PAC Charts

Q1: Problem: Ask the user to find the smallest of three numbers entered by the user. The

User will take 3 random values as input. (Note they can be constants).

Ans. **PAC chart for Q1**

Step	Description
Problem	Find the smallest of three number input by the user
Input	Three numbers (`num1, num2, num3`)
Output	The smallest number among three inputs
Processing	-Accept three numbers from user -Compare the three numbers to determine the smallest -Display the smallest number
Assumptions	-Input will be a numeric value can be integer or floating point. -No need to handle no invalid or non-numeric input
Algorithm	1. Start 2. Input num1, num2, num3 3. If num1 is less than num2 and num3, then smallest = num1 4. Else if num2 is less than num1 and num3, then smallest = num2 5. Else, smallest = num3 6. Output smallest 7. End

Q2: Problem: Calculate the product of the digits of a given number.

Ans. **PAC chart for Q2**

Step	Description
Problem	Calculate the product of digits of a given number.
Input	A single integer number (e.g:1,2,3,4....).
Output	The product of all the digits in the input number.
Processing	- Extract each digit from the number. - Multiply all the extracted digits together. - Output the result.
Assumptions	- Handle only numeric input (no letters or special characters). - If the number is 0, the product should be 0.

Q3: Problem: Determine if a given year is a leap year or not. Alternatively, the user would take two dates as input and calculate the number of days between them to check if the year is a leap year.

Ans. **PAC Chart for Q3**

Step	Description
Problem	Determine if given year is a leap year or not.
Input	A single integer representing a year (e.g:2024 etc.).
Output	A message indicating whether the year is a leap year or not.
Processing	- Check if the year is divisible by 4. - If it is divisible by 100, check if it is also divisible by 400. - Based on these checks, determine if it is a leap year.
Assumptions	- Handle only numeric input (no letters or special characters). - If the number is 0, the product should be 0.

Input process output chart

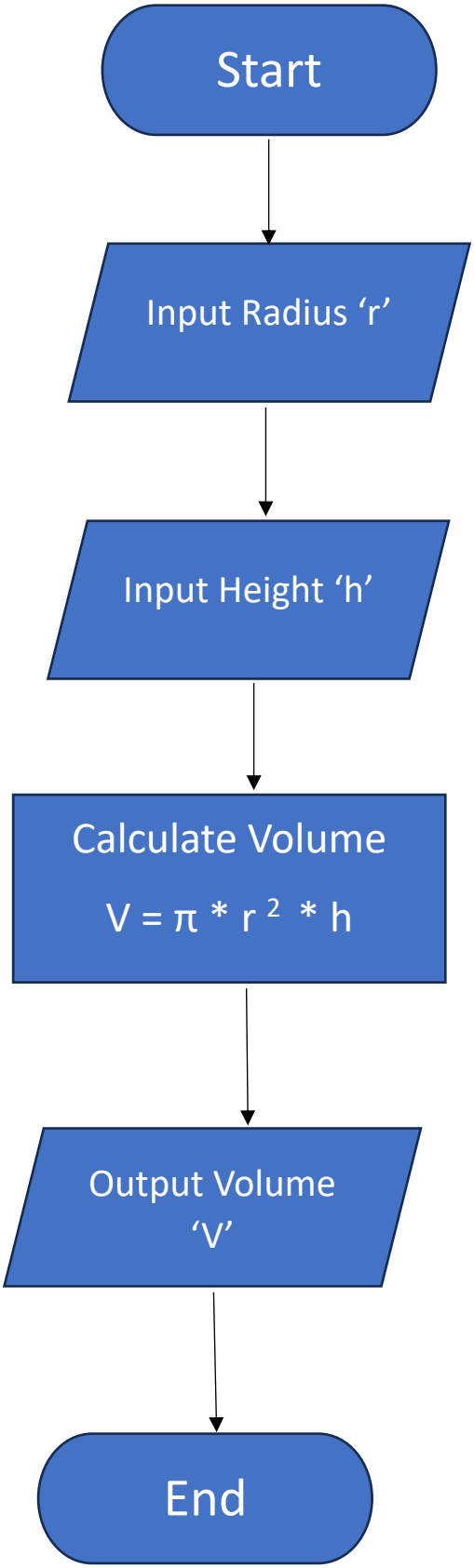
Q Problem: Calculate the product of the digits of a given number. Alternatively, the user would take two numbers as input, multiply them, and then create an IPO (Input-Process-Output) Chart for it.

