**WEEK 1**

**DESIGN PATTERN AND PRINCIPLES**

**Exercise 2: Implementing the Factory Method Pattern**

**Scenario:**

You are developing a document management system that needs to create different types of documents (e.g., Word, PDF, Excel). Use the Factory Method Pattern to achieve this.

**Code:**

public class Main {

interface Document {

void open();

}

static class WordDocument implements Document {

public void open() {

System.out.println("Opening Word Document...");

}

}

static class PdfDocument implements Document {

public void open() {

System.out.println("Opening PDF Document...");

}

}

static class ExcelDocument implements Document {

public void open() {

System.out.println("Opening Excel Document...");

}

}

abstract static class DocumentFactory {

public abstract Document createDocument();

}

static class WordFactory extends DocumentFactory {

public Document createDocument() {

return new WordDocument();

}

}

static class PdfFactory extends DocumentFactory {

public Document createDocument() {

return new PdfDocument();

}

}

static class ExcelFactory extends DocumentFactory {

public Document createDocument() {

return new ExcelDocument();

}

}

public static void main(String[] args) {

DocumentFactory wordFactory = new WordFactory();

Document word = wordFactory.createDocument();

word.open();

DocumentFactory pdfFactory = new PdfFactory();

Document pdf = pdfFactory.createDocument();

pdf.open();

DocumentFactory excelFactory = new ExcelFactory();

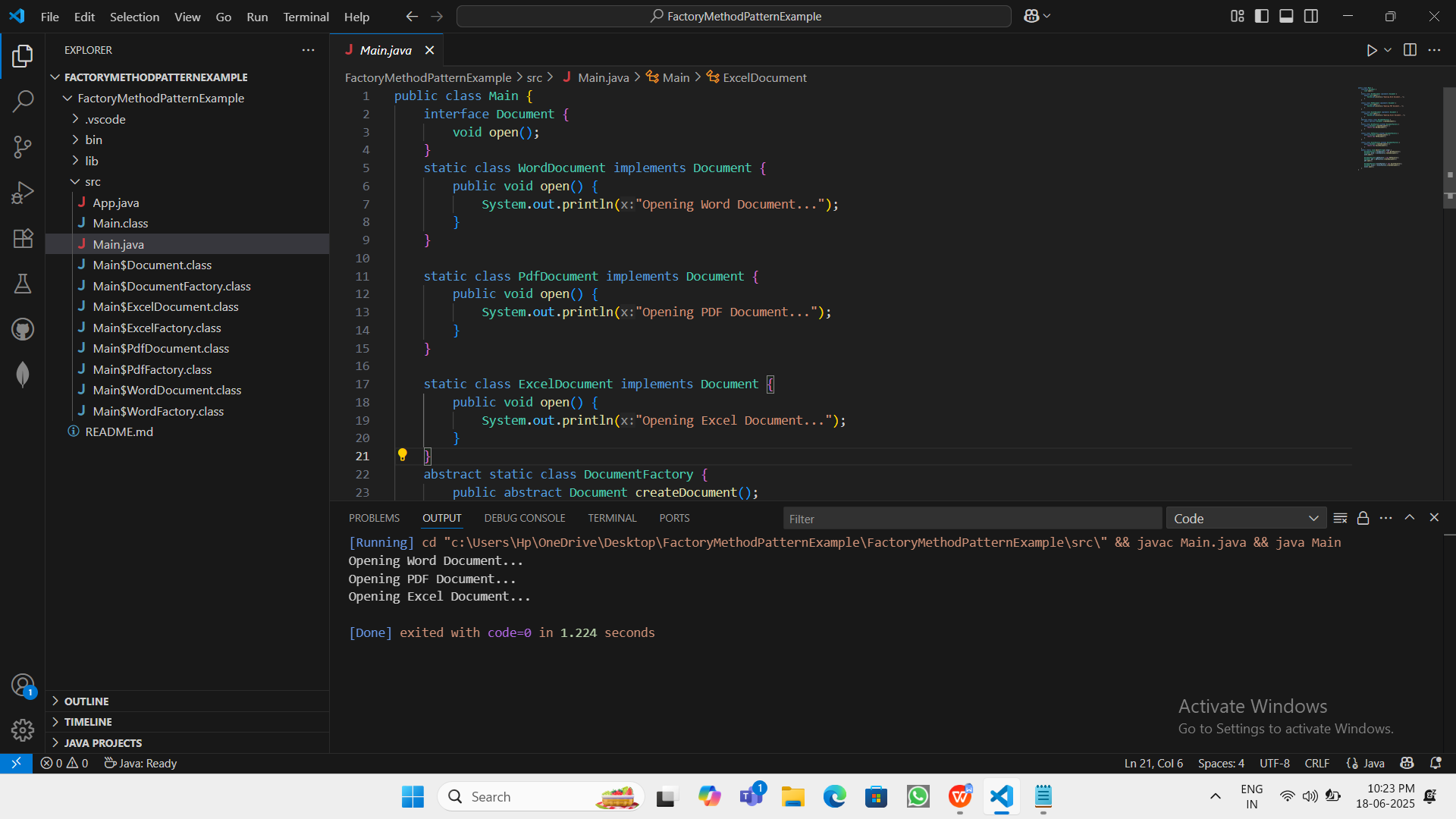
Document excel = excelFactory.createDocument();

excel.open();

}

}

**OUTPUT:**



Opening Word Document...

Opening PDF Document...

Opening Excel Document...