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Imagine a publishing company which does marketing for book and audio cassette versions.

Create a class publication that stores the title (a string) and price (type float) of

a publication. From this class derive two classes: book, which adds a page

count (type int), and tape, which adds a playing time in minutes (type float).

Write a program that instantiates the book and tape classes, allows user to enter

data and displays the data members. If an exception is caught, replace all the data

member values with zero values.

**Code:-**

#include<iostream>

#include<conio.h>

using namespace std;

// Base class

class publication

{

// Base class variables

public:

string title;

float price;

// Constructor

publication()

{

title="";

price=0.0;

}

};

// Derived class for books

class book:public publication

{

public:

int page\_count;

// Constructor

book()

{

page\_count=0;

}

void set\_info()

{

// Try block

try

{

cout<<"Enter title of the book: ";

cin.ignore();

getline(cin,title);

cout<<"Enter number of pages in the book: ";

cin>>page\_count;

if(page\_count<0)

{

throw page\_count;

}

cout<<"Enter price of the book: ";

cin>>price;

if(price<0)

{

throw price;

}

}

// Catch block

catch(int p)

{

cout<<"Page count cannot be negative"<<endl;

page\_count=0;

title="0";

price=0.0;

}

catch(float p)

{

cout<<"Price cannot be negative";

page\_count=0;

title="0";

price=0;

}

}

void display\_info()

{

cout<<"Title-"<<endl<<title<<endl;

cout<<"Number of pages: "<<endl<<page\_count<<endl;

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

}

};

// Derived class for cassettes

class tape:public publication

{

public:

float time;

tape()

{

time=0.0;

}

void set\_info()

{

try

{

cout<<"Enter title of the cassette: ";

cin.ignore();

getline(cin,title);

cout<<"Enter the running time of the cassete in minutes: ";

cin>>time;

if(time<0)

{

throw time;

}

cout<<"Enter price of the cassette: ";

cin>>price;

if(price<0)

{

throw price;

}

}

catch(float t)

{

cout<<"Time cannot be negative"<<endl;

time=0.0;

title="0";

price=0.0;

}

catch(float p)

{

cout<<"Price cannot be negative"<<endl;

time=0.0;

title="0";

price=0.0;

}

}

void display\_info()

{

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

cout<<"Running time: "<<endl<<time<<endl;

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

}

};

int main()

{

int n1,n2,ch;

char c;

cout<<"Enter number of books: ";

cin>>n1;

cout<<"Enter number of cassettes: ";

cin>>n2;

// Dynamically memory allocation

book \*b=new book[n1];

tape \*t=new tape[n2];

do

{

cout<<"Enter 1 to add books"<<endl;

cout<<"Enter 2 to add cassettes"<<endl;

cout<<"Enter 3 to display available books"<<endl;

cout<<"Enter 4 to display available cassettes"<<endl;

cout<<"Enter your choice: "<<endl;

cin>>ch;

// Switch case

switch(ch)

{

case 1:

{

// Enter books details

for(int i=0;i<n1;i++)

{

cout<<endl<<"Enter details of book "<<i+1<<endl;

b[i].set\_info();

}

}

break;

case 2:

{

for(int i=0;i<n2;i++)

{

// Enter cassette details

cout<<endl<<"Enter details of cassette "<<i+1<<endl;

t[i].set\_info();

}

}

break;

case 3:

{

// Display book details

for(int i=0;i<n1;i++)

{

cout<<endl<<"Details of Book "<<i+1<<"- "<<endl;

b[i].display\_info();

}

}

break;

case 4:

{

// Display cassette details

for(int i=0;i<n2;i++)

{

cout<<endl<<"Details of cassette "<<i+1<<"- "<<endl;

t[i].display\_info();

}

}

break;

default:

cout<<"Wrong choice";

}

cout<<endl<<"Do you want to continue?(Y/N)"<<endl;

cin>>c;

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

return 0;

getch();

}

**Output:-**

Enter number of books: 2

Enter number of cassettes: 1

Enter 1 to add books

Enter 2 to add cassettes

Enter 3 to display available books

Enter 4 to display available cassettes

Enter your choice:

1

Enter details of book 1

Enter title of the book: KK

Enter number of pages in the book: 999

Enter price of the book: 500

Enter details of book 2

Enter title of the book: KKK

Enter number of pages in the book: 987

Enter price of the book: 499

Do you want to continue?(Y/N)

y

Enter 1 to add books

Enter 2 to add cassettes

Enter 3 to display available books

Enter 4 to display available cassettes

Enter your choice:

2

Enter details of cassette 1

Enter title of the cassette: KK

Enter the running time of the cassete in minutes: 2

Enter price of the cassette: 500

Do you want to continue?(Y/N)

y

Enter 1 to add books

Enter 2 to add cassettes

Enter 3 to display available books

Enter 4 to display available cassettes

Enter your choice:

3

Details of Book 1-

Title-

KK

Number of pages:

999

Price:

500

Details of Book 2-

Title-

KKK

Number of pages:

987

Price:

499

Do you want to continue?(Y/N)

y

Enter 1 to add books

Enter 2 to add cassettes

Enter 3 to display available books

Enter 4 to display available cassettes

Enter your choice:

4

Details of cassette 1-

Title:

KK

Running time:

2

Price:

500