INFORMATICS INSTITUTE OF TECHNOLOGY

BEng/ BEng (Hons) Software Engineering

Module – 4COSC006C - Software Development I

Lecturer - Mr. Mithshan jalangan

Assessment type –

Assessment topic – Creating Flow Charts

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Question 1 (Easy):

Problem: Write pseudocode and create a flowchart for a program that takes two numbers as input and displays their sum.

Pseudocode

```
BEGIN
   #Getting input
     Number1 = INPUT (“Enter the first number”)
     Number2 = INPUT (“Enter the second number”)
   #Calculate the sum of the two numbers
     Sum = Number1 + Number2
   #Output
     Display (“Sum id: “+ Sum)
END
```

Question 2 (Intermediate):

Problem: Write pseudocode and create a flowchart for a program that finds and displays the largest number from a list of 10 numbers.

Pseudocode

```
BEGIN
   #Getting variables
      Largest number = 0
   #Create the loop to input and compare all 10 numbers
```

```
    FOR a FROM 1 TO 10
      INPUT “Enter a number” + a + “:”
      IF number > Largest number
        Largest number = number
      END IF
    END FOR
  #Get the output as largest number
    OUTPUT “The largest number is : “ Largest number
END
```

Question 3 (Moderate):

Problem: Write pseudocode and create a flowchart for a program that checks if a given number is prime or not and displays the result.

Pseudocode

```
BEGIN
  #Getting inputs
    Number = INPUT (“Enter the number :”)
    Is_Prime _number = TRUE
  #Creat the loop to check the number divisibility
    Divisor  = 2
    WHILE Divisor  < Number
      IF Number MOD Divisor + 0
```

```
        Is_Prime_number = FALSE
        EXSIT WHILE
      END IF
    Divisor = Divisor + 1
    END WHILE
  #Get the outputs as prime number or not the prime number
    IF Is_Prime_number
     PUTPUT Number “is prime number”
    ELSE
    OUTPUT Number “is no a prime number”
  END IF
END
```

Question 4 (Challenging):

Problem: Write pseudocode and create a flowchart for a program that calculates the factorial of a number using a recursive function.

Pseudocode

```
BEGIN
  #Getting inputs
    Number = “Enter a number : “
  #Chethe number is negative or positive
    IF Number < 0
     OUTPUT “Negative numbers can not be a factorial number.”
```

```
    ELSE
      #Add a function to calculate the factorial values  and expand the number
      Factorial = CalculateFactorial(Number)
    #Show the output
    OUTPUT "The factorial of the" Number "is" Factorial
    END IF
END
```

Question 5 (Easy):

Problem: Write pseudocode and create a flowchart for a program that calculates and displays the factorial of a given number using a loop.

Pseudocode

```
BEGIN
  #Getting inputs
    Number = INPUT ("Enter a number")
    #Get the factorial to number 1
    Factorial = 1
  #Creeate a loop to calculate the factorial values
    A = 1
    WHILE A <= Number
      Factorial = Factorial *1
      A = a + 1
```

