LAB MANUAL # 15
Course: Computer Programming (CP-107)
Session: 20CP

Array of objects, Objects in functions and inline functions

This lab has been designed to enable students to understand how to create destructor, how to create and use array of objects, how to pass objects as arguments to functions and how to return objects from function. Students will also create inline functions and will understand difference between inline and normal function execution. Clear concept about these paradigms has already been provided in the class along with examples.

Objectives:

In this lab, you will practice:

- Creating **destructor.**
- Creating **array of objects.**
- Passing **objects as parameters** to **function.**
- **Returning objects** from **function.**
- Creating **inline functions.**

Lab Tasks:

Question # 1:

Create a class fraction that has two data members, numerator and denominator. Create array of this class in main() to get at least 10 fractions. Calculate average of these fractions and display the result.

Question # 2:

Create a class money that can keep record of upto 999 (nine hundred and ninety nine). It has three data members hundred, tens and ones all of type string. Create a parametrized constructor to initialize objects of this class. Create a destructor to destroy objects. Only member function of class is convert() which converts money entered in words to numbers e.g. If user entered: hundred=three, tens=2, ones =5 then function should return 325. Create an array of class money to get at least 5 different amounts and call convert() function for each array element.

Question # 3:

Create a class distance that has two data members of type int; feet and inches. Write a function which takes distance object as parameter and represents distance in inches.

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Question # 4:

Create a class vehicle that has three data members, model, year and brand_name. write member functions to get and display values of these data members. Create an array of type vehicle in main() and display data for 10 different vehicles.

Question # 5:

Create a class Marks that has data for three quizzes, quiz1, quiz2, quiz3. Write a function that accepts array of type Marks as an argument and returns value of type Marks. Function calculates average score for each quiz e.g. quiz1[0]+quiz1[1]+quiz1[2]+…. Call this function in main() and display the average score of each quiz.

Question # 6:

Write a program that has three functions for performing basic arithmetic operations e.g. addition, subtraction and multiplication. Make all these functions inline.

Question # 7:

Create a class book that has three data members, book title, book number, book author. Create a default constructor and destructor for object initialization and destruction respectively. Only member function of the class is Find(). Define this function outside class and make it inline. Function takes book type object as argument and returns true if book title has word “computer” in it, otherwise returns false.

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