PIMPRI CHINCHWAD EDUCATION TRUST's.

PIMPRI CHINCHWAD COLLEGE OF ENGINEERING

(An Autonomous Institute)

Class : SY BTech **Acad. Yr. 2025-26** **Semester : I**

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Department: Computer Engineering **Division : A**

Course Name : Data Structures Laboratory **Code:BCE23PC02**

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Assignment No.

Problem Statement:

Design a music playlist system using a linked list where:

- Songs can be added to the beginning/end
- Songs can be deleted
- Next and previous songs can be navigated

Source Code :

```
#include <iostream>
#include <string.h>
#include<cstdlib>
using namespace std;

class node
{
public:
   string data = "";
   node *next = NULL;
   node() {}
   node(string dat);
};

node::node(string dat)
{
   data = dat;
}

class LL
{
```

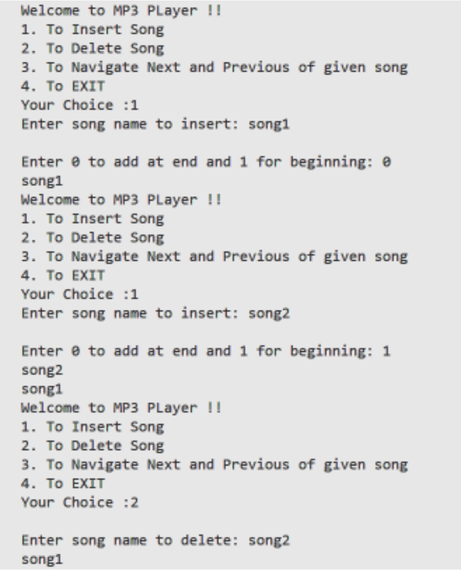
```
private:
   node *head = NULL;
   node *tail = head;

public:
   void insert(string val, int op = 0)
   {
      // op=0 for add last and 1 for add head
      node *temp = new node(val);
      if (head == NULL)
      {
         head = temp;
         tail = head;
      }
      else if (op == 1)
      {
         temp->next = head;
         head = temp;
      }
      else
      {
         tail->next = temp;
         tail = temp;
      }
   }
   void print()
   {
      node *it = head;
      while (it != NULL)
      {
         cout << it->data << endl;
         it = it->next;
      }
   }
   void deleteany(string val)
   {
      node *it = new node();
      node *itminus1 = new node();
      it = head;
      itminus1 = head;

      while (it != NULL)
      {
         if (it->data == val)
         {
            if (it == head)
            {
                head = it->next;
                delete it;
            }
            else if (it == tail)
            {
                tail = itminus1;
                tail->next = NULL;
                delete it;
            }
            else
            {
                itminus1->next = it->next;
                delete it;
            }
            break;
        }
        else
        {
            if (itminus1 == it)
            {
                it = it->next;
            }
            else
            {
                it = it->next;
                itminus1 = itminus1->next;
            }
        }
    }
}
void navi(string val, int op)
{
    node *it = head;
    node *itminus1 = head;
    // 0 for prev and 1 for next
    while (it != NULL)
    {
        if (it->data == val)
        {
            if (it == head)
            {
                if (op == 0)
                {
                    cout << "\nPrevious does not exist!!" << endl;
                }
```

```
                    else
                    {
                        cout << it->next->data << endl;
                    }
                }
                else if (it == tail)
                {
                    if (op == 1)
                    {
                        cout << "\nNext does not exist!!" << endl;
                    }
                    else
                    {
                        cout << itminus1->data << endl;
                    }
                }
                else
                {
                    if (op == 1)
                    {
                        cout << it->next->data << endl;
                    }
                    else
                    {
                        cout << itminus1->data << endl;
                    }
                }

                break;
            }
            else
            {
                if (itminus1 == it)
                {
                    it = it->next;
                }
                else
                {
                    it = it->next;
                    itminus1 = itminus1->next;
                }
            }
        }
    }
};
```

```
int main()
{
   LL obj;
   int op;
   while (true)
   {
      cout << "Welcome to MP3 PLayer !!" << endl;
      cout << "1. To Insert Song" << endl;
      cout << "2. To Delete Song" << endl;
      cout << "3. To Navigate Next and Previous of given song" << endl;
      cout << "4. To EXIT" << endl;
      cout << "Your Choice :";
      cin >> op;
      if(op==4){
         cout<<"\nBYE BYE";
         break;
      }
      switch (op)
      {
      case 1:
      {
         string name;
         int n;
         cout << "Enter song name to insert: ";
         getchar();
         getline(cin,name);
         cout << "\nEnter 0 to add at end and 1 for beginning: ";
         cin >> n;
         obj.insert(name,n);
         obj.print();
         break;
      }
      case 2:
      {
         string name;
         int n;
         cout << "\nEnter song name to delete: ";
         getchar();
         getline(cin,name);
         obj.deleteany(name);
         obj.print();
         break;
      }
      case 3:
      {
         string name;
```

```
            int n;
            cout << "Enter song name to navigate: ";
            getchar();
            getline(cin,name);
            cout<<"\nEnter 0 to play prev and 1 for next: ";
            cin>>n;
            obj.navi(name,n);
            break;
        }
        default:
        cout<<"\nEnter valid option";
            break;
        }
    }
    obj.print();

    return 0;
}
```

Screen Shot of Output :



```
Welcome to MP3 PLayer !!
1. To Insert Song
2. To Delete Song
3. To Navigate Next and Previous of given song
4. To EXIT
Your Choice :1
Enter song name to insert: song1

Enter 0 to add at end and 1 for beginning: 0
song1
Welcome to MP3 PLayer !!
1. To Insert Song
2. To Delete Song
3. To Navigate Next and Previous of given song
4. To EXIT
Your Choice :1
Enter song name to insert: song2

Enter 0 to add at end and 1 for beginning: 1
song2
song1
Welcome to MP3 PLayer !!
1. To Insert Song
2. To Delete Song
3. To Navigate Next and Previous of given song
4. To EXIT
Your Choice :2

Enter song name to delete: song2
song1
```

Conclusion:

Thus, we have successfully implemented a program using Linked List that can insert,delete, play next/previous songs.