**CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY**

**DEVANG PATEL INSTITUTE OF ADVANCE TECHNOLOGY & RESEARCH**

Department of Computer Engineering/Computer Science & Engineering/ Information Technology

**Subject Name: Object Oriented Programming with C++**

**Semester: II**

**Subject Code: CE144**

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| **No.** | **Aim of the Practical** |
| **37.** | **Create a class Media that stores the title (a string) and price (float). Class Mediahas two argument constructor which initializes data members of class Media. Also declare a virtual function display () in Class Media. From the class Media derive two classes: Class book, which contains data member page count (int): and Class tape, which contains data member playing time in minutes (float). Both Class book and Class tape should have a constructor which initializes base class constructor as well as its own data members and display ( ) function which displays book details and tape details respectively. Write a main ( ) to test book and tape classes by creating instances of them, asking the user to fill data and displaying them. Use the concept of Virtual function and Constructor in Derived Class.**  **PROGRAM CODE :**  #include <iostream>  using namespace std;  class Media  {  public:  string title;  int price;  Media()  {  }  Media(string s, int p)  {  title = s;  price = p;  }  virtual void display()  {  }  };  class Book : public Media  {  public:  int pagecount;  Book(string s, int p, int a) : Media(s, p)  {  pagecount = a;  }  void display()  {  cout << "Title: " << title << endl;  cout << "Price: " << price << endl;  cout << "Page numbers: " << pagecount << endl;  cout << endl;  }  };  class Tape : public Media  {  public:  float time;  Tape(string s, int p, int b) : Media(s, p)  {  time = b;  }  void display()  {  cout << "Title: " << title << endl;  cout << "Price: " << price << endl;  cout << "Play Time: " << time << endl;  }  };  int main()  {  string title;  int price;  int pagecount;  int time;  cout << "Enter the Book Details" << endl;  cout << "Title: ";  cin >> title;  cout << "Price: ";  cin >> price;  cout << "Number of Pages: ";  cin >> pagecount;  cout << endl;  Book book1(title, price, pagecount);  cout << "Enter the Tape Details" << endl;  cout << "Title: ";  cin >> title;  cout << "Price: ";  cin >> price;  cout << "Play Time (in mins): ";  cin >> time;  cout << endl;  Tape tape1(title, price, time);  Media \*m1, \*m2;  m1 = &book1;  m2 = &tape1;  cout << "Book Details";  cout << endl;  m1->display();  cout << "Tape Details";  cout << endl;  m2->display();  }  **OUTPUT:**    **CONCLUSION:** In this practical we learn the concept of the virtual function and use it for the derived class. Also learn the initialization of constructor using derived class. |