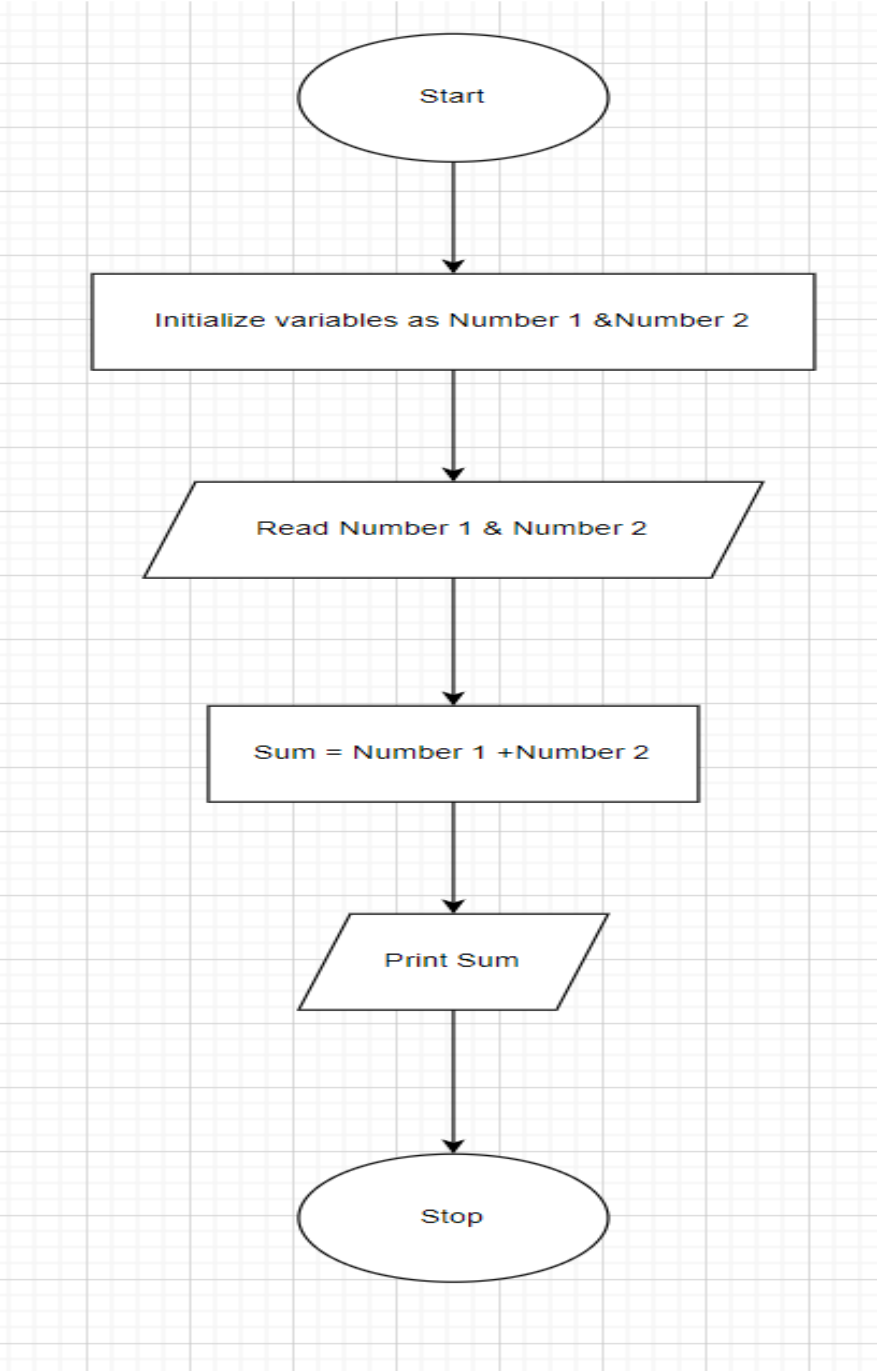
```
    END WHILE
  #Showing outputs
    DISPLAY (“The factorial is: “ + Factorial)
END
```

Question 6 (Intermediate):

