Day 6

Lab Assignments

1. Enter 3 sides of a triangle. WAP to check whether those sides form a valid triangle or not (it is valid if sum of the two sides is greater than the largest of three sides). Then classify the given triangle is isosceles, equilateral or right-angled or scalene.
   Input: Enter 3 sides of a triangle: 7 7 7
   Output: This is an equilateral triangle.
2. WAP to determine whether a year entered through the keyboard is a leap year or not.
   Input 1: Enter the year: 2005
   Output 1: 2005 is not a leap year.
   Input 2: Enter the year: 2000
   Output 2: 2000 is a leap year
3. WAP to find the roots of a quadratic equation $ax^2+bx+c=0$ using if-else statement. Take care of the following situations.
   - No solution if both a and b are zero.
   - There is only one root if b^2-4ac is equal to zero.
   - There is no real root if $b^2-4ac<0$
   - Otherwise compute the two real roots.

   Input 1:
   Input values for a, b and c: 1 8 3
   Output 2:
   The Roots are real & unequal.
   Roots are -0.39 and -7.61.
   Input 2:
   Input values for a, b and c: 3 5 7
   Output 2:
   Roots are imaginary.
4. WAP to print weekday name program according to given weekday number using switch case. For weekday number (0-6) and print weekday name (Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, and Saturday).
   Input: Enter the week day number: 3
   Output: This is Wednesday
5. WAP which takes two integer operands and one operator form the user, performs the operation and then prints the result. Consider the operators +, -, *, / and %. Use switch case.
   Input: Enter two numbers: 13 6
   Enter the operator: *
   Output: Result: 78

Home Assignments

1. WAP to input any three distinct integers and display the greatest of the three integers.
   Input: Enter three distinct integers: 33 77 48
   Output: Greatest integer is 77
2. WAP to display the grade system of KIIT University based on total marks secured by a student in a semester. Use switch-case statement.
   Input: Enter the total mark secured by a student: 77
   Output: Secured grade is A
3. Write a C program to read a character from the user and check whether it is vowel

or consonant using a switch statement. If the entered character is not an alphabet, then print the appropriate message.
Input 1: Enter a character: E
Output 1: Entered character is a vowel
Input 2: Enter a character: *
Output 2: Entered character is not an alphabet

4. Write a C program to check whether a number is positive, negative or zero using switch case.
Input 1: Enter a number: 45
Output 1: Entered number is positive
Input 2: Enter a number: -54
Output 2: Entered number is negative
5. Write a program to calculate the area of different geometrical figures like Circle, triangle, trapezoid, square, and rectangle. The program should ask the user to enter the code for which the user wants to find out the area.
   - 't' for triangle
   - 'z' for trapezoid
   - 'c' for circle
   - 's' for square
   - 'r' for rectangle

   Input: Geometrical Figures:
   1. 't' for triangle
   2. 'z' for trapezoid
   3. 'c' for circle
   4. 's' for square
   5. 'r' for rectangle
   Enter your choice: s
   Enter the side of the square: 5
   Output: Area of the square: 25

Book Exercises

1. WAP to find the number and sum of all integers greater than 100 and less than 200 that are divisible by 7 [Page No: 167, Exercise 6.2]
Output: Number of all integers greater than 100 and less than 200 that are divisible by 7 = 14
Sum of all integers greater than 100 and less than 200 that are divisible by 7 = 2107
2. A cloth showroom has announced the following seasonal discounts on purchase of items:

Purchase Amount	Discount	
	Mill cloth	Handloom items
0 - 100	-	5.0%
101 - 200	5.0%	7.5%
201 - 300	7.5%	10.0%
Above 300	10.0%	15.0%

WAP using **switch statement** to compute the net amount to be paid by a customer. [Page No: 168, Exercise 6.8]
Input: Enter the purchase amount value: 500
Enter the type of cloth [M for Mill cloth, H for Handloom items]: M

Output: Net amount to be paid: 450