PRN No. : 124B2B012

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Title: Consider the playlist in a music player. Implement a playlist feature in music player application using singly linked list. Each song in the playlist is represented as a node in the linked list. Each node contains information about the song (such as title or artist or duration, etc.). The playlist should allow users to:

a. Add songs

b. Remove songs

c. Display the entire playlist

d. Play specific songs

Code:

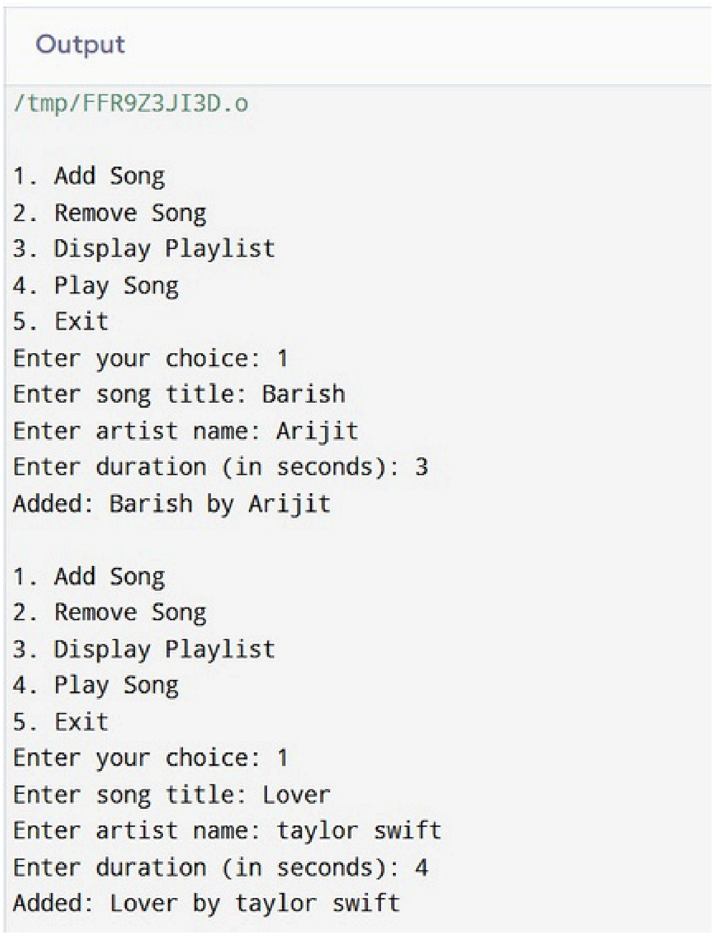
```
#include <iostream>
#include <string>


class Song
{
private:
    std::string title;
    std::string artist;
    int duration;
    Song* next;


public:
    Song(std::string title1, std::string artist1, int d)
        : title(title1), artist(artist1), duration(d), next(nullptr) {}


    std::string getTitle() const { return title; }
    std::string getArtist() const { return artist; }
    int getDuration() const { return duration; }
```

```cpp
    Song* getNext() const { return next; }
    void setNext(Song* nextSong) { next = nextSong; }
};

class Playlist
{
private:
    Song* head;

public:
    Playlist() : head(nullptr) {}

    void addSong(std::string title, std::string artist, int duration)
    {
        Song* newSong = new Song(title, artist, duration);
        if (!head)
        {
            head = newSong;
        }
        else
        {
            Song* temp = head;
            while (temp->getNext())
            {
                temp = temp->getNext();
            }
            temp->setNext(newSong);
        }
        std::cout << "Added: " << title << " by " << artist << std::endl;
```

