

# Project 1 Report

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Overall:

## 1. Folder structure.

```
1 | └─ Q1.jar           // Question 1 executable file
2 | └─ Q2.jar           // Question 2 executable file
3 | └─ Sample           // Sample
4 |   └─ Q1
5 |     └─ audio1.wav
6 |       └─ audio2.wav
7 |         └─ Q2
8 |           └─ image1.tif
9 |             └─ image2.tif
10 |               └─ image3.tif
11 | └─ file_chooser.java // Main Class which implemented GUI and invoke two APIs from other two
12 |   └─ read_tif.class  java.
13 |   └─ read_tif.java   // Offer API which show tif picture (don't run it directly)
14 |   └─ read_wave.class
15 |     └─ read_wave.java // Offer API which show .wav file (don't run it directly)
```

## 2. Run

### a. Using command

```
1 | java file_chooser.java // Q1, Q2 using same GUI
```

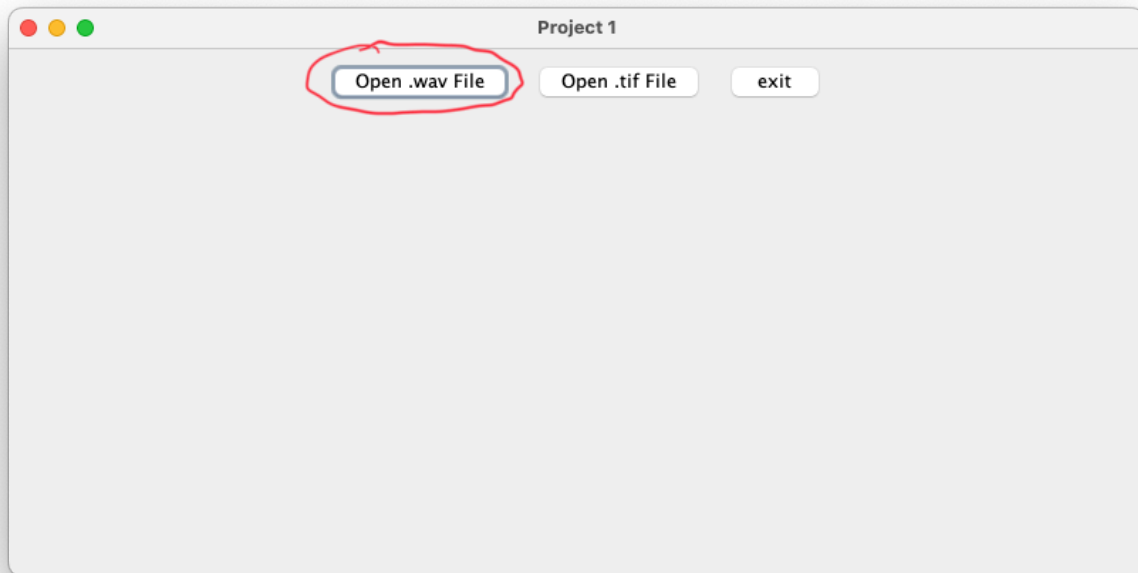
### b. Using .jar executable file (Q1.jar, Q2.jar)

## Q1 Explain:

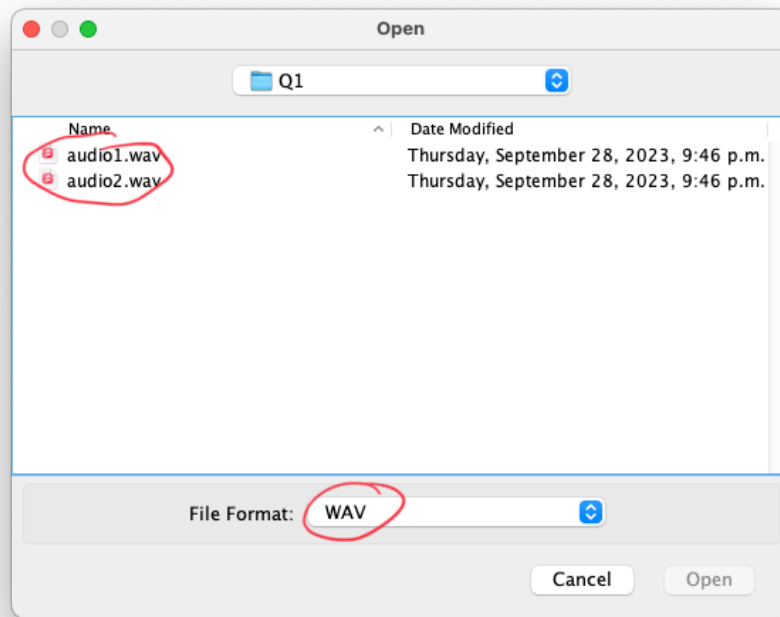
### 1. Using API:

```
1 // .wav read
2 import javax.sound.sampled.*;
3
4 // GUI
5 import java.awt.*;
6 import java.awt.event.ActionEvent;
7 import java.awt.event.ActionListener;
```