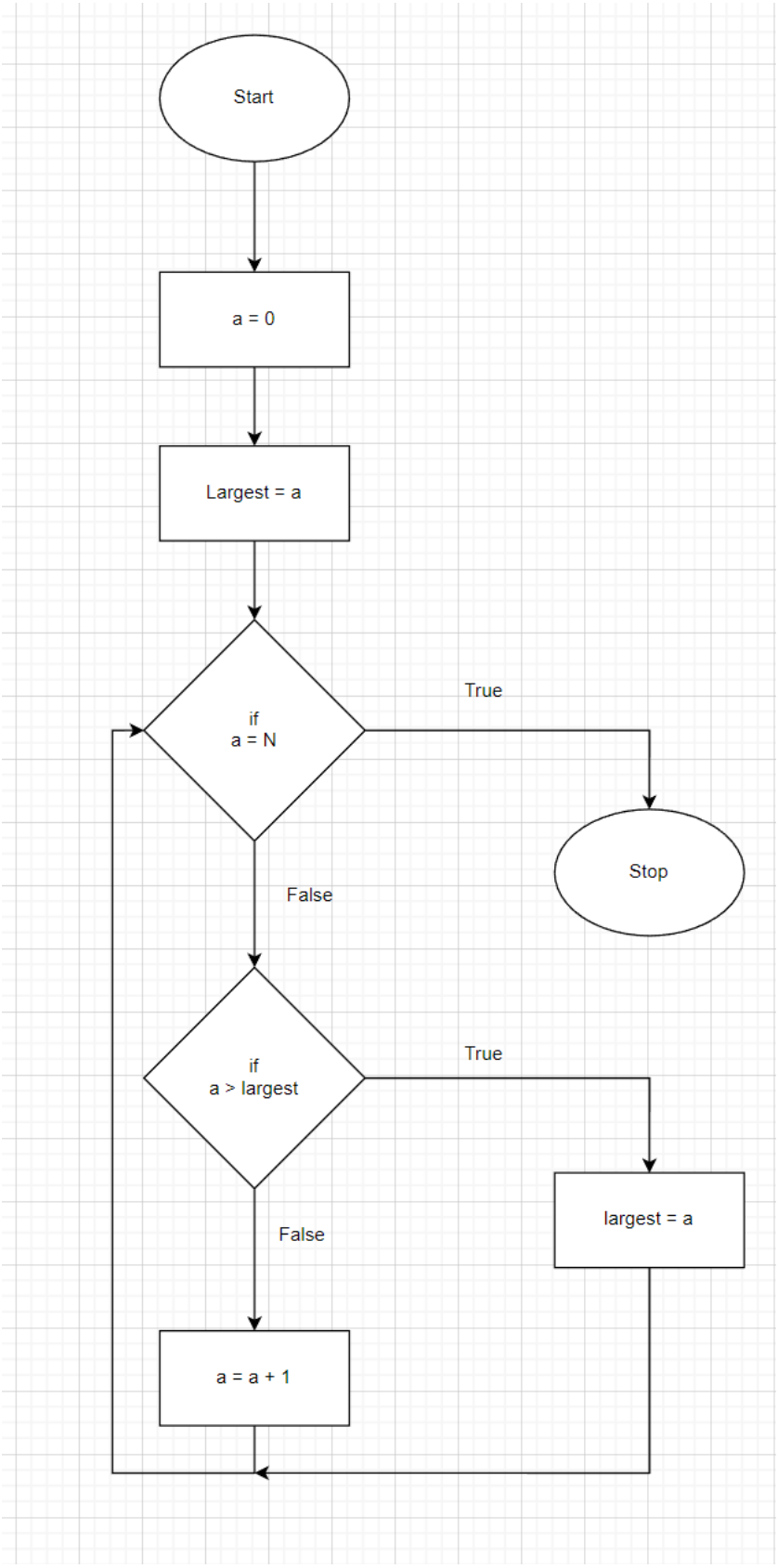
Problem: Write pseudocode and create a flowchart for a program that simulates a simple bank account system. The program should allow users to deposit, withdraw, and check their balance.

