ಭಾರತೀಯ ಮಾಹಿತಿ ತಂತ್ರಜ್ಞಾನ ಸಂಸ್ಥೆ ರಾಯಚೂರು
भारतीय सूचना प्रौद्योगिकी संस्थान रायचूर
Indian Institute of Information Technology Raichur

Lab - 8

Introduction to Programming
(ID110) Date: December 20, 2024
Topics: Structures

Time: 1.5 Hr | CSE'24, Semester - I | Max marks: 10

Instructions:

- The lab session consists of **two programming questions**, and **both are mandatory**.
- External materials (e.g., notes, books) and electronic devices (e.g., mobile phones, smart watch, bluetooth) are **strictly prohibited**. Only a **blank sheet of paper** and a **pen** may be used for rough work.
- Internet usage is **not allowed** under any circumstances. Any violations will lead to **serious academic consequences**, including potential disqualification from the lab.
- Any form of **plagiarism or academic dishonesty** will be treated with the utmost seriousness and may result in severe penalties, including a zero for the lab or further disciplinary actions.
- Code must be written from scratch during the session. Pre-written code snippets or solutions will not be accepted. Use meaningful variable names and add appropriate comments where necessary.
- Upon completion, **two code files** named after **roll no.** (e.g., "CS24B1001-Lab8-p1.c" and "CS24B1001-Lab8-p2.c") must be submitted on **Google Classroom**. Not follow- ing the naming convention will lead to **minus marking**. The submission will only be accepted if done in the presence of TA.
- Logic-based questions(like "Why my code is not working?", "Why my code is not giving the correct output?", "Why it is giving errors?", "What we have to do in this question?", etc.) will not be entertained by us as this is the final lab evaluation for this course.
- But if you face any problem in understanding or language in the question we will be there for you. But it will not help you in solving the question.

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1. Write a C program that defines two structures, str1 and str2, with integer members num1 and num2, respectively. In the main function, declare variables of these structures, prompt the user to input values for num1 and num2, and then calculate and display their sum. Explain how the program accesses the members of the two different structures and sums their values.

Input Format:

The program takes two integer inputs:

- The first integer corresponds to num1 (member of structure str1).
- The second integer corresponds to num2 (member of structure str2).

Output Format:

- The the sum of the integers

Examples:

- **Input:**

Enter value for num1 and num2: 5 7

Output:

Sum of two structures = 12

(5 marks)

2. Write a C program to add two distances, given in feet and inches, and display the sum in the correct feet and inches format. The program should take two inputs for distance (in feet and inches) and compute the total distance. If the total inches exceed 12, convert the excess inches into feet. Ensure that the program handles both feet and inches correctly and displays the result in the format: feet'-inches".

Input Format:

- The program will prompt the user to enter two distances.
- Each distance consists of two values: the number of feet (integer) and the number of inches (floating-point).

Output Format:

- The program will display the sum of the two distances in feet and inches format. If the total inches exceed 12, the program will convert them into additional feet.

Examples:

- **Input:**

Enter 1st distance (feet inch): 23
21
Enter 2nd distance (feet inch): 24
16

Output:

Sum = 50'-1.0"

- **Input:**

Enter 1st distance (feet inch): 5 8.5
Enter 2nd distance (feet inch): 3 7.5

Output:

Sum = 9'-4.0"

(5 marks)

All the Best!