Sample Project

Requirements/Tasks

YouTube Channel and Playlist Management System

You are assigned the task of creating a Python program to manage a YouTube channel and its playlists. The system should allow users to add videos to playlists, display all playlists, search for specific playlists, and save/load the channel data to/from a file.

Requirements:

1. **Video Class:**
   - Create a **Video** class with the following attributes:
     - **title**: Title of the video (string).
     - **duration**: Duration of the video in seconds (integer).
     - **views**: Number of views the video has (integer).
   - Implement a **__str__** method to print the video information.

2. **Playlist Class:**
   - Create a **Playlist** class that will store a **list** of videos.
   - A Playlist will have the following attributes:
     - **playListName**: name of the playlist(string)
     - **plID**: a unique identifier for the list(integer)
   - Implement the following methods in the **Playlist** class:
     - **add_video(video)**: Add a video to the playlist.
     - **save_playlist_to_file(filename)**: Save the playlist data to a text file. Each line in the file should represent a video.
     - **load_playlist_from_file(filename)**: Load the playlist data from a text file.

3. **Channel Class:**
   - Create a **Channel** class that will store a **list** of playlists.
   - Implement the following methods in the **Channel** class:
     - **add_playlist(playlist)**: Add a playlist to the channel.
     - **display_playlists()**: Display information for all playlists in the channel.
     - **search_playlist(name)**: Search for a playlist by name and return the playlist object. If the name is not found it should return Null, The playlist name passed to the function is not case-sensitive.

4. Test your code:
   - Ask the user to enter information for 3 videos
   - Create 3 videos.
   - Create 2 playlists, add the first 2 videos to the first one and the 3rd video to the second one.
   - Save the first playlist to a file titled yourname_id.txt.
   - Create a Channel
   - Add the 2 playlists to the Channel.
   - Display all playlist in the Channel.
   - Search for playlist by name