RAMAIAH Institute of Technology

Department of Computer Science and Engineering (AI and ML) and Computer Science and Engineering (Cyber Security)

Assignment #2 1/8/2022

Q1: Design C Program to Find Smallest, Largest of Three Numbers using the following:

i) Nested if Statement
ii) Conditional Operator
iii) Using function

Q2: Assume that a retailer grocery shop owner has placed an order for the following items from a Wholesale Dealers. The Items that they have ordered are as follows::

Sl.no	Item	Quantity	Price per Unit (Rs)
1.	Rice Bags	20000	1580.50
2.	Editable Oil (Litres)	30000	233.55
3.	Cookery Items	32000	50.60
4.	Wheat flour	3500	155.00
5.	Ground Nuts	300	167.00
6.	Salt	200	23.00
7.	Biscuits	25000	10.00
8.	Dal Items	200	178.50

Write a function to compute the total number of Items and the amount spent in Rs to purchase these Items for the shop owner. Further, consider that the retail shop owner has offered the following discount for the customers to improve their sales during the festival seasons:

I. The Rice Bag with a discount of 10% of the original price.
II. The Editable oil with a discount of 15% of the total cost.
III. The Cookery Items with a discount of 15% of the total cost.
IV. The other items are offered with a discount of 5% of the total cost.

Q3: Given a string, write a c program to check if it is palindrome or not.

A string is said to be palindrome if the reverse of the string is the same as the string.

For example, “acca” is a palindrome, but “adgc” is not a palindrome.

Q4: Write a program to print the prime factors of a number.

Q5: Write a program using a switch case to display a menu that offers five options: read three numbers, calculate the total, calculate the average, display the smallest and display the largest value.
Q6: Assume that a class has 70 students. There are five courses in the semester. Every student is supposed to give two Tests (CIE test). Write a program to read the marks obtained by each student in all three examinations. Calculate and display each student's total marks and average in the class.
Q7: Write a program using the function to calculate compound interest given the principal, interest rate, and the number of years.

Q8:Write a program to swap two integers using the call by value and call by reference method of passing arguments to a function.

Q9: Write a program to define a structure for a hotel that has members' names, addresses, grades, number of rooms, and room charges. Write a function to print the names of a hotel in a particular grade. Also, write a function to print names of a hotel that have room charges less than the specified value.
Q10: Write a program to print that Fibonacci series

(a) using recursion
(b) Without using recursion

Q11: Define a structure to store the name, an array mark, which stores marks of five different courses and a character grade. Write a program to display the details of the student whose name is entered by the user. Display the names of students who have secured less than 40% of the average marks and students who scored more than 40%.

Q12: Write a C Program to Delete all the similar elements from an array.
Q13: Write a program that computes the sum of elements which are stored on the main diagonal of a matrix

Q14: Write a program to read an array of 10 floating point numbers. Display the mean of these numbers till two decimal places.
Q15: Write a program to input the elements of a two-dimensional array. Then from this array make two arrays: one that stores all odd elements of the array and the other stores even elements.
Q16: Write a menu driven program to add, subtract and transpose two matrices.
Q17: Write a C program to multiply two $m \times n$ matrices
Q18: Write a program to merge two integer arrays. Also display the merged array in reverse order.
Q19: Write a program to read an integer number. Print the reverse of the number using recursion.
Q20: Write a program to swap two variables that are defined as global variables.

Note: Complete and submit the assignment on or before **7/8/2022** in a soft bound, and it will be evaluated for 10 marks, through the lab / oral test.