Input	Process	Output
-Single integer number (e.g., 31,42,58....)	1. Initialize product to 1 2. Extract each digit using loop 3. Multiply digits with product 4. Continue until all numbers are processed	-Product of digits (e.g., 24 for 1234)

Flow Charts

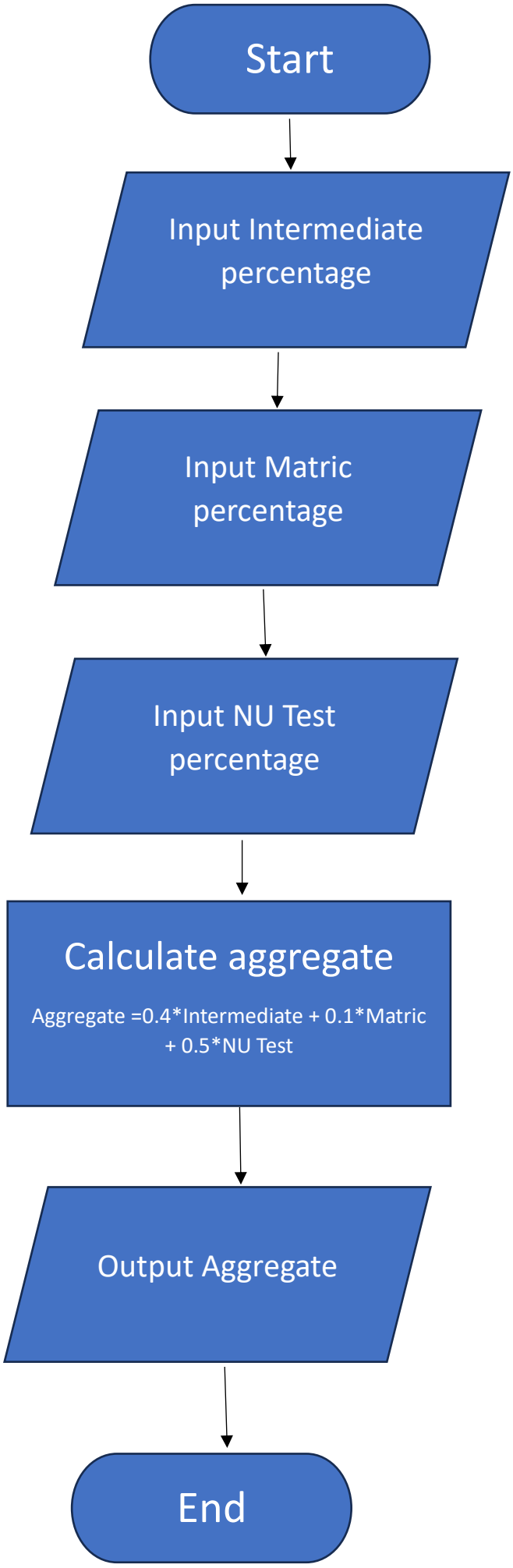
Problem: Calculate the volume of a cylinder given its height and radius.

Ans.

