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LAB 2 TASKS:

Q.1 -Design a flowchart, Pseudocode, Algorithm for processing a customer order at a restaurant,

including handling special requests (Like add on).

ALGORITHM:

1. Greet the customer by displaying "Welcome, How may I help you"
2. Display menu to the customer
3. Take order from the customer
4. Input customer's order as individual items
5. Ask the customer for adding add on by displaying" Would you like some add ons"
6. IF yes then
    a. Display "What would you like to add"
    b. Display add-ons menu to the customer
    c. Read Customer's request
    d. Add the selected add-ons to the bill.
7. Calculate Bill by taking sum of prices of each item
8. Display Bill to the customer
9. Receive Payment from the customer
10. Display "Thank you for purchasing"

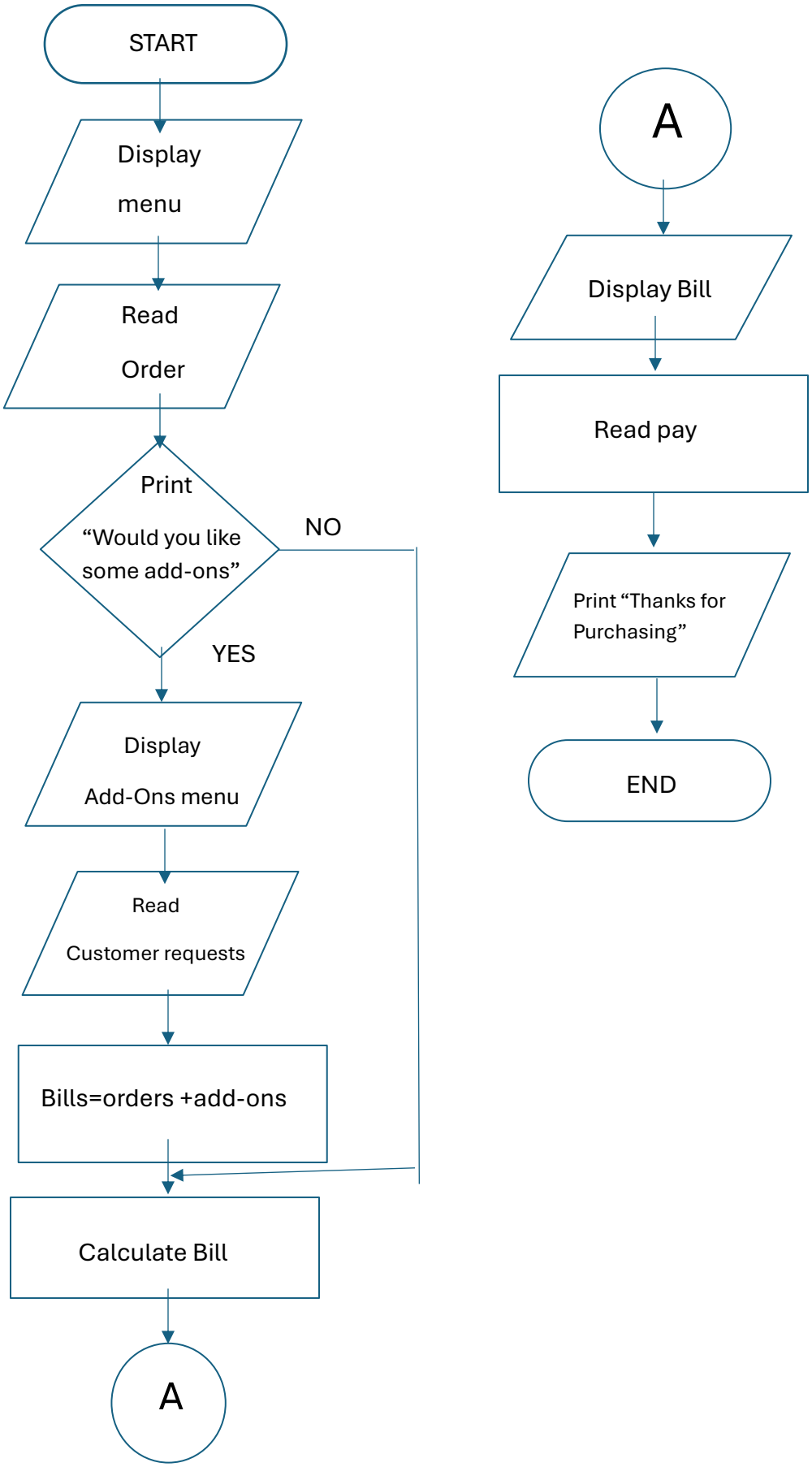
PSUEDOCODE:

1. Start
2. Print "Welcome, How may I help you"
3. Print menu
4. Read order from the customer

5. Print “If you like to add some add-ons”
6. Read add-on
7. If add on = 1
    a. Print”What would you like to add”
    b. Print add-ons menu
    c. Read add-ons request from the customer
    d. Set Bill = Order + add-ons
8. Calculate Bill
9. Display Bill

11. Read Payment from the customer
12. Print” Thank you for purchasing”
13. End

FLOWCHART:


START
Display menu
Read Order
Print "Would you like some add-ons"
NO
YES
Display Add-Ons menu
Read Customer requests
Bills=orders +add-ons
Calculate Bill
A
A
Display Bill
Read pay
Print "Thanks for Purchasing"
END

Task 02

2. Design a flowchart, Pseudocode, Algorithm for handling a customer's deposit transaction at a bank, including checks for account validity and deposit amount conditions.

ALGORITHM:

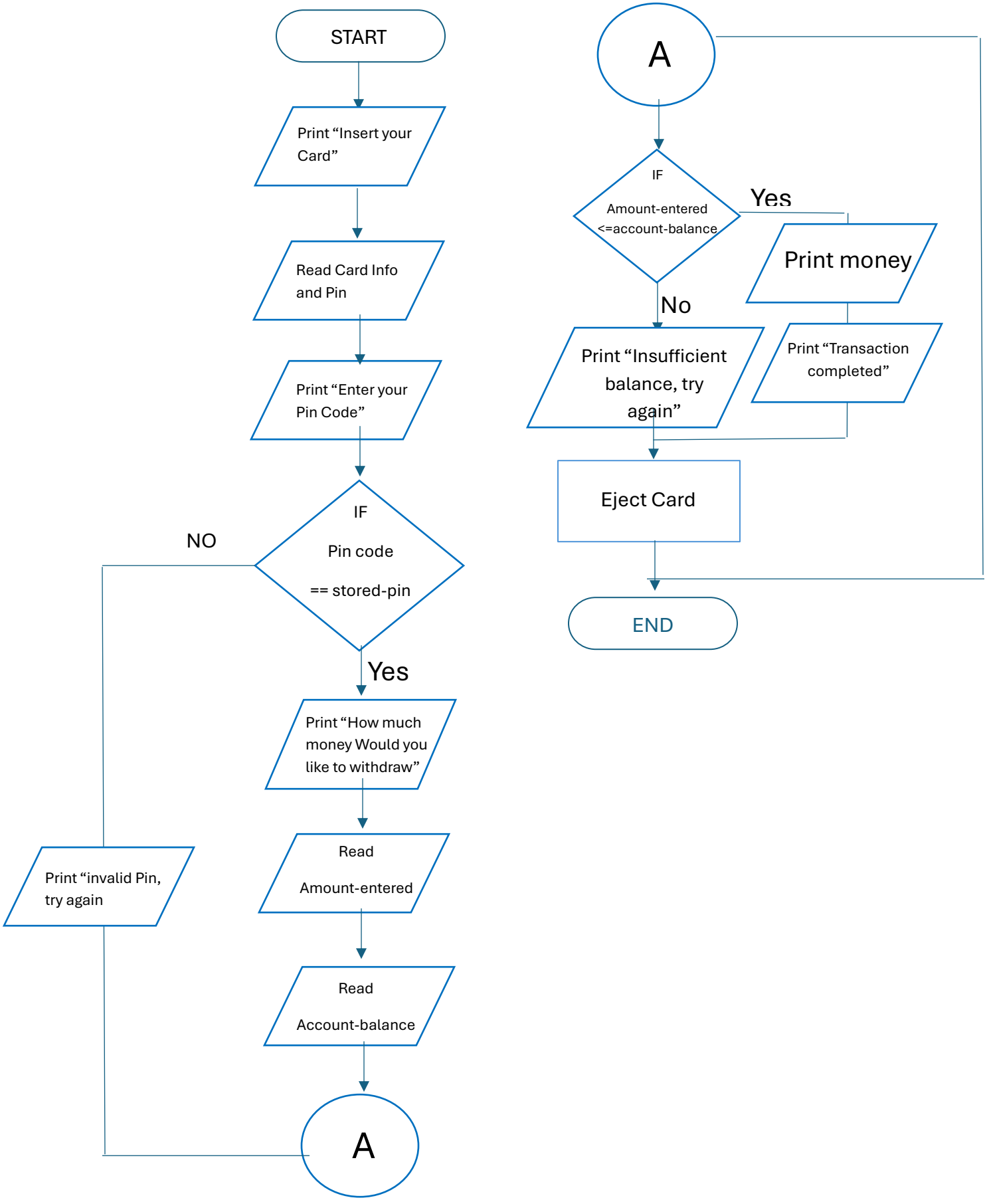
1. Start
2. Ask the user to enter the card
3. Read Card information
4. Ask the user for PIN Code
5. Compare the pin code with stored pin code
6. If matches, then proceed to the next step
7. Else End the program
8. Display “How much money would you like to draw?”
9. Read the amount entered by the user
10. Read User’s account balance
11. IF equal amount is less than or equal to account balance then
    i. Deduct the amount from the account’s balance
    ii. Dispense the money
    iii. Display “Transaction completed
    iv. Return the card to the user
    v. End
12. Else
    vi. Display “Insufficient funds, Enter another amount
    vii. End
13. End