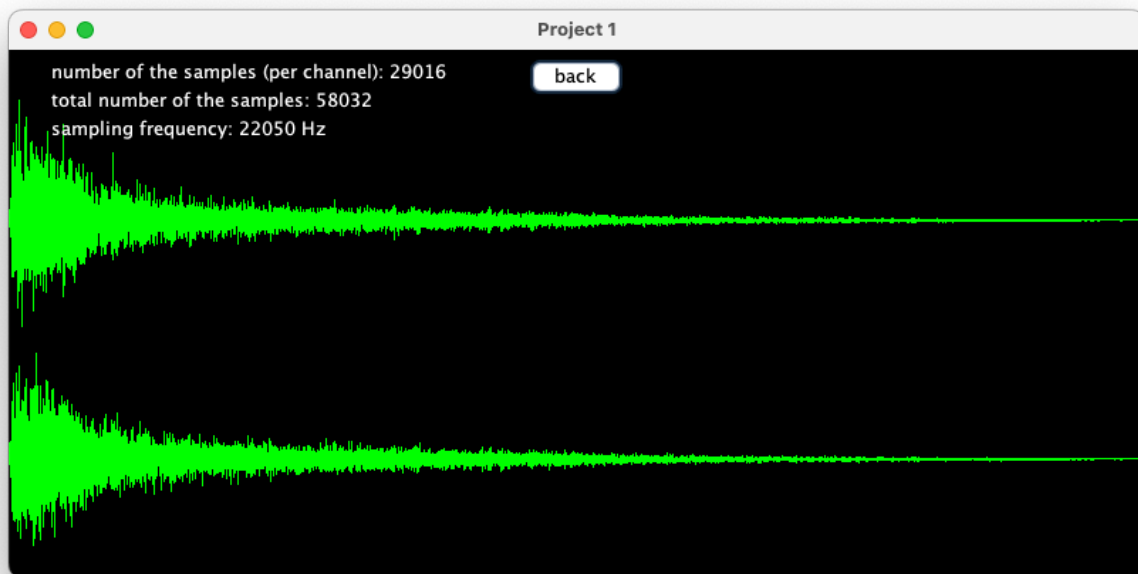
## 2. Screenshot:

