**Experiment 13**

**Aim:** WAP to implement book and video tapes class which are inherited from base class media. The media class has data member title and publication and book has data member for storing page in the book and take class has playing time in tape. Also write associate member function to access and change the data.

**Programme code:**

#include<iostream>

#include<cstring>

using namespace std;

//Creating a template class with name media of type T

template<class T>

class media

{

protected:

char title[50];

int publication;

T price;

public:

virtual void read()=0;

virtual void show()=0;

};

//Creating a template class with name book of type T

template<class T>

class book:public media<double>

{

private:

int pages;

public:

void read();

void show();

};

//Redefinition of virtual function read() in class book

template<class T>

void book<T>::read()

{

cout<<"Enter book title:";

cin.ignore();

cin.getline(title,50);

cout<<"Enter no. of publications:";

cin>>publication;

cout<<"Enter price of the book(in rupees):";

cin>>price;

cout<<"Enter no. of pages:";

cin>>pages;

}

//Redefinition of virtual function show() in class book

template<class T>

void book<T>::show()

{

cout<<"Book information"<<endl<<"------------------------------"<<endl;

cout<<"Book title:"<<title<<endl;

cout<<"No. of publications:"<<publication<<endl;

cout<<"Price:"<<price<<endl;

cout<<"No. of pages:"<<pages<<endl<<endl;

}

//Creating a template class with name tape of type T

template<class T>

class tape:public media<double>

{

private:

T time;

public:

void read();

void show();

};

//Redefinition of virtual function read() in class tape

template<class T>

void tape<T>::read()

{

cout<<"Enter title:";

cin.ignore();

cin.getline(title,50);

cout<<"Enter no. of publications:";

cin>>publication;

cout<<"Enter price(in rupees):";

cin>>price;

cout<<"Enter playing time(mins.):";

cin>>time;

}

//Redefinition of virtual function show() in class tape

template<class T>

void tape<T>::show()

{

cout<<"Tape information"<<endl<<"------------------------------"<<endl;

cout<<"Title:"<<title<<endl;

cout<<"No. of publications:"<<publication<<endl;

cout<<"Price:"<<price<<endl;

cout<<"Playing time:"<<time<<endl<<endl;

}

int main()

{

media<double>\*m[9999];

int n=0;

char ch;

cout<<"Check for int data\n-------------------------------------------\n";

do

{

cout<<"Enter book or tape(b/t):";

cin>>ch;

if(ch=='b'){

m[n]=new book<int>; }

else {

m[n]=new tape<int>;

m[n++]->read(); }

cout<<"Do you want to enter another record(Y/N)?:";

cin>>ch;

}

while(ch=='Y'||ch=='y');

cout<<endl<<endl;

for(int i=0;i<n;i++)

m[i]->show();

cout<<"Check for double data\n-------------------------------------------\n";

n=0;

do

{

cout<<"Enter book or tape(b/t):";

cin>>ch;

if(ch=='b')

m[n]=new book<double>;

else

m[n]=new tape<double>;

m[n++]->read();

cout<<"Do you want to enter another record(Y/N)?:";

cin>>ch;

}while(ch=='Y'||ch=='y');

cout<<endl<<endl;

for(int i=0;i<n;i++)

m[i]->show();

return 0;

}