Course Assignments

Project 2

Ask the user to enter a number, not greater than 15. Print an nxn square display.

Sample

n=3

XXX

XXX

XXX

n=5

XXXXX

XXXXX

XXXXX

XXXXX

XXXXX

Project # 3

Read in an array of numbers. Sort the array using a bubble sort. Print out the sorted array.

This is the algorithm for a bubble sort:

1. Find the lowest value and put that value in arr[0].

2, Find the next lowest value and put that value in arr[1].

3. Continue in this manner until you get to the end.

Project # 4 - Soccer Scores

Write a program that stores the following data about a soccer player in a structure:

Player's Name

Player's Number

Points Scored by a Player

The program should keep an array of 12 of these structures. Each element is for a different player on the team. When the program runs it should ask the user to enter the data for each player. It should then show a table that lists each player's number, name and points scored. The program should also calculate and display the total points earned by the team. The number and name of the player who has earned the most points should also be displayed.

Project 5 - Employee Class

Write a class named Employee that has the following member variables:

name - A string that holds the employee's name.

idNumber - An int variable that holds the employee's ID number.

department - A string that holds the name of the department where the employee works.

position - A string that holds the employee's job title.

The class should have the following constructors:

1. A constructor that accepts the following values as arguments and assigns them to the appropriate member variables: employee's name, employee's ID number, department and position.

2. A constructor that accepts the following values as arguments and assigns them to the appropriate member variables: employee's name and ID number. The department and position fields should be assigned an empty string (" ").

3. A default constructor that assigns empty strings(" ") to the name, department and position member variables and 0 to the idNumber member variable.

Write appropriate mutator functions that store values in these member variables and accessor functions that return the values in these member variables. Once you have written the class, write a separate program that creates three Employee objects to hold the following data:

Name	ID Number	Department	Position
Susan Meyers	47899	Accounting	Vice-President
Mark Jones	39119	IT	Programmer
Joe Rogers	81774	Manufacturing	Engineer

The program should store this data in the three objects and then display the data for each employee on the screen.

Project 6 - Overloading

Write a program that computes and displays the charges for a patient's hospital stay. First, the program should ask if the patient was admitted as an in-patient or an out-patient. If the patient was an in-patient, the following data should be entered:

1. The number of days spent in the hospital

2. The daily rate

3. Hospital medication charges

4. Charges for hospital services (lab tests, etc.)

The program should ask for the following data if the patient was an out-patient:

1. Charges for hospital services (lab tests, etc.)

2. Hospital medication charges

The program should use two overloaded functions to calculate the total charges. One of the functions should accept arguments for the inpatient data, while the other function accepts arguments for the out-patient information. Both functions should return the total chages.

Input Validation: Do not accept negative numbers for any data.

Project 7 - Templates

Write templates for the two functions minimum and maximum. The minimum function should accept two arguments and return the value of the argument that is the lesser of the two. The maximum function should accept two arguments and return the value of the argument that is the greater of the two. Design a simple driver program that demonstrates the templates with various data types.

Final Exam