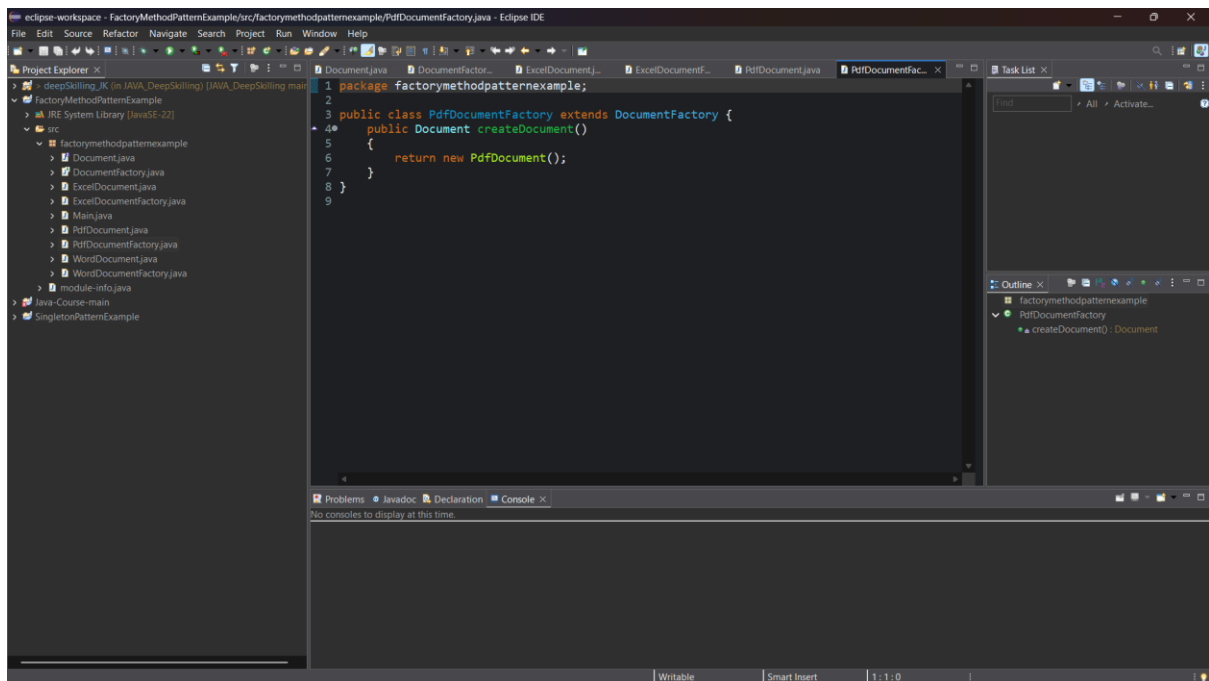
ExcelDocumentFactory.java



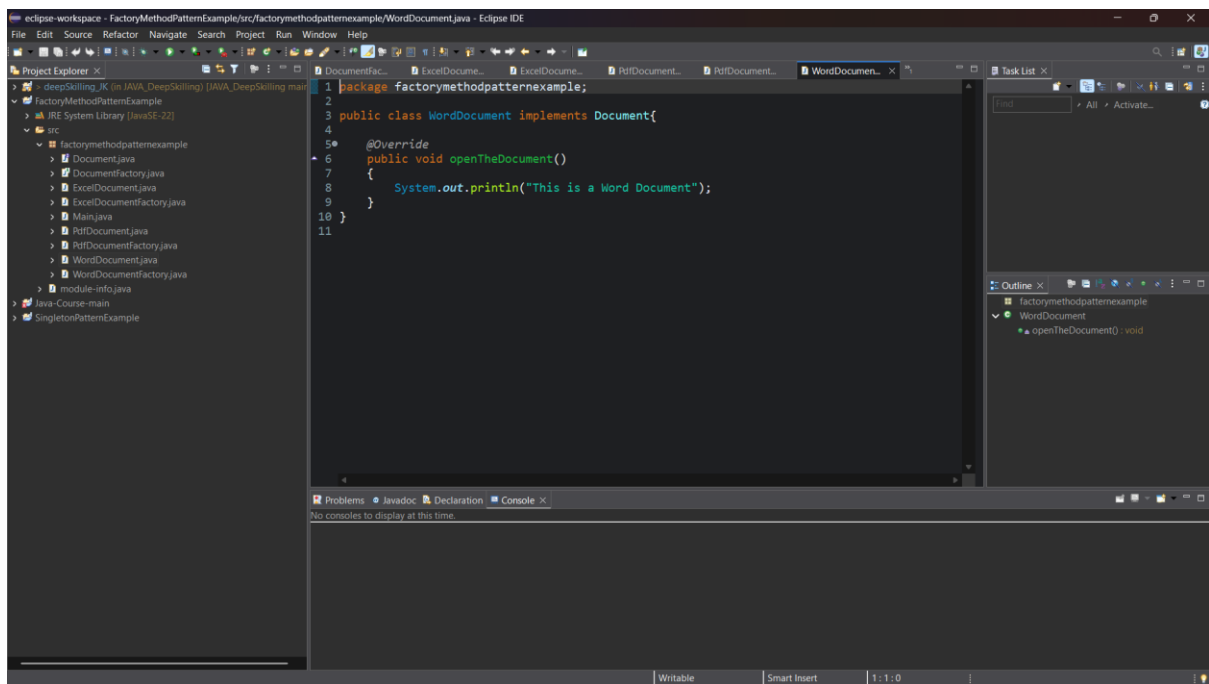
PdfDocument.java



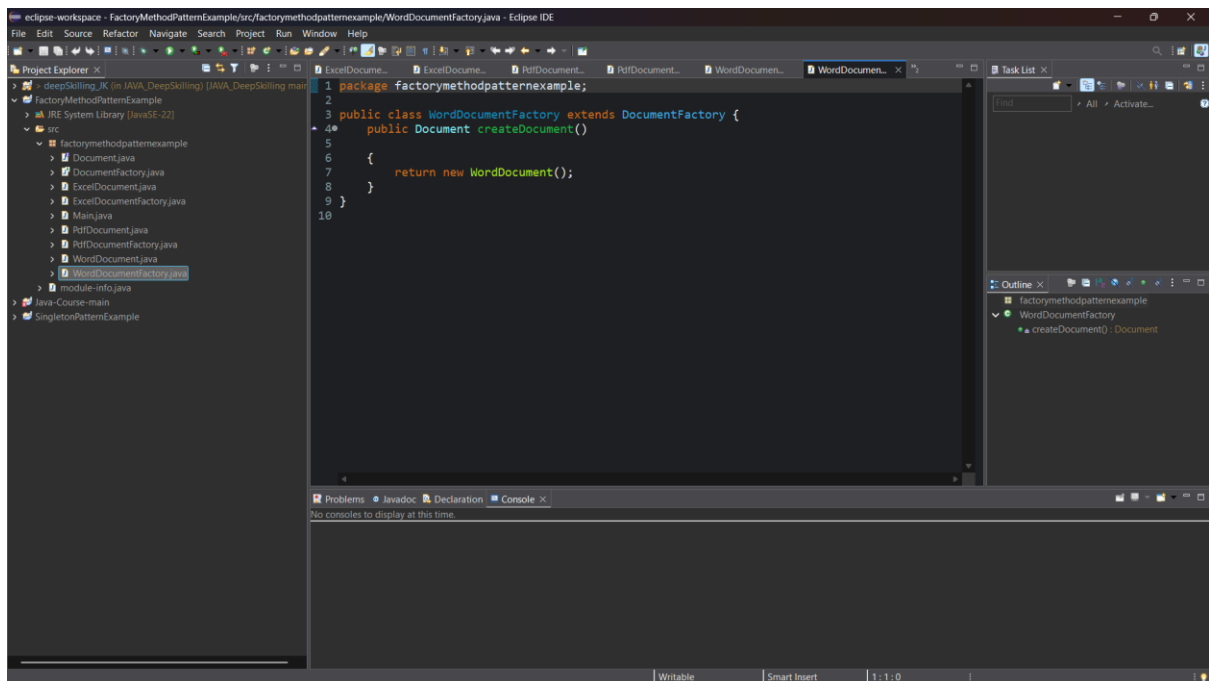
