# Design Overview for Custom Extended GUI Music Player

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# Summary of Program

An advanced music player which supports play/pause, track skipping, volume control, shuffle and looping features. It has a queue feature which allows users to select tracks from various albums to play immediately after the current track. It also allows users to view and curate their own playlists.

# Required Data Types

Describe each of the records and enumerations you will create using the following table (one per record).

Table : Album details

|  |  |  |
| --- | --- | --- |
| Field Name | Type | Notes |
| name | string |  |
| artist | string |  |
| cover | string | The path to the cover image file. |
| tracks | array of Tracks |  |

Table 2: Track details

|  |  |  |
| --- | --- | --- |
| Field Name | Type | Notes |
| name | string |  |
| artist | string |  |
| album | string |  |
| number | int | The track number. |
| cover | string | The path to the cover image file. |
| location | string | The path to the audio file. |

Table 3: AlbumGraphic details

|  |  |  |
| --- | --- | --- |
| Field Name | Type | Notes |
| x | int | The x coordinate of the top left corner. |
| y | int | The y coordinate of the top-left corner. |
| cover | Gosu::Image | The cover image. |
| name | Gosu::Image | The album name in the form of an image. This allows the text to look sharper. |
| artist | Gosu::Image | The album artist in the form of an image. This allows the text to look sharper. |

Table 4: TrackGraphic details

|  |  |  |
| --- | --- | --- |
| Field Name | Type | Notes |
| x | int | The x coordinate of the top left corner. |
| y | int | The y coordinate of the top left corner. |
| name | Gosu::Image | The name of the track in the form of an image. |
| artist | Gosu::Image | The name of the artist in the form of an image. |
| hovered\_on | Boolean | A flag indicating whether or not the track graphic is being hovered on. |

Table 5: PlayingTrack details

|  |  |  |
| --- | --- | --- |
| Field Name | Type | Notes |
| track | Gosu::Song | The song object that is currently playing. |
| cover | Gosu::Image | The cover image of the playing song. |
| name | Gosu::Image | The name of the playing track in the form of an image. |
| artist | Gosu::Image | The artist’s name in the form of an image. |
| album | Gosu::Image | The album name in the form of an image. |

Table 6: ZOrder details

|  |  |
| --- | --- |
| Value | Notes |
| 0 | BACKGROUND |
| 1 | UI |
| 2 | OVERLAY |

# Overview of Program Structure

Main functions used by the program:

read\_albums(file\_name)

Reads and returns an array of albums defined in a text file whose name is given by file\_name.

create\_album\_graphics(albums)

Returns an array of AlbumGraphics from an array of albums.

draw\_album\_graphics(graphics)

Draws each element in an album graphic array onto the screen.

mouse\_over\_album\_graphic(graphic, mouse\_x, mouse\_y)

Determines whether or not the mouse is over the given AlbumGraphic.

create\_track\_graphics(tracks)

Returns an array of TrackGraphics from an array of tracks.

draw\_track\_graphics(graphics)

Draws each element in a track graphic array onto the screen.

mouse\_over\_track\_graphic(graphic, mouse\_x, mouse\_y)

Determines whether or not the mouse is over the given TrackGraphic.

play\_track(track)

Plays the track given by “track” parameter and returns a PlayingTrack object containing the related Song and Image objects.

toggle\_track(playing\_track)

Resumes or pauses playback of the given playing track.

shuffle\_tracklist(tracklist)

Randomly shuffles an array of tracks given by tracklist.

unshuffle\_tracklist(tracklist)

Unshuffles an array of tracks given by tracklist.

draw\_controller\_buttons(paused, shuffled, looping)

Draw the icons to control playback of the track, whose appearance will be different based on the paused, shuffled and looping boolean parameters.