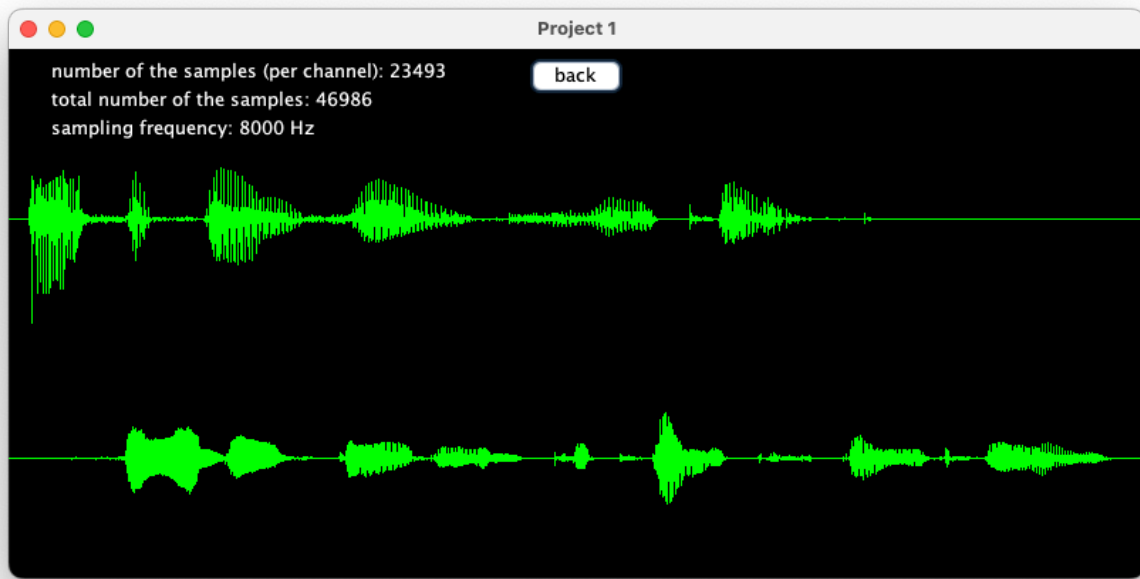


There is three button in starting page. (Open .wav, open .tif and exit). Exit will allow you to terminate the programe immediately.



This is open file dialogs which only allow you to choose .wav files. You can browser anywhere in your computer.





The back button allows you to go back the starting page and reopen other files (.wav and .tif)

## Q2 Explain:

### 1. Implement

#### 1.1.1 Write the parser by myself

I have just followed the guide written in the "Encyclopedia of Graphics File Formats" (Second ed.).

And get the coding\_order and every information in IFD (tags, include tag\_id, data\_type, data\_count and offset)

#### 1.1.2 Problem of tif parser

Cuz of the flexibility format of tif file which tag\_data\_offset (4 bytes) in tag structure can store both data and data offset.

The problem happened when the offset was storing data and the data was 2 bytes. In this case the useful information in tag\_data\_offset is only 2 bytes and the other 2 bytes will be the noise information which cause the result wrong.

So there are too many cases needed to be considered and is hard to adapt for every tiff. **So I didn't put my parser in GUI.** I just write a main function and let it print out each tags info.

### 1.2 Using existing libraries for GUI

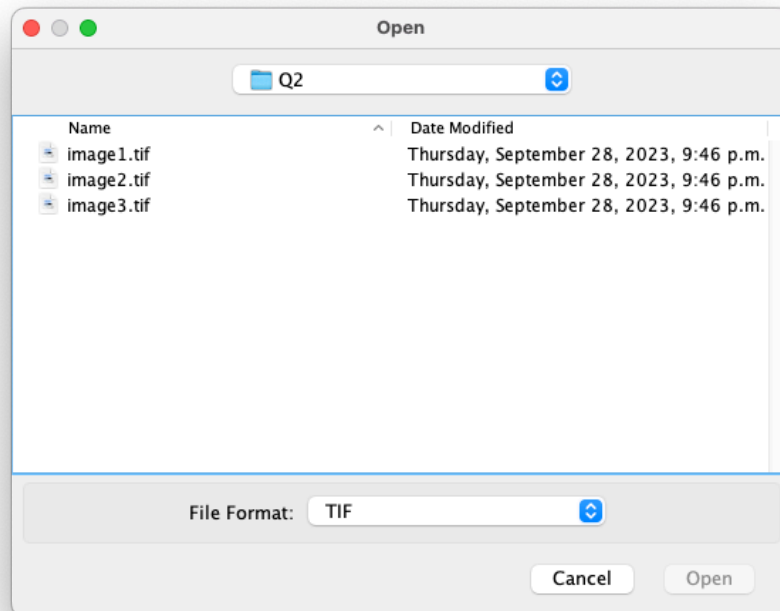
```
1 import java.awt.*;  
2 import javax.imageio.ImageIO;  
3  
4 image = ImageIO.read(new File(imagePath));  
5 g.drawImage(image, 0, 0, null);
```

