**Task:**

**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.**

1. Start
2. Set Products = A1:A10
3. A1:A4 = 10
4. A1,A5 = 5
5. A7:10 = 3
6. Input desired product(dp)
7. If dp in Products
   1. If Products[dp] > 0
      1. Print “Your desired product is available, please proceed to payment.”
      2. Input payment details
      3. If payment = True
         1. Print “Your order has been placed successfully”
         2. Products[dp] = Products[dp] – 1
         3. Go to 8(b)
      4. Else
         1. Print ”Payment could not be verified, please try again ”
         2. Go to 7(a(ii))
   2. Else
      1. Print ”This product is out of stock”
      2. Go to 8(b)
8. Else
   1. Print “Your desired product could not be found.”
   2. Condition “another product?”
      1. Yes: Go to 6
      2. No: End

**B**

**B**

**A**

**A**

**A**

**END**

Print “Your order has been placed successfully!”

Products[dp] = Products[dp] -1

Print “Payment could not be verified, please try again”

No

Yes

Payment = True

Input payment details

No

Yes

Products = [ 'A1': 10, 'A2': 10, 'A3': 10, 'A4': 10, 'A5': 5, 'A6': 5, 'A7': 3, 'A8': 3, 'A9': 3, 'A10': 3 ]

Another Product?

No

Print “Your desired product could not be found!”

Yes

Print “Your desired product is available. Please proceed to payment!”

Yes

No

Print “This Product is out of stock”

Products[dp] > 0

dp IN Products?

Input dp

**Start**

**Pseudocode Tasks:**

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

1. START
3. INPUT number
4. IF number % 5 == 0 THEN
5. PRINT “The number is a multiple of 5”
6. ELSE
7. PRINT “The number is not a multiple of 5”
8. END

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

1. START
3. INPUT char
4. SET sum to 0
5. SET sum to number1 + number2
6. IF char == Uppercase(char) THEN
7. PRINT “The character is Uppercase”
8. ELSE IF char == Lowercase(char) THEN
9. PRINT “The character is Lowercase”
10. END

**3. Create a small calculator which only does ‘+’ or ‘\*‘Operations. (Hint: Take three variable inputs**

**with one being used for the operator)**

1. START
3. INPUT number1
4. INPUT operator
5. INPUT number2
6. SET sum to 0
7. SET sum to number1 + number2
8. SET product to number1 \* number2
9. IF operator == “+” THEN
10. PRINT sum
11. ELSE IF operator == “\*” THEN
12. PRINT product
13. ELSE
14. PRINT “Wrong operator chosen”
15. END

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

1. START
3. INPUT num
4. IF num > 0 THEN
5. PRINT “The number is positive”
6. ELSE IF num < 0 THEN
7. PRINT “The number is negative”
8. ELSE
9. PRINT “The number is zero”
10. END

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

1. START
3. INPUT age
4. IF age >= 13 AND age <= 19 THEN
5. PRINT “The person is a teenager”
6. ELSE
7. PRINT “The person is not a teenager”
8. END

**Algorithm Tasks:**

**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 400, **result** = “Leap year”
3. Else if the **year** is divisible by 100, **result** = “Not a leap year”
4. Else if the **year** is divisible by 4, **result** = “Leap year”
5. Else, **result** = “Not a leap year”
6. Print **result**

**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. Create an empty dictionary **charCount** to store character counts
3. Go through each character **char** in the **string**
4. If **char** is not in **charCount**, add it with an initial value of 1
5. Else, increment **char**’s value by 1
6. Display each **char** and it’s count from **charCount**

**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 enter base **x**
2. Ask the user to enter exponent **y**
3. Set **answer** to **1**
4. If y == 0, THEN jump to step 9
5. Set the **answer** to (**answer** x **base**)
6. **e** =|**y|** – 1
7. If e != 0, THEN go to step 3
8. If y < 0, **answer** = 1/**answer**
9. Display the **answer**

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

1. Ask the user to enter radius **r**
2. Set **Area** to (3.14 x **r** x **r**)
3. Print **Area**

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

1. Ask the user to enter number **a**
2. Ask the user to enter number **b**
3. Ask the user to enter number **c**
4. If (**a** > **b** and **a** < **c**) or (**a** < **b** and **a** > **c**), **median** = **a**
5. Else if (**b** > **a** and **b** < **c**) or (**b** < **a** and **b** > **c**), **median** = **b**
6. Else, **median** = **c**
7. Print **median**