

CPIT- 252

Software Design Patterns

Group Project

Format Workshop

Java application

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Project idea

File format changer application

Description

a software that is responsible for changing a file format from one to another format the user specifies. The software can deal with many types of formats and more than one file types such as documents and images, as well as video files.

The program uses APIs to get the job of file conversions done, the program uses a total of 3 APIs which are:

- 1- ConvertAPI: an API that is responsible for converting files such as documents and images from one format to another, and then save it locally on the computer.
- 2- T-one YouTube converter API: an API that is responsible for fetching YouTube links and giving back an URL for downloading the file in mp3 or mp4.
- 3- Google YouTube API: an official API from google and it is responsible for giving back the YouTube video information by searching for it by name.

The program asks the user for which type of converter they want and depending on the answer the factory will make an object of the right class and use the right API and run the user through a series of prompts and questions to give the program the necessary arguments to successfully make an API request and then give a response back.

The response is usually given in json format, so some library is needed for deserializing the response to java. We used Jackson library to process the response and get the required information out of it.

Deliverables

A java program with an executable binary file

Patterns used

- 1- The Singleton creational design pattern: used in file logging to ensure all classes use the same Logger object and write in the same file.
- 2- Factory creational design pattern: used for creating objects based on user input in run time.
- 3- Adapter Structural design pattern: used for making the user get a YouTube video by searching with name instead of manually giving the API a YouTube URL
- 4- Façade Structural design pattern: used for making a lot of backend operations encapsulated from the user and done only with little user effort.
- 5- Template behavioral design pattern: used for making all classes that do the conversion operations follow the same procedures and steps.

Build instructions

There is a jar executable file that can be used to run the program, it is present inside the target directory under the name "FormatWorkshop-1.0-SNAPSHOT".

However. We recommend running it using the IntelliJ API as a maven project to make sure it runs without any errors.