## 2. Screenshot:

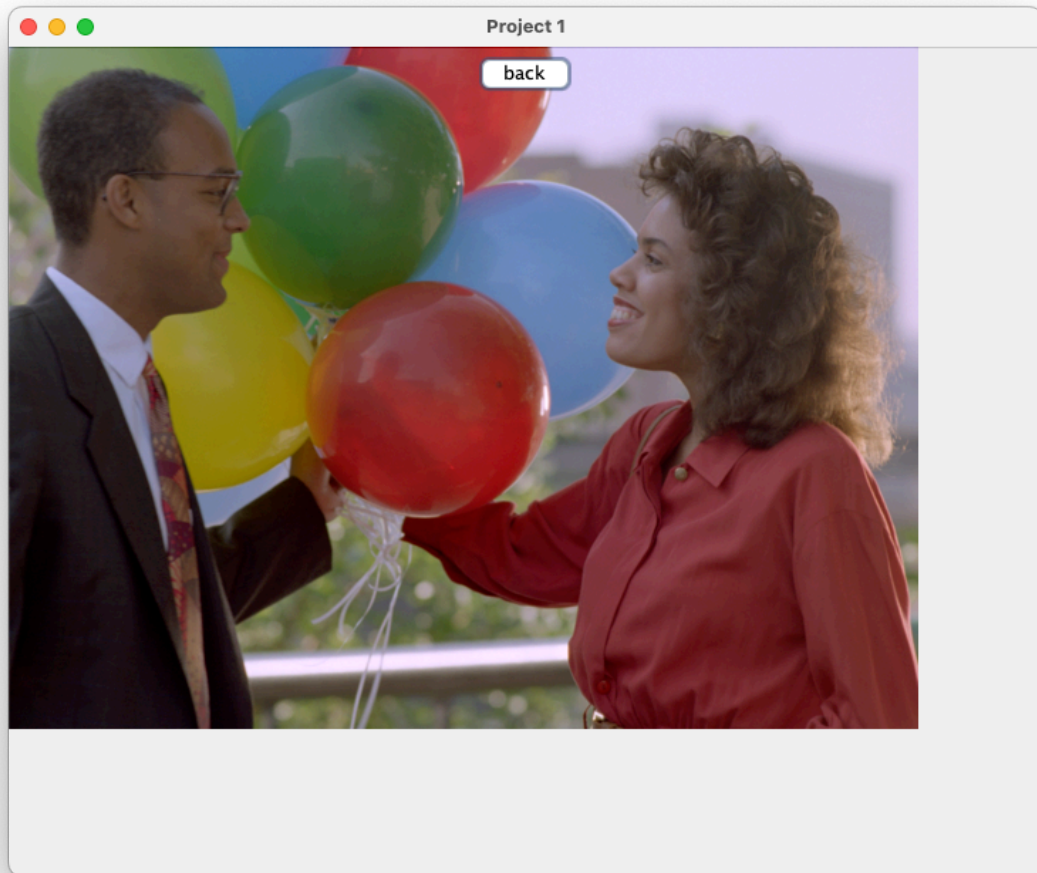
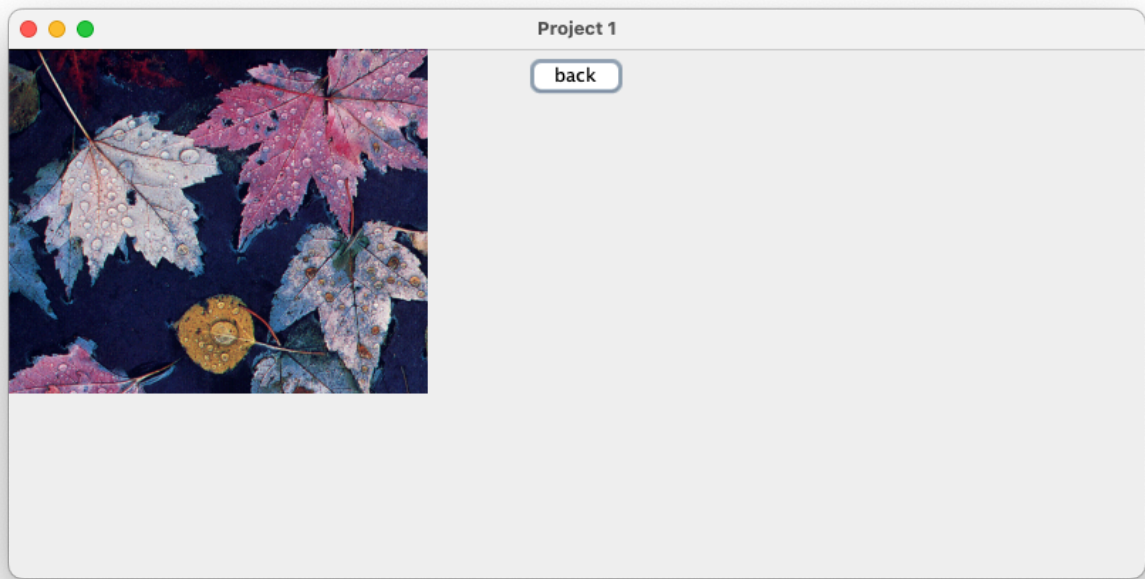
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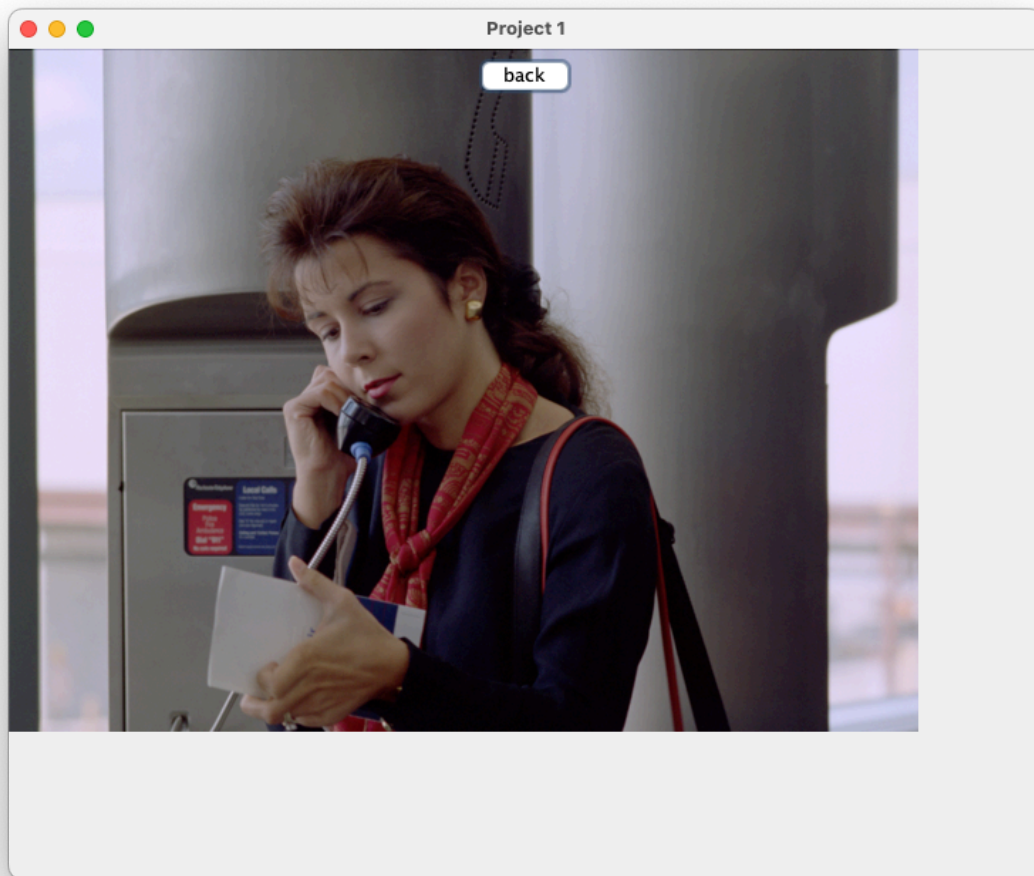


There is three button in starting page. (Open .wav, open .tif and exit). Exit will allow you to terminate the programe immediately.



This is open file dialogs which only allow you to choose .tif files. You can browser anywhere in your computer.





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