PSEUDOCODE:

1. Start
2. Print “Insert your card”
3. Read Card information and stored_pin

4. Print “Enter pin code”
5. IF pin code == stored_pin
    a. Print “How much amount would you like to withdraw?”
    b. Read the amount entered by the user
    c. Read account_balance
    d. IF amount_entered <= account_balance
        i. Deduct amount from account_balance
        ii. Print money
        iii. Print “Transaction completed, please take your card”
        iv. Eject Card
        v. End
    e. Else
        i. Print “Insufficient balance, Try again later”
        ii. Eject Card
        iii. End
6. Else
    a. Print “Invalid pin, Please try again”
    b. Eject Card
    c. End

FLOWCHART:


START
Print “Insert your Card”
Read Card Info and Pin
Print “Enter your Pin Code”
IF Pin code == stored-pin
NO
Yes
Print “invalid Pin, try again
Print “How much money Would you like to withdraw”
Read Amount-entered
Read Account-balance
A
A
IF Amount-entered <=account-balance
Yes
No
Print money
Print “Insufficient balance, try again”
Print “Transaction completed”
Eject Card
END

Task 03

3. Design a flowchart, Pseudocode, Algorithm to determine which of three provided numbers is the greatest.

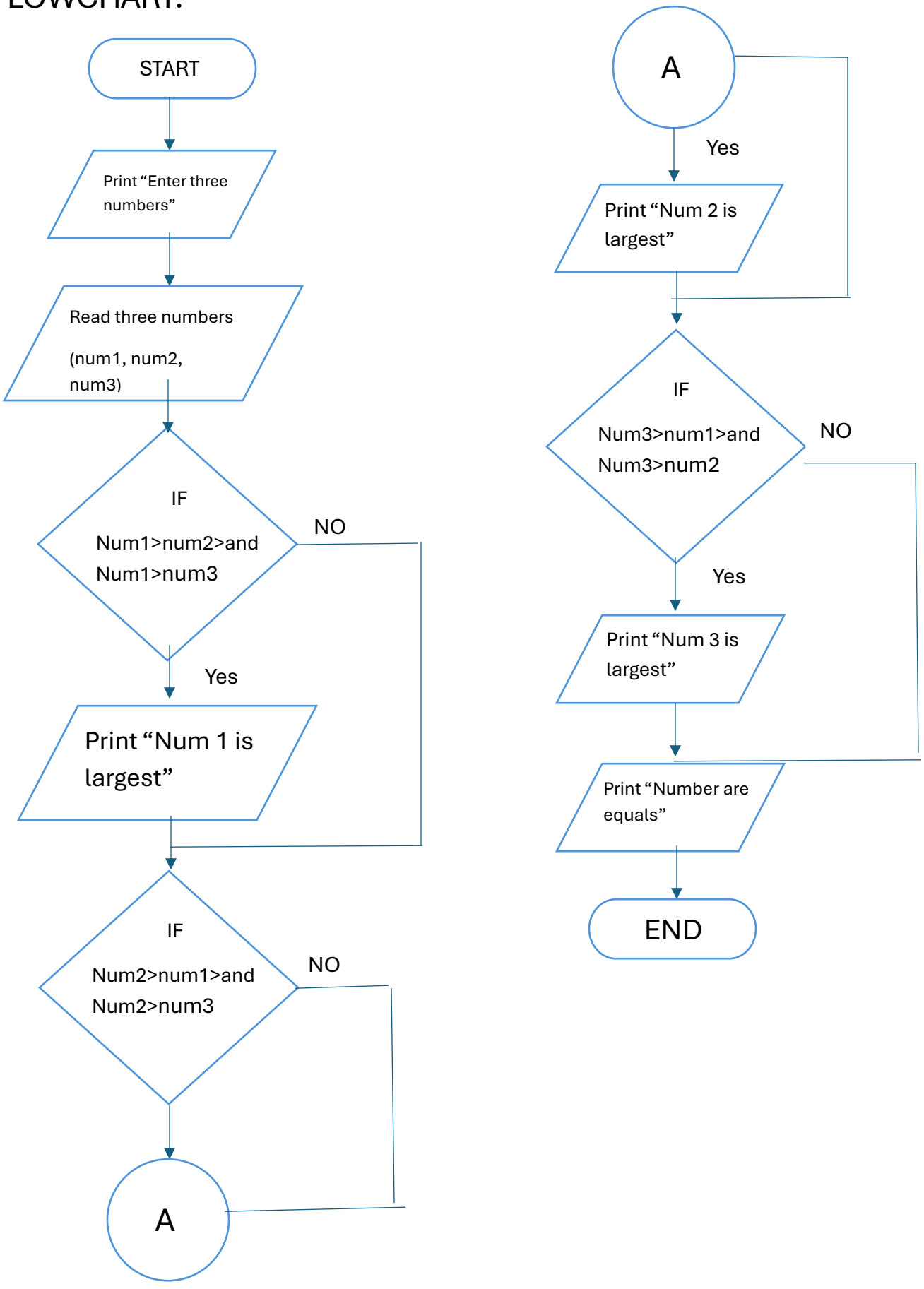
PSUEDOCODE:

1. Start
2. Print “Enter three numbers:”
3. Read three numbers (num1, num2, num3)
4. IF num1>num2 and num1>num3
   Print “Number 1 is the largest”
5. Else if num2>num1 and num2>num3
   Print “Number 2 is the largest”
6. Else if num3>num1 and num3>num2
   Print “Number 3 is the largest”
7. Else
   Print “Numbers are Equal”
8. End

ALGORITHM:

1. Ask the user to input three number
2. Read three numbers
3. Compare number 1 with number 2 and 3 to check if number 1 is larger
4. Compare number 2 with number 1 and 3 to check if number 2 is larger
5. Compare number 3 with number 1 and 2 to check if number 3 is larger
6. Print the largest number

FLOWCHART:


START
Print “Enter three numbers”
Read three numbers (num1, num2, num3)
IF Num1>num2>and Num1>num3
NO
Yes
Print “Num 1 is largest”
IF Num2>num1>and Num2>num3
NO
A
A
Yes
Print “Num 2 is largest”
IF Num3>num1>and Num3>num2
NO
Yes
Print “Num 3 is largest”
Print “Number are equals”
END

