ALGORITHM

Some Problems to Solve

1. **Implement an algorithm for determining if an Nth is a divisor of an n Number (i.e. 2 is a divisor of 6). If so, determine if it’s an even number or odd number as well.**

* Start
* Input: Two integers n and N
* Process: Check N is a divisor of n if n mod N=0 (i.e, N divided by n leaves no remainder)
* If N is a divisor, check if N is even or odd
* If N mod 2 = 0
* Print “Even” else,
* Print “Odd”
* End

1. **Implement an algorithm where the user enters a number, and an appropriate month is displayed.**

* Start
* Input: Enter the month number (1-12)
* Read the month number
* Process: Switch the month number.
* If 1 entered Print “January”
* If 2 entered Print “February”
* If 3 entered Print “March”
* If 4 entered Print “April”
* If 5 entered Print “May”
* If 6 entered Print “June”
* If 7 entered Print “July”
* If 8 entered Print “August”
* If 9 entered Print “September”
* If 10 entered Print “October”
* If 11 entered Print “November”
* If 12 entered Print “December”
* Else, Print “Invalid number Please enter between 1 to 12”
* End

**3)** **Implement an algorithm for making a simple calculator with all the operators (+, -, \*, /, %)**

* Start
* Input: Enter the 1st Number
* Enter the 2nd Number
* Enter the operator (+, -, \*, /, %)
* Process: Let sum=0
* If operator = “+” generate result in sum (Num1 + Num2)
* Else, if operator = “-” generate result in sum (Num1 - Num2)
* Else, if operator = “\*” generate result in sum (Num1 \* Num2)
* Else, if operator = “/” and generate result in sum (Num1/Num2) if, Num2 =0
* Print “Error division by zero not allowed”
* End
* Else, if operator = “%” and if, Num2=0
* Print “Error Mod by zero is not allowed”
* Exit
* Else, generate result in sum (Num1 % Num2)
* Else, if another operator is used
* Print “Invalid operator please enter one of (+, -, \*, /, %)”
* Exit
* Else, Print the result (stored in sum)
* End

PSEUDOCODE

Some problems to solve.

**QUESTION: 1.**

**Find the maximum number in any of three variables**.

1 START

2 // Input/Output

3 INPUT variable1=a

4 INPUT variable2=b

5 INPUT variable3=c

6 // variables and Initialization

7 SET sum to 0

8 // Process Steps

9 Let a=2, b=4, c=6

10 // Conditional Statements

11 IF a>b and b>c

12 PRINT “a is greater”

13 ELSE

14 IF b>a and b>c

15 PRINT “b is greater”

16 IF b>a and c>b

17 PRINT c is greater

18 END

**QUESTION :2.**

**Take three variables as input and add them without using the + operator (Use your head for this)**

1 START

**2 // Input/Output**

3 INPUT 3 variable a, b, c

**4 // variables and Initialization**

5 SET sum to 0

**6 // Process Steps**

7 Multiply b and c by negative sign

8 Subtract the variables b and c by a

9 store the result in sum variable

10 PRINT “Sum”

11 END

**QUESTION :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/Output**

3 Enter the 1st variable and store it in num 1

4 Enter the 2nd variable and store it in num 2

5 Enter the 3rd variable and store it in num 3

**6// variables and Initialization**

7 SET sum to 0

**8 // Process Steps and // Conditional Statements**

9 IF the operator is ‘+’ Add num1+ num2 and store result in sum variable

10 IF the operator is ‘-’ Subtract num1- num2 and store result in sum variable

11 IF the operator is neither ‘+’ nor ‘-‘

12 PRINT “Invalid operator”

13 PRINT “SUM”

14 END