

SE 3313 Software Design and Architecture

Adapter Pattern

Lab 9

1 Context

The Adapter Pattern converts the interface of a class into another interface the clients expect. Adapter lets the classes work together that couldn't otherwise because of incompatible interfaces.

2 Problem Description

You are working on a document viewer application that currently supports reading and displaying only plain text files. The existing interface for reading text files is defined as follows:

```
public interface FileReader  
  
    String readFile(String filePath);
```

Now, your application needs to expand its capabilities to support reading Excel files (.xlsx) and JSON files (.json). The challenge is that the existing method signature, `readFile()`, must be used for both text, Excel, and JSON files to maintain consistency throughout the application.

Your task is to design an adapter class or classes to allow the application to read and display content from Excel and JSON files using the existing `FileReader` interface.

3 Measure of Success

You are expected to implement the necessary classes for this example using Adapter Pattern. You should call `readFile()` function in main. It must be used for both text, Excel, and JSON files to maintain consistency throughout the application. Note: You can use 3rd party API like Apache Poi, Jackson etc. for file read operation.