PdfDocumentFactory.java



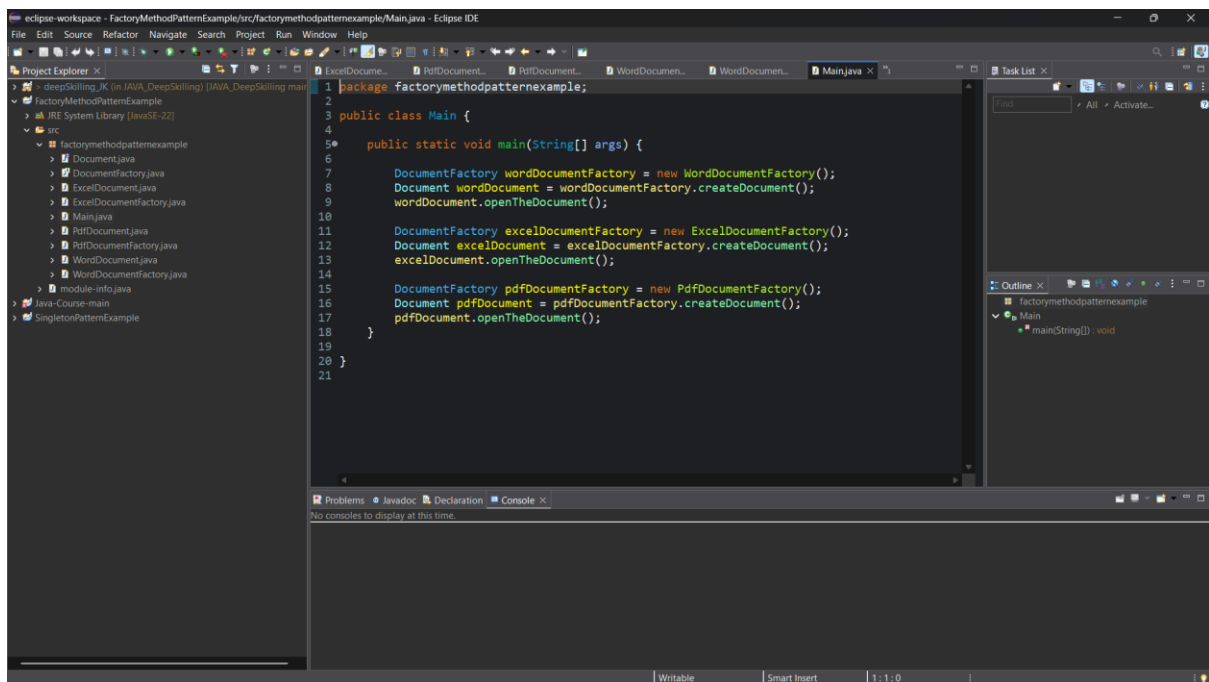
WordDocument.java



WordDocumentFactory.java



Main.java



Output

