

North South University, CSE115, Summer 2021

Special Assignment 1: Due: 29th August, 2021, 1:00PM

Submit the assignment in the theory class (in google classroom) assignment section.

Do not submit zipped folder. Do not send any object file (.o) . .c files accepted.

1. If a **five-digit number** is input through the keyboard, write a program to obtain the sum of the first and last digit of this number.
2. Find the sum of the following series $1/2 - 2/3 + 3/4 - 4/5 + 5/6 - \dots n$ (n is the number of terms)
3. An integer n is divisible by 9 if the sum of its digits is divisible by 9. Develop a program to display each digit, starting with the rightmost digit. Your program should also determine whether or not the number is divisible by 9. Use the function **int takeinput()** to obtain input from user, and **void dis_res (int num)** to display digits as well as whether the number is divisible by 9.
4. In the following problem, an integer given as input. In the output, the number of lines is equal to this number. In every odd numbered line (e.g. 1st, 3rd, 5th and so on) you have to print the odd numbers from 1 to that line number. On the other hand, in the even numbered lines, print all the even numbers from 2 to that line number.

Sample Input	Output
6	1 2 1 3 2 4 1 3 5 2 4 6

5. In the game of blackjack the cards 2 through 10 are counted at their face values regardless of suit, all face cards (jack, queen, and king) are counted as 10, and an ace is counted as either a 1 or an 11, depending on the total count of all the cards in a player's hand. The ace is counted as 11 only if the resulting total value of all cards in a player's hand does not exceed 21, else it is counted as a 1. Using this information write a C program that accepts three card values as inputs (a 1 corresponding to an ace, a 2 corresponding to a 2, and so on), calculates the **total value** of the cards in the player's hand appropriately, and **displays the value of the three cards** with a printed message. Also, explain in details how you have attempted to solve the problem.

6. Write a code in C for the following scenario:

Consider a hospital scenario where “**z**” number of patients wants to undertake some medical examination. Each patient registers for “**t**” number of tests and the test to be conducted is determined by qualified doctors after listening symptoms. Each test cost is different and hence each test is identified by the price paid. Write a program to read the cost for the tests undertaken by each patients and print the total bill paid by each patient. Then the program should decide if the patient is very ill, moderately ill and ok (Very ill: Pay Bill Tk2000 and above, Moderately ill: Pay Bill between Tk1999 and Tk500, ok: Pay Bill below Tk500).

Expected Output:

Enter number of patients: 2

Enter number of tests: 4

Patient id: 1

Cost for 4 tests for patient ID:1

100 150 50 20

Total: TK320

You are OK. Good day.

Patient id: 2

Price for 4 tests for patient ID: 2

100 500 600 1000

Total: TK 2200

You are very ill. Do not panic. Our doctors are here to help.