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STD: AI&DS

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BATCH: A4

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Problem Statement:

Imagine a publishing company which does marketing for bookand audio cassette versions. Create a class publication that stores the title (a string) and price (type float) of publications. From thisclass 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 class, allows user to enter data and displays the data members. If an exception is caught, replace all the data member values with zero values.

Program:

```
#include <iostream>

#include <string>

using namespace std;


class Publication {

protected:

  string title;

   float price;


public:

  Publication() : title(""), price(0.0) {}


  void getData() {

    cout << "Enter the title: ";

    cin >> title;

    cout << "Enter the price: ";
```

```cpp
        cin >> price;

    }

    void displayData() {

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

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

    }

};

class Book : public Publication {

private:

    int pageCount;


public:

    Book() : pageCount(0) {}


    void getData() {

        Publication::getData();

        cout << "Enter the page count: ";

        cin >> pageCount;

    }


    void displayData() {

        Publication::displayData();

        cout << "Page Count: " << pageCount <<endl;

    }
```

```cpp
};

class Tape : public Publication {
private:
    float playingTime;

public:
    Tape() : playingTime(0.0) { }

    void getData() {
        Publication::getData();
        cout << "Enter the playing time (minutes): ";
        cin >> playingTime;
    }

    void displayData() {
        Publication::displayData();
        cout << "Playing Time: " << playingTime << " minutes" <<endl;
    }
};

int main() {
    Book book;
    Tape tape;

    try {
```

```cpp
        cout << "Enter book information:" <<endl;

        book.getData();

        cout << "\nEnter tape information:" <<endl;

        tape.getData();


        cout << "\nBook information:" <<endl;

        book.displayData();

        cout << "\nTape information:" <<endl;

        tape.displayData();
    } catch (...) {

        cerr << "An exception occurred. Resetting data to zero values." <<endl;

        book = Book();  // Reset book data to zero values

        tape = Tape();  // Reset tape data to zero values

    }


    return 0;
}
```

Output:

Enter book information:

Enter the title: Sample Book

Enter the price: 20.99

Enter the page count: 250

Enter tape information:

Enter the title: Sample Tape

Enter the price: 9.99

Enter the playing time (minutes): 120

Book information:

Title: Sample Book

Price: 20.99

Page Count: 250

Tape information:

Title: Sample Tape

Price: 9.99

Playing Time: 120 minutes