

Description:

Develop a MelodyMix Manager system in Java, aimed at managing playlists of music tracks. The system provides essential functionalities for organizing music collections efficiently. Key features include:

1. Storage for Songs
2. Add Songs to Playlist
3. Remove Songs from Playlist
4. Print Playlist Information

Structure

1. Song:

- Represents an individual music track within the MelodyMix Manager system.
- Contains attributes for storing information about the song, including its title and artist.

2. MelodyMixManager:

- Acts as the core component responsible for managing playlists of music tracks.
- Utilizes a List data structure to store playlists, each comprising multiple songs.
- Provides methods for adding new songs to playlists, removing songs from playlists, and printing playlist information.

3. LibraryTester:

- Functions as the testing class for the MelodyMix Manager system.
- Contains a main method to validate the functionalities of the MelodyMixManager class.

class song:

string - title

string - artist

class PlailistManager:

List storage

void addSong(Song song)

boolean removeSong(Song song)

void printPlaylists()

Class Song

The class Book should have several fields, including title and artist. This class can be implemented in the following way:

```
package musiclibrary;

import java.util.ArrayList;
import java.util.List;

public class Song {
    private String title, artist;

    public String getTitle() {
```

```

        return title;
    }

    public void setTitle(String title) {
        this.title = title;
    }

    public String getArtist() {
        return artist;
    }

    public void setArtist(String artist) {
        this.artist = artist;
    }
}

```

Class PlaylistManager

Acts as the core component responsible for managing playlists of music tracks. Utilizes a List data structure to store playlists, each comprising multiple songs. Provides methods for adding new songs to playlists, removing songs from playlists, and printing playlist information.

```

package musiclibrary;

import java.util.ArrayList;
import java.util.List;

public class PlaylistManager {
    private List playlists = new ArrayList<>();

    public void createPlaylist(Song song) {
        playlists.add(song);
    }

    public boolean removeSongFromPlaylist(Song song) {
        boolean removed = false;
        for (int i = 0; i < playlists.size(); i++) {
            Song s = playlists.get(i);
            if (s.getTitle().equals(song.getTitle()) && s.getArtist().equals(song.getArtist())) {
                playlists.remove(i);
                removed = true;
                break;
            }
        }
        return removed;
    }

    public void printPlaylists() {
        if (playlists.isEmpty()) {
            System.out.println("No playlists available.");
        } else {
            for (Song s : playlists) {
                System.out.println(s.getArtist() + ", " + s.getTitle());
                System.out.println();
            }
        }
    }
}

```

LibraryTester class

Functions as the testing class for the MelodyMix Manager system. Contains a main method to validate the functionalities of the MelodyMixManager class.

```

package musiclibrary;

public class LibraryTester {

```

```
public static void main(String[] args) {  
    Song song1 = new Song();  
    song1.setTitle("God's Menu");  
    song1.setArtist("Stray Kids");  
  
    Song song2 = new Song();  
    song2.setTitle("1, 2, 3, 4, 5");  
    song2.setArtist("Han");  
  
    PlaylistManager playlistManager = new PlaylistManager();  
    playlistManager.createPlaylist(song1);  
    playlistManager.createPlaylist(song2);  
    playlistManager.removeSongFromPlaylist(song1);  
    playlistManager.printPlaylists();  
}
```

We print the state of the music library to check if all the methods are working properly.