# SE 3313 Software Design and Architecture

Singleton Pattern

Lab 7

## 1 Context

The Singleton Pattern ensures a class has only one instance, and provides a global point of access to it.The Singleton pattern disables all other means of creating objects of a class except for the special creation method. This method either creates a new object or returns an existing one if it has already been created.

## 2 Problem Description

You are developing a music player application that allows users to play, pause, and navigate through their music library. The application needs to maintain a single point of control for managing the current playing state, playlist, and user preferences.

Requirements:

- Only one instance of the music player should exist throughout the application.

- The music player should be easily accessible from different parts of the application.

- Users should be able to control playback and manage their playlists seamlessly.

## 3 Measure of Success

You are expected to implement necessary classes for this example using Singleton Pattern. You should implement menu. In this menu, users can choose different options to interact with the music player, such as playing different audio formats, managing playlists, authenticating users, and logging events. The menu will continue to display until the user chooses to exit (option 0).

# 4 Example menu



Figure 1: