horizontal line

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2022UCP1700

Assignment 3

**24th Aug 2023**

# **File-1 Song.h**

#include <iostream>

#include <iomanip>

using namespace std;

class Song

{

string title;

string artist;

string duration;

public:

Song(string title, string artist, string duration);

void settitle(string title);

void setartist(string artist);

void setduration(string duration);

string gettitle();

string getartist();

string getduration();

void display();

};

# **File-2 Album.h**

#include <vector>

#include "Song.h"

class Album

{

string alb\_name;

int alb\_size;

vector<Song \*> alb;

public:

Album(string name, int size);

void setname(string name);

void setsize(int size);

string getname(void);

int getsize(void);

void add(Song \*s);

bool remove(string title);

void display\_details\_songs(void);

};

# **File-3 Library.h**

#include "Album.h"

class Library

{

string lib\_name;

int lib\_size;

vector<Album \*> lib;

public:

Library(string lib\_name, int size);

void setname(string name);

void setsize(int size);

string getname(void);

int getsize(void);

void add\_album(Album \*a);

bool remove(string title);

void display\_details\_albums(void);

};

# **File-4 Song.cpp**

#include "Song.h"

Song::Song(string title, string artist, string duration)

{

this->title = title;

this->artist = artist;

this->duration = duration;

}

void Song::settitle(string title)

{

this->title = title;

}

void Song::setartist(string artist)

{

this->artist = artist;

}

void Song::setduration(string duration)

{

this->duration = duration;

}

string Song::gettitle()

{

return this->title;

}

string Song::getartist()

{

return this->artist;

}

string Song::getduration()

{

return this->duration;

}

void Song::display()

{

cout << "Details:-" << endl;

cout << "\t"

<< "Title :- " << setw(30) << title << endl;

cout << "\t"

<< "Artist :- " << setw(30) << artist << endl;

cout << "\t"

<< "Duration :- " << setw(30) << title << endl;

}

# **File-5 Album.cpp**

#include "Album.h"

Album::Album(string name, int size = 0)

{

this->alb\_name = name;

if (size >= 0)

this->alb\_size = size;

}

void Album::setname(string name)

{

this->alb\_name = name;

}

void Album::setsize(int size = 0)

{

if (size >= 0)

this->alb\_size = size;

}

string Album::getname(void)

{

return alb\_name;

}

int Album::getsize(void)

{

return alb\_size;

}

void Album::add(Song \*s)

{

alb.push\_back(s);

if (alb.size() > alb\_size)

alb\_size++;

}

bool Album::remove(string title)

{

bool flag = false;

vector<Song \*>::iterator it = alb.begin();

for (auto song : alb)

{

if (song->gettitle() == title)

{

alb.erase(it);

alb\_size--;

flag = true;

break;

}

it++;

}

return flag;

}

void Album::display\_details\_songs(void)

{

if (alb.size() == 0)

{

cout << "Album is empty" << endl;

return;

}

int i = 0;

cout << "Details Of All Songs:" << endl;

cout << setw(7) << "S.No" << setw(30) << "Name" <<

setw(30) << "Artist" << setw(10) << "Duration" << endl;

for (auto song : alb)

{

i++;

cout << setw(7) << i << setw(30) << song->gettitle()

<< setw(30) << song->getartist() << setw(10)

<< song->getduration() << endl;

}

}

# **File-6 Library.cpp**

#include "Library.h"

Library::Library(string lib\_name, int size = 0)

{

this->lib\_name = lib\_name;

if (size >= 0)

this->lib\_size = size;

}

void Library::setname(string name)

{

this->lib\_name = name;

}

void Library::setsize(int size = 0)

{

if (size >= 0)

this->lib\_size = size;

}

string Library::getname(void)

{

return lib\_name;

}

int Library::getsize(void)

{

return lib\_size;

}

void Library::add\_album(Album \*a)

{

lib.push\_back(a);

if (lib.size() > lib\_size)

lib\_size++;

}

bool Library::remove(string title)

{

bool flag = false;

vector<Album \*>::iterator it = lib.begin();

for (auto album : lib)

{

if (album->getname() == title)

{

lib.erase(it);

lib\_size--;

flag = true;

break;

}

it++;

}

return flag;

}

void Library::display\_details\_albums(void)

{

if (lib.size() == 0)

{

cout << "Library is empty" << endl;

return;

}

int i = 0;

cout << "Details Of All Albums:" << endl;

cout << setw(7) << "S.No" << setw(30) << "Name" << setw(7)

<< "Size" << endl;

for (auto album : lib)

{

i++;

cout << setw(7) << i << setw(20) << album->getname()

<< setw(7) << album->getsize() << endl;

}

}

# **File-7 main.cpp**

#include "Library.h"

int main()

{

Song \*s1 = new Song("Tere\_Naam", "Arijit Singh, Shilpa Rao", "3:20");

Song \*s2 = new Song("Dil\_Jhoom", "Mithoon,Arijit Singh", "5:04");

Song \*s3 = new Song("Chal\_Tere\_Ishq\_Me", "Mithoon, Vishal", "5:08");

Song \*s4 = new Song("Zihaal\_e\_Miskin", "Javed-Mohsin, Vishal", "4:48");

Song \*s5 = new Song("Heeriye", "Dulquer Salmaan", "3:50");

Album \*a1 = new Album("first\_album", 2);

Album \*a2 = new Album("second\_album", 2);

Album \*a3 = new Album("third\_album", 1);

a1->add(s1);

a1->add(s2);

a2->add(s3);

a2->add(s4);

a3->add(s5);

Library \*l1 = new Library("first\_library", 2);

Library \*l2 = new Library("second\_library", 1);

l1->add\_album(a1);

l1->add\_album(a2);

l2->add\_album(a3);

cout << endl;

s1->display();

cout << endl;

s2->display();

cout << endl;

s3->display();

cout << endl;

s4->display();

cout << endl;

s5->display();

cout << endl;

a1->display\_details\_songs();

cout << endl;

a2->display\_details\_songs();

cout << endl;

a3->display\_details\_songs();

cout << endl;

l1->display\_details\_albums();

cout << endl;

l2->display\_details\_albums();

return 0;

}