Criterion B: The Design

**External Types:**

The only things that need to be stored and accessible for the program to function are the playlist, which are stored as text files and the mp3 files. Each of the files is stored in their respective folder. The folders are then stored in the %appdata% which each windows user has. The program also supports Mac, where the folders are stored in the application support.

**Playlist**: The playlist text files just contain the song names and the title of the playlist file which is the name of the text file

Aba Daba Honeymoon.mp3

After the Ball.mp3

**Internal Types:**

The only thing stored in memory is a list of songs in the music folder. The list of all the titles of the music files would be stored in an array list and would be able to be accessed by all the other classes. Whenever a class such as All songs or view playlist needs to get information from the %appdata% a method is called giving them the information that they need.

**Modular Design**:

The whole program is separated into different classes each of the classes has its own JFrames and do different things.

**Main Menu:**  This is where the program first loads in and it contains the buttons for all the other classes.

**All Songs:** All Songs creates a new JFrame. The Frame shows the list of songs from the %appdata% music folder.

**Create Playlist:** When you click Create Playlist you will be able to add your own title for your own playlist and then using the same code from all songs you can select multiple songs and put them in a playlist. Once you click okay it will save it in the playlist folder in the %appdata%.

**View Playlist:** Clicking View Playlist will use the same code from All Songs but from a different folder called playlist.

**Add Songs:** Clicking Add Songs will open a JFileChooser which will allow you to select any of your own mp3 and add it to the music folder in the %appdata%

**Play Songs:** When you click play song in All songs it will start to play the music there is a button called shuffle which will call a method that will take in the array list and shuffle the music. There is also a button called a about song which will take the song that you are listening to and read the metadata and post the information about the mp3 file.

**Methods:**

**Mp3 Information:** This method takes in a path of a music file and then reads the metadata from the mp3 file and then returns a array full of information about the mp3 file.

**public** String[] getMp3Info(File file) **throws** UnsupportedAudioFileException, IOException {

AudioFileFormat fileFormat = AudioSystem.*getAudioFileFormat*(file);

String[] infoSong = **new** String[5];

**if** (fileFormat **instanceof** TAudioFileFormat) {

Map<?, ?> properties = ((TAudioFileFormat) fileFormat).properties();

String key = "duration";

Long microseconds = (Long) properties.get(key);

**int** mili = (**int**) (microseconds / 1000);

**int** sec = (mili / 1000) % 60;

**int** min = (mili / 1000) / 60;

String key\_author = "author";

String author = (String) properties.get(key\_author);

String key\_title = "title";

String title = (String) properties.get(key\_title);

String key\_album = "album";

String album = (String) properties.get(key\_album);

String key\_date = "date";

String date = (String) properties.get(key\_date);

infoSong[0] = title;

infoSong[1] = author;

infoSong[2] = min + ":" + sec;

infoSong[3] = album;

infoSong[4] = date;

} **else** {

**throw** **new** UnsupportedAudioFileException();

}

**return** infoSong;

}

**Testing**

In order to make sure that the program performs to its criteria these tests must be performed.

1. User can add songs – Add Songs multiple songs, and check that songs are added in all songs
2. In All songs user cannot click play or delete without selecting a song.- Check multiple time that clicking play or delete will result in a popup saying that “ You did not Select a Song!”
3. In Create Playlist if the user clicks the no button on the add title screen then it should back out of that process. – Check multiple times if you hit no then it will go back to the Main Menu.
4. Check when clicking next play pause or last it actually does what it is saying. Just play the music player and test.
5. Make sure that the about songs are actually contain correct information about the song. – using the internet check the information of each song.