Branching Statements: if..else, switch..case (Week 3)

Day 5

Lab Assignments

1. WAP to find the largest between two numbers.
   Input: Enter two numbers: 80 90
   Output: The largest number is 90
2. WAP to read an alphabet from the user and convert it into uppercase if the entered alphabet is in lowercase, otherwise display an appropriate message.
   Input 1: Enter an alphabet: h
   Output 1: The upper case of the entered letter is H
   Input 2: Enter an alphabet: K
   Output 2: You have entered 'K' which is already in upper case
3. WAP to read a character from the user and test it whether it a vowel or consonant or not an alphabet.
   Input 1: Enter a character: B
   Output 1: The entered character 'B' is a consonant
   Input 2: Enter a character: E
   Output 2: The entered character 'E' is a vowel
   Input 3: Enter a character: %
   Output 3: Entered character % is not an alphabet
4. WAP to display the grade system of KIIT University based on total marks secured by a student in a semester. Use else-if ladder statement. Calculate the grade of the student according to the percentage of the mark:
   - if percentage mark is greater than or equal to 90 then grade is O.
   - if percentage mark is greater than or equal to 80 and less than 90 then grade is E.
   - if percentage mark is greater than or equal to 70 and less than 80 then grade is A.
   - if percentage mark is greater than or equal to 60 and less than 70 then grade is B.
   - if percentage mark is greater than or equal to 50 and less than 60 then grade is C.
   - if percentage mark is greater than or equal to 40 and less than 50 then grade is D.
   - if percentage mark is less than 40 then grade is F.

   Input 1: Enter total mark secured by the student: 55
   Output 1: Secured grade is C
   Input 2: Enter total mark secured by the student: 95
   Output 2: Secured grade is O
5. WAP to calculate the electric bill by inputting the previous and present meter reading. The bill amount for 1st 100 units Rs 1.40 per unit, for next 100 units Rs 2.50 per unit and for rest units Rs 3.20 per unit.
   Input: Enter the previous meter reading: 3500
   Enter the current meter reading: 4000
   Output: Bill Amount: 1350

Home Assignments

1. WAP to test whether a number entered through keyboard is ODD or EVEN.
   Input 1: Enter a number: 19

Output 1: 19 is an ODD number
Input 2: Enter a number: 40
Output 2: 40 is an EVEN number

2. WAP to check whether a character entered through keyboard is a digit, letter, or special character.
   Input 1: Enter a character: 3
   Output 1: The entered character 3 is a digit
   Input 2: Enter a character: &
   Output 2: Entered character & is a special character
3. Write a C program to determine eligibility for admission based on the following criteria:
   Marks in Maths >=65, Marks in Phy >=55, Marks in Chem>=50 and Total in all three subject >=190 or Total in Maths and Physics >=140
   Input 1: Enter the marks obtained in Physics, Chemistry and Mathematics: 65 51 72
   Output 1: The candidate is not eligible for admission.
   Input 2: Enter the marks obtained in Physics, Chemistry and Mathematics: 65 58 72
   Output 2: The candidate is eligible for admission.
4. WAP to input any two integers, and provide a menu to the user to select any of the options as add, subtract, multiply or divide. Display the result according to the chosen options.
   Input: Enter two numbers: 3 6
   1. Add
   2. Subtract
   3. Multiply
   4. Divide
   Enter your choice: 1
   Output: Result = 9
5. Write a program in C to read any month number in integer and display the number of days for this month.
   Input: Enter the month number: 3
   Output: Month have 31 days

Book Exercises

1. A set of two linear equations with two unknowns x_1 and x_2 is given below.

$$ax_1 + bx_2 = m$$
$$cx_1 + dx_2 = n$$

The set has the following unique solution provided the denominator is not equal to zero.

$$x_1 = \frac{md - bn}{ad - cb}$$
$$x_2 = \frac{na - mc}{ad - cb}$$

WAP that will read the values of constants a, b, c, d, m, and n and compute the values of x_1 and x_2. An appropriate message should be printed if $ad - cb = 0$. [Page No: 167, Exercise 6.3]
Input 1: Enter the values of constants a, b, c, d, m, and n: 2 3 1 5 4 2
Output 1: $x_1 = 2$ and $x_2 = 0$
Input 2: Enter the values of constants a, b, c, d, m, and n: 2 5 2 5 4 2
Output 2: The value of x_1 and x_2 cannot be computed since $ad - cb = 0$.

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 **if 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