University of Khartoum

Faculty of Mathematical Sciences

Department of Computer Science

Lab Manual: C++ Programming Language

Lab No (3)

3.1 Create a structure called **employee** that contains two members: an employee number (type int) and the employee's compensation (in **dollars**; type float). Ask the user to fill in this data for three employees, store it in three variables of type struct **employee**, and then display the information for each employee.

3.2 Create a structure called **time**. Its three members, all type int, should be called **hours**, **minutes**, and **seconds**. Write a program that prompts the user to enter a time value in hours, **minutes**, and **seconds**. This can be in 12:59:59 format, or each number can be entered at a separate prompt ("Enter hours:", and so forth). The program should then store the time in a variable of type struct **time**, and finally print out the total number of seconds represented by this time value:

```
long totalsecs = t1.hours*3600 + t1.minutes*60 + t1.seconds
```

3.3 Suppose you have a **main**() with three local arrays, all the same size and type (say float). The first two are already initialized to values. Write a function called **addarrays**() that accepts the addresses of the three arrays as arguments; adds the contents of the first two arrays together, element by element; and places the results in the third array before returning. A fourth argument to this function can carry the size of the arrays. Use pointer notation throughout; the only place you need brackets is in defining the arrays.

3.4 Define a **Point** structure with **x** and **y** coordinates. Write a function **pDistance**(Point, Point) that computes the distance between two points. Write a function **pathLength**(Point[], int) that takes an array of Point (representing a path) and its size as input parameters and compute the path length by using the **pDistance** function. Write a main program to test your structure and functions.