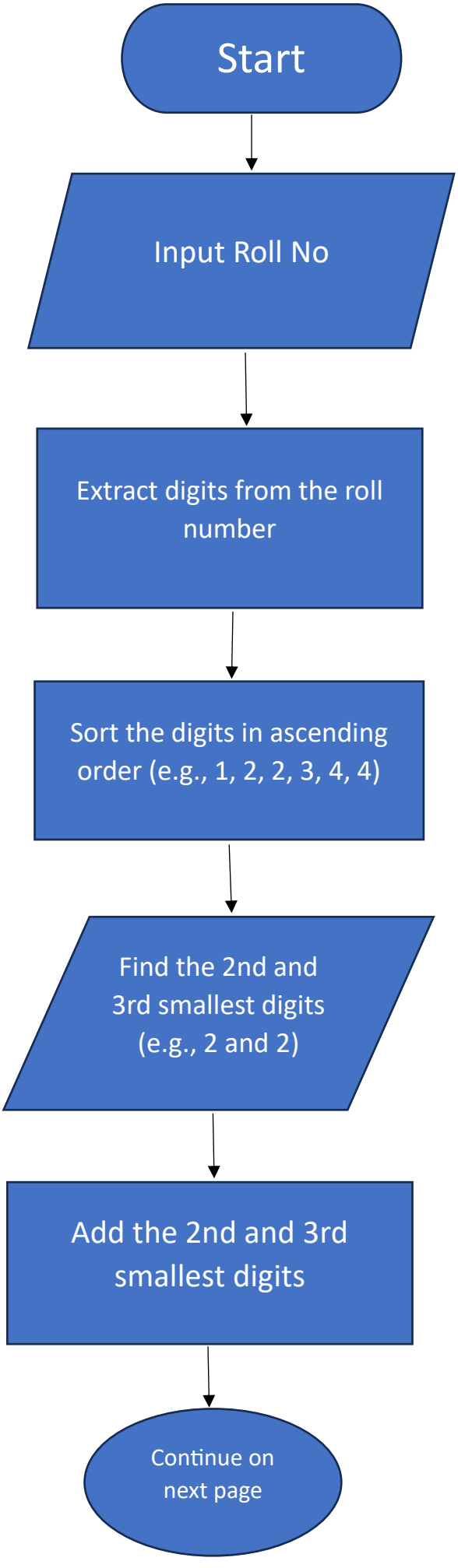


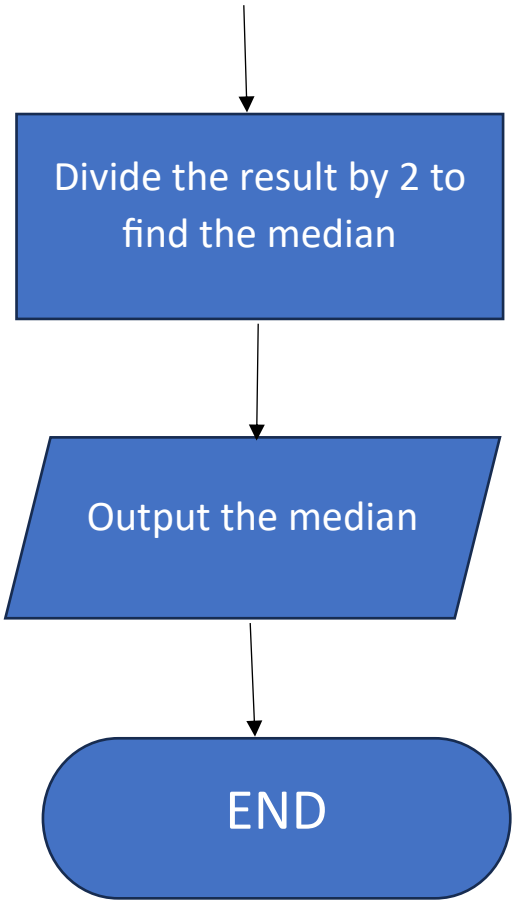
Problem: Calculate your aggregate of FAST based on grade of intermediate/ equivalency.

Ans.



Problem: Calculate the median of the digits of your roll number, for example: 24K-1234 then 2nd and 3rd term, their addition and the result divided by 2 is median i.e. 2.5.




Divide the result by 2 to find the median
Output the median
END