Pseudocode

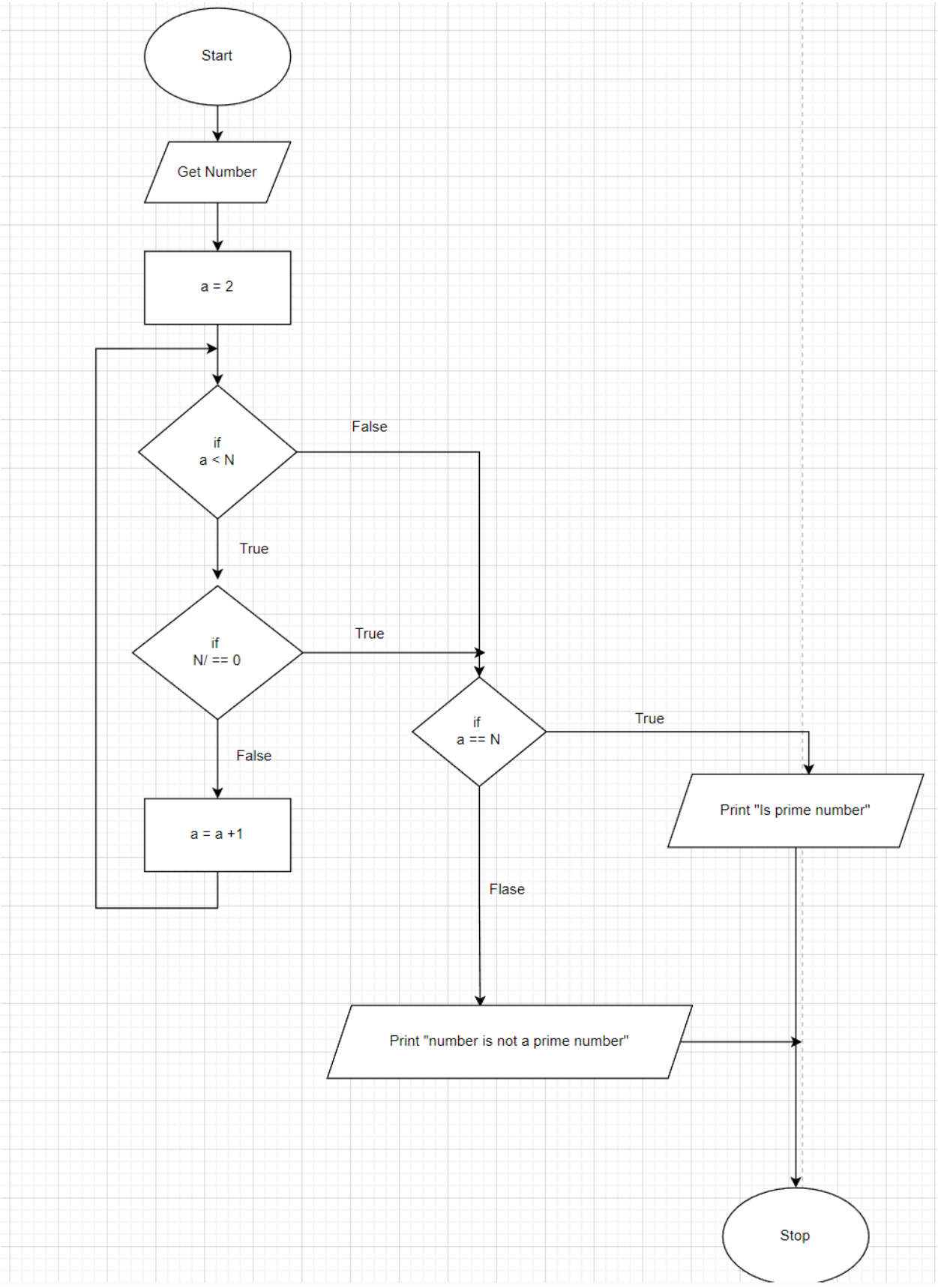
Q 1,


Start
Initialize variables as Number 1 &Number 2
Read Number 1 & Number 2
Sum = Number 1 +Number 2
Print Sum
Stop