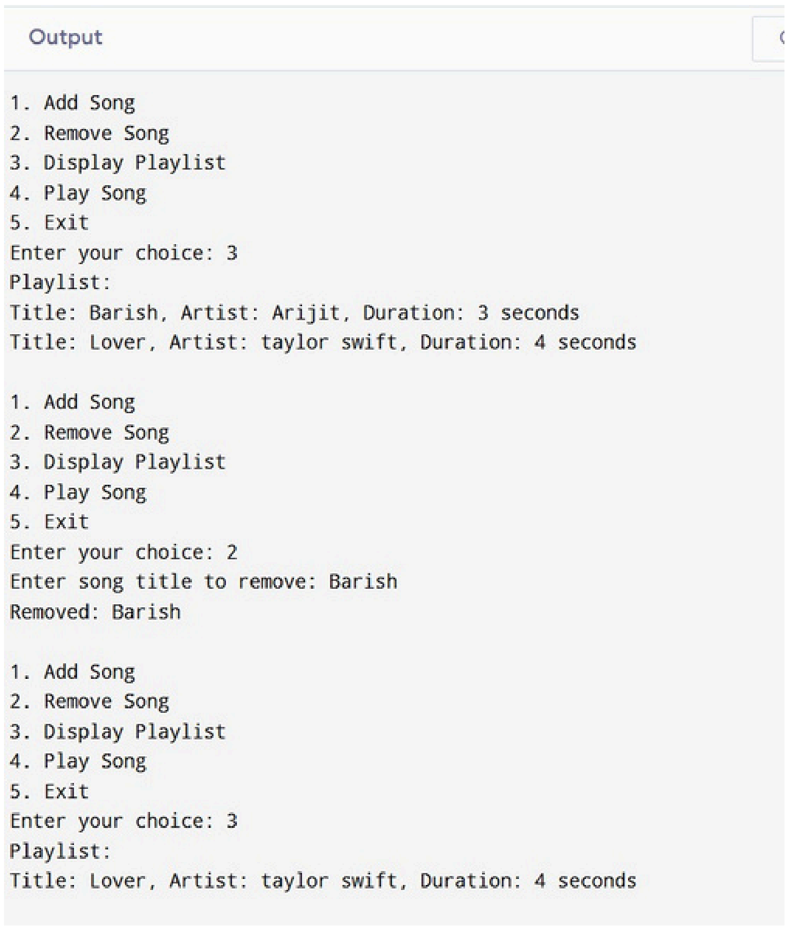
```
}

void removeSong(const std::string& title)
{
    if (!head)
    {
        std::cout << "Playlist is empty." << std::endl;
        return;
    }

    Song* temp = head;
    Song* prev = nullptr;
    while (temp && temp->getTitle() != title)
    {
        prev = temp;
        temp = temp->getNext();
    }
    if (!temp)
    {
        std::cout << "Song not found: " << title << std::endl;
        return;
    }

    if (prev)
    {
        prev->setNext(temp->getNext());
    }
    else
    {
        head = temp->getNext(); // Remove head
    }
    delete temp;
    std::cout << "Removed: " << title << std::endl;
}

void displayPlaylist()
{
    if (!head)
    {
        std::cout << "Playlist is empty." << std::endl;
        return;
    }
    Song* temp = head;
    std::cout << "Playlist:" << std::endl;
    while (temp)
    {
        std::cout << "Title: " << temp->getTitle()
                  << ", Artist: " << temp->getArtist()
                  << ", Duration: " << temp->getDuration() << " seconds" << std::endl;
        temp = temp->getNext();
    }
}

void playSong(const std::string title)
{
    Song* temp = head;
    while (temp)
    {
            if (temp->getTitle() == title)
            {
                std::cout << "Playing: " << temp->getTitle()
                          << " by " << temp->getArtist()
                          << " [Duration: " << temp->getDuration() << " seconds]" <<
std::endl;
                return;
            }
            temp = temp->getNext();
        }
        std::cout << "Song not found: " << title << std::endl;
    }
};

int main() {
    Playlist playlist;
    int choice;
    std::string title, artist;
    int duration;

    do {
        std::cout << "\n1. Add Song\n2. Remove Song\n3. Display Playlist\n4. Play
Song\n5. Exit\n";
        std::cout << "Enter your choice: ";
        std::cin >> choice;

        switch (choice) {
            case 1:
                std::cout << "Enter song title: ";
        std::cin.ignore();
        std::getline(std::cin, title);
        std::cout << "Enter artist name: ";
        std::getline(std::cin, artist);
        std::cout << "Enter duration (in seconds): ";
        std::cin >> duration;
        playlist.addSong(title, artist, duration);
        break;
    case 2:
        std::cout << "Enter song title to remove: ";
        std::cin.ignore();
        std::getline(std::cin, title);
        playlist.removeSong(title);
        break;
    case 3:
        playlist.displayPlaylist();
        break;
    case 4:
        std::cout << "Enter song title to play: ";
        std::cin.ignore();
        std::getline(std::cin, title);
        playlist.playSong(title);
        break;
    case 5:
        std::cout << "Exiting..." << std::endl;
        break;
    default:
        std::cout << "Invalid choice. Please try again." << std::endl;
}
```

```
    } while (choice != 5);

    return 0;
}
```

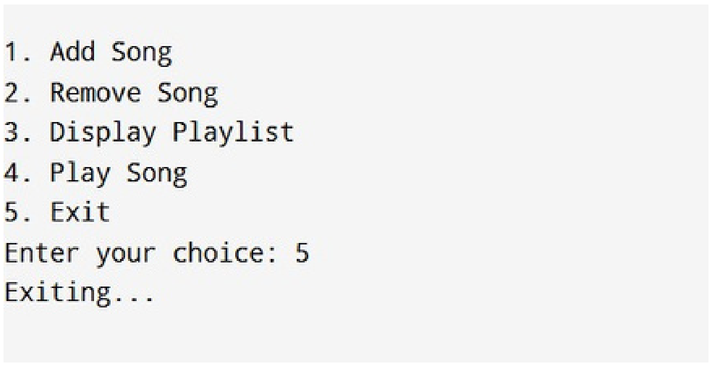
Output:


Output

```
/tmp/FFR9Z3JI3D.o

1. Add Song
2. Remove Song
3. Display Playlist
4. Play Song
5. Exit
Enter your choice: 1
Enter song title: Barish
Enter artist name: Arijit
Enter duration (in seconds): 3
Added: Barish by Arijit

1. Add Song
2. Remove Song
3. Display Playlist
4. Play Song
5. Exit
Enter your choice: 1
Enter song title: Lover
Enter artist name: taylor swift
Enter duration (in seconds): 4
Added: Lover by taylor swift
```



```
1. Add Song
2. Remove Song
3. Display Playlist
4. Play Song
5. Exit
Enter your choice: 3
Playlist:
Title: Barish, Artist: Arijit, Duration: 3 seconds
Title: Lover, Artist: taylor swift, Duration: 4 seconds

1. Add Song
2. Remove Song
3. Display Playlist
4. Play Song
5. Exit
Enter your choice: 2
Enter song title to remove: Barish
Removed: Barish

1. Add Song
2. Remove Song
3. Display Playlist
4. Play Song
5. Exit
Enter your choice: 3
Playlist:
Title: Lover, Artist: taylor swift, Duration: 4 seconds
```



```
1. Add Song
2. Remove Song
3. Display Playlist
4. Play Song
5. Exit
Enter your choice: 5
Exiting...
```