**LAB – 02**

**FLOWCHART**

1. You are working in an e-commerce company and need to design a flowchart for processing an online order. The flowchart should include process modules for each step involved in handling an order and decision structures to handle stock availability and payment verification.

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**PSEUDOCODE**

No

Yes

No

Yes

**LAB TASKS**

**Task 1:**

**Find if the number is multiple of 5.**

1. Start
2. INPUT “number”
3. Divide the number by 5
4. IF the remainder is zero THEN
5. PRINT (“Multiple of 5”).
6. ELSE PRINT (“Not a multiple of 5”)
7. END

**Task 2:**

**Check if a character is uppercase or lowercase.**

1. START
2. INPUT “Character”
3. IF character is >A AND <Z
4. THEN PRINT (“The character is Uppercase”).
5. ELSE IF character is >a AND <z
6. THEN PRINT (“The character is Lowercase”)
7. ELSE PRINT (“The character is not an alphabet”)
8. END

**Task 3:**

**Create a small calculator which only does ‘+’ or ‘\*‘Operations. (Hint: Take three variable inputs with one being used for the operator)**

1. START
2. INPUT “First number”
3. INPUT “Second number”
4. INPUT “Enter the operation”
5. IF user enter “+” operation THEN
6. PRINT (“a + b”)
7. ELSE IF user enter “\*” operation THEN
8. PRINT (“a\*b”)
9. ELSE PRINT (“Invalid operation”)
10. END

**Task 4:**

**Check whether a given number is positive, negative, or zero.**

1. START
2. INPUT (“Enter the Number”)
3. IF the enter number is greater than zero THEN
4. PRINT (“Number is Positive”)
5. ELSE IF the entered number is less than zero THEN
6. PRINT (“Number is Negative”)
7. ELSE PRINT (“Zero”)
8. END

**Task 5:**

**Determine if a person is a teenager (between 13 and 19 years old).**

1. START
2. INPUT (“Enter your Age”)
3. IF entered age is >13 and <19 THEN
4. PRINT (“You are a teenager”)
5. ELSE PRINT (“You are not a teenager”)
6. END

**ALGORITHM**

**LAB TASKS**

**Task 1:**

**Implement an algorithm to determine if a given year is a leap year. A leap year is divisible by 4, but not divisible by 100, except if it is also divisible by 400.**

1. Ask the user to enter “Year”.
2. If the year is divisible by 4 and 400 and is not divisible by 100, then
3. Display it is a leap year
4. If the year is divisible by 100 then
5. Display it is not a leap year

**Task 2:**

**Implement an algorithm to count the number of occurrences of each character in a given string.**

1. Ask the user to enter a string.
2. Ask the user to specify which character they want to count within that string.
3. If the character is present in the string, count the number of times it appears.
4. Display the total number of occurrences.

**Task 3:**

**Write an algorithm to calculate x raised to the power y (i.e., x^y ) without using built-in power functions.**

1. Ask the user to assign the value of x.
2. Ask the user to assign the value of x.
3. Multiply x with itself y times
4. Display the result

**Task4:**

**Calculate the area of a circle given its radius r.**

1. Ask the user to enter the radius
2. Set area to (3.14 \* r \* r)
3. Display the area the circle

**Task5:**

**Find the median of three given numbers**.

1. Ask the user to enter three number a, b and c
2. If (a≤ b ≤ c) or (c ≤ b ≤ a) then
3. Display “Median = b”
4. If (b ≤ a ≤ c) or (c ≤ a ≤ b) then
5. Display “Median = a”
6. If neither of the above conditions are met, Display “Median = c”