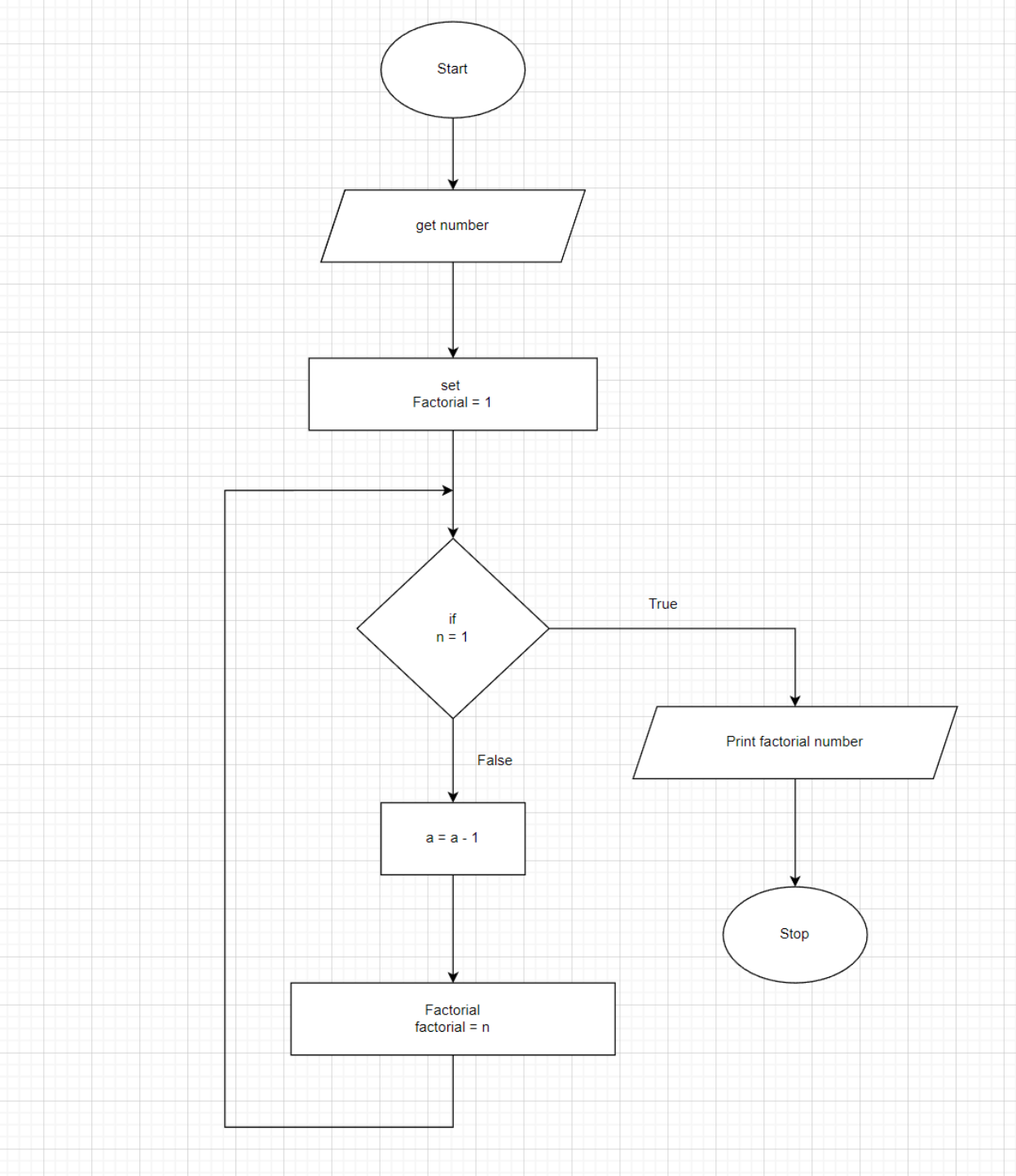
Q 2,


Start
a = 0
Largest = a
if
a = N
True
Stop
False
if
a > largest
True
largest = a
False
a = a + 1

Q 3,


Start
Get Number
a = 2
if
a < N
False
True
if
N/ == 0
True
False
a = a +1
if
a == N
True
Print "Is prime number"
Flase
Print "number is not a prime number"
Stop

Q 4,


Start
get number
set
Factorial = 1
if
n = 1
True
Print factorial number
False
a = a - 1
Stop
Factorial
factorial = n