TASK 04

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

ALGORITHM:

1. Ask the user to enter a month number between 1 to 12

2. Read the month number

3. IF month number == 1

    Then month = “January”

4. IF month number == 2

    Then month = “February”

5. Else IF month number == 3

    Then month = “March”

6. Else IF month number == 4

    Then month = “April”

7.Else IF month number == 5

    Then month = “May”

8.Else IF month number == 6

    Then month = “June”

9.Else IF month number == 7

    Then month = “July”

11.Else IF month number == 8

    Then month = “August”

12.Else IF month number == 9

Then month = “September”

13.Else IF month number == 10

Then month = “October”

14Else IF month number == 11

Then month = “November”

15.Else IF month number == 12

Then month = “December”

16.Else

Print “Invalid Month Number”

17.Print “The month is: ”, month

18.End

Task No 5

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

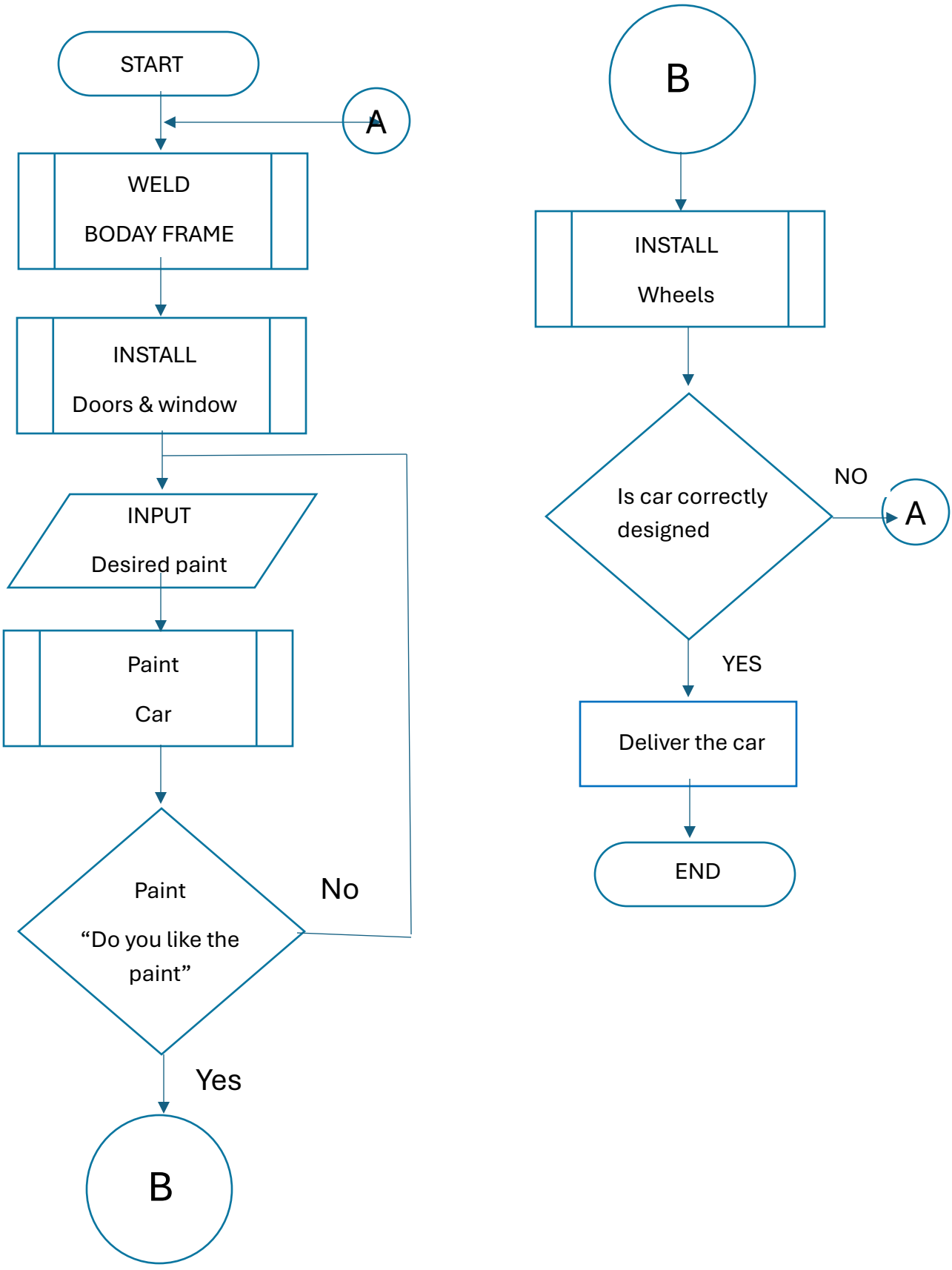
PSEUDOCODE:

1. Start
2. Print "Enter the first number:"
3. Read num1
4. Print “Enter the second number:"
5. Read num2
6. Print "Enter the operation Add (+) or Subtract (-)"
7. Read operator
8. IF operator == '+' then
    a. result = num1 + num2
9. Print "The result of addition of first and second number is”, result
10. Else if operator == '-' then
    a. result = num1 - num2
    b. Print "The result of subtraction of first and second number is ", result
11. Else
12. Print "Invalid operator. Please enter either + or -."
13. End

Task No 6

6. You are working at Toyota Indus Motors and want to assemble a car. Design a flowchart with proper process modules and decision structures to replicate a pipeline production.

FLOWCHART:


START
A
WELD
BODAY FRAME
INSTALL
Doors & window
INPUT
Desired paint
Paint
Car
Paint
“Do you like the paint”
No
Yes
B
B
INSTALL
Wheels
Is car correctly designed
NO
A
YES
Deliver the car
END

Task No 7

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

Algorithm:

1. Start
2. Ask the user to enter first number
3. Ask the user to enter second number
4. Ask the user to enter the operation Addition (+), Subtraction (-),Division (/), Multiplication (*) or Modulus (%)
5. Set Addition = Number 1 + Number 2
6. Set Subtraction = Number 1 – Number 2
7. Set Multiplication = Number 1 * Number 2
8. Set Division = Number 1/ Number 2
9. Set Modulus = Number 1 % Number 2
10. IF operator = Addition then
    a. Print "The result of addition of first and second number is", Addition
11. Else if operator = Subtraction then
    b. Print "The result of subtraction between first and second number is ", Subtraction
12. Else if operator = Multiplication then
    c. Print "The result of multiplication between first and second number is", Multiplication
13. Else if operator = Division then
    d. Print "The result of division of first number by second number is ", Division
14. Else if operator = Modulus then
    e. Print "The result of Number 1 mod Number 2 is", Modulus
15. Else
    f. Print "Invalid operator. Please enter either + or -."
16. End

Task No 9

9.Why we use .gitignore

Answer:

.gitignore is a text file in git which species which files or directories are to be ignored by the git, which means that those files will remain untracked by the git. It is mainly used for excluding unnecessary files that are not relevant to the repository or the code, ensuring that only relevant code and resources are committed. By ignoring files .**gitignore** also helps avoid unnecessary merge conflicts and keeps the repository clean, organized, and efficient.

Task No 10

10.Difference between Algorithm and Pseudocode

ALGORITHM	PSEUODOCODE
LANGUAGE	
Algorithms are written in very plain language and include basic instructions.	Pseudocodes are written in a language that resemble programming constructs but is not actual code.
MAIN PURPOSE	
It focuses on the solution of the problem without worrying about its implementation	It provides a clear guide for coding without the restrictions of a programming language's syntax.
DETAIL	
Provides a detailed outline of the steps involved in solving a problem, often excluding specifics like variable names or control structures.	More detailed than an algorithm; includes specific instructions like loops, conditionals, and variables.
TARGET AUDIENCE	
Useful for explaining the logic of a solution to people who may not be familiar with programming.	Targeted towards programmers or those familiar with coding, helping them transition from logic to implementation.