

Pseudocode Problems:

- **Write pseudocode to find the smallest number among three given variables. Implement a decision-making structure to compare the variables.**

```
INPUT a,b,c
Smallest = a
If Smallest > b then
    Smallest = b
Endif
If Smallest > c then
    Smallest = c
Endif
OUTPUT Smallest
```

- **Develop pseudocode for a basic calculator that performs multiplication and division. The pseudocode should prompt the user for two numbers and an operator, then display the result of the operation.**

```
OUTPUT "Enter two numbers and an operator * or / "
INPUT x, y, op
If op == "*" then
    OUTPUT x*y
Else
    OUTPUT x/y
```

Algorithms:

- **Write an algorithm to determine whether a number is a prime number. The algorithm should iterate through possible divisors and determine if the number has any divisors other than 1 and itself.**
1. Input a number
 2. Use a while loop with two conditions, a flag (to check if the remainder was 0, inside the loop) or not and another check which compares a counter value with the number.
 3. Initialize the flag variable to FALSE and counter variable to 2
 4. The loop will terminate when either the flag becomes TRUE or the counter becomes equivalent to ((input number/2)+1).
 5. Inside the loop Use an if statement to compare the value of Input number modulus counter with zero, if the condition is true reverse the flag variable value.
 6. Increment the counter variable inside the loop
 7. After the loop terminates print "Prime" if the flag was TRUE or "NOT PRIME" if the flag was FALSE

- **Create an algorithm that asks the user for a day number (1-365) and outputs the corresponding day of the week, assuming that January 1st is a Monday.**
1. Prompt the user to input a number between 1-7 and store it in a variable
 2. decrement the value by 1 and then apply modulus on the value by 7 $((\text{number}-1)\text{MOD } 7)$ and store the calculated value in the same variable
 3. Use if statements to output the corresponding day of the week using the following values:
 - 0 for Monday
 - 1 for Tuesday
 - 2 for Wednesday
 - 3 for Thursday
 - 4 for Friday
 - 5 for Saturday
 - 6 for Sunday