

Question 1

What is the output of the following statements?

- i. `printf("%.2f\n", 3.446);`
- ii. `printf("%.1f\n", 3.446);`

Question 2

Write statements to,

- i. Print the value 123.4567 with 2 digits precision.
- ii. Print the value 3.14159 with three digits to the right of the decimal point.
- iii. Print the value 333.546372 in a field width of 15 characters with precisions of 1,2,3,4 and 5.

Question 3

Draw a flow chart to enter the radius of a circle from the keyboard and display the diameter, the circumference and the area.

Convert the above flow chart into a C program.

Question 4

Draw a flow chart to enter the time duration of an event in seconds and display the hrs, minutes and seconds of the duration separately.

Additional Exercises

Question 1

a) What does the following print? Assume $x = 2$ and $y = 3$.

- i. `printf(“*\n**\n***\n****\n*****\n”);`
- ii. `printf(“%d”, x + x);`
- iii. `printf(“x = “);`
- iv. `printf(“x=%d”, x);`
- v. `printf(“%d = %d”, x+y, y+x);`
- vi. `/* printf(“%d”, x+y); */`
- vii. `printf(“\n”);`
- viii. `float z = 45.567; printf(“value is %.2f”, z);`

Question 2

To travel from home to SLIIT Campus, a particular student needs to take three buses. Draw a flow chart to input the fares of each bus and estimate the traveling expenditure of the student for the entire semester.

Convert the above flow chart into a C program.

(Assume that there are 5 days per week and 13 weeks for the semester).

Question 3

The simple interest on a loan is calculated by the formula

$$\text{interest} = \text{principal} * \text{rate} * \text{days} / 365$$

The preceding formula assumes that `rate` is the annual interest rate, and therefore includes the division by 365 (days). Develop a program that will input `principal`, `rate` and `days` for several loans, and will calculate and display the simple interest for each loan

Question 4

The Body Mass Index (BMI) is given by

$$BMI = \frac{\text{weightInKilograms}}{\text{heightInMeters} \times \text{heightInMeters}}$$

Create a BMI calculator application that reads the user's weight then calculates and displays the user's body mass index.

Question 5

Write a C program to find the sum of series $1+2+3+4+\dots+n$ using the following formula. The program should take the value of n from the key board.

$$\text{Sum} = n * (n+1) * (1/2)$$

Question 6

Write a program that inputs one five-digit number, separates the number into its individual digits and prints the digits separated from one another.

Ex: if user types, 42139, the program should print 4 2 1 3 9