

Sample Problems

Example 1:

Create a flowchart that display "Hello World!".

Pseudocode:

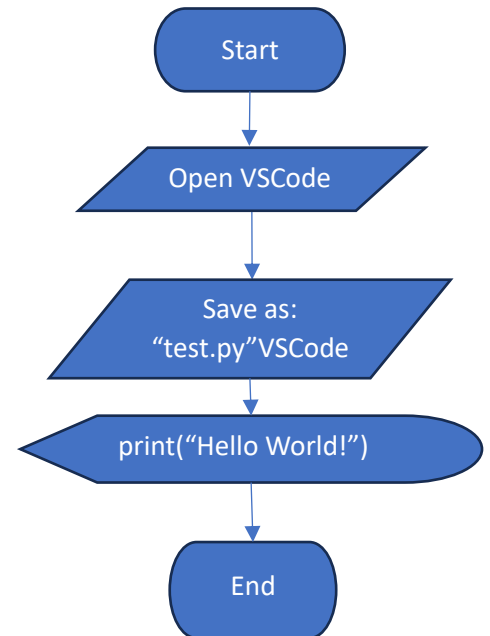
- Open VSCode
- Create python file then save as "test.py"
- Print "Hello World!"

Algorithm:

Step 1: Open VSCode

Step 2: Save as: "test.py"

Step 3: print("Hello World!")



Example 2:

Create a flowchart that display the sum of 6 and 4.

Pseudocode:

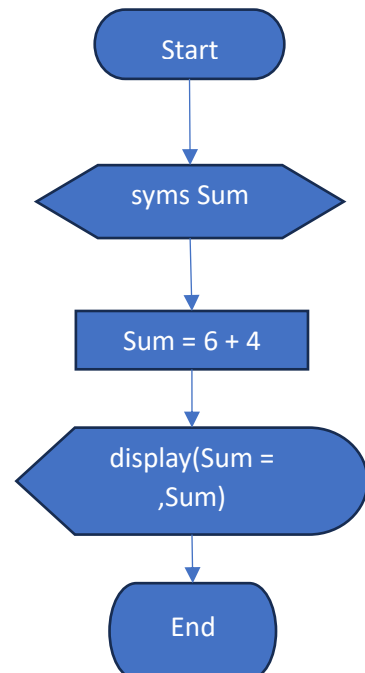
- Declare the Sum variable
- Compute Sum of 6 and 4;
Sum = 6 + 4
- Print "Sum = " then print Sum

Algorithm:

Step 1: syms Sum

Step 2: Sum = 6 + 4

Step 3: display('Sum = ',Sum)



Example 3:

Create a flowchart that ask the user's age. Compute and display his/her age 8 years from now.

Pseudocode:

- Let x is the age of the user, y is the 8 years from now, then z is the answer
- Enter the user's age
- Solution is $z = x + y$
- Print the answer

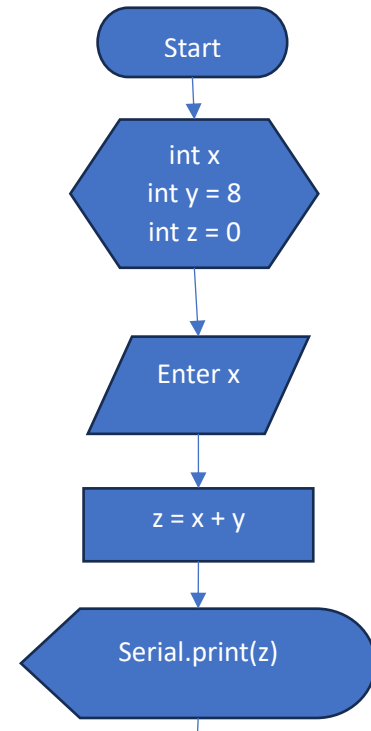
Algorithm:

Step 1: int x, int y = 8, int z = 0

Step 2: Enter x

Step 3: $z = x + y$

Step 4: Serial.print(z)



Example 4

Draw a flowchart that will ask the user to enter a character indicating the user's class section. If the user enters 'Afternoon Class' display "Your section is MEXE-3302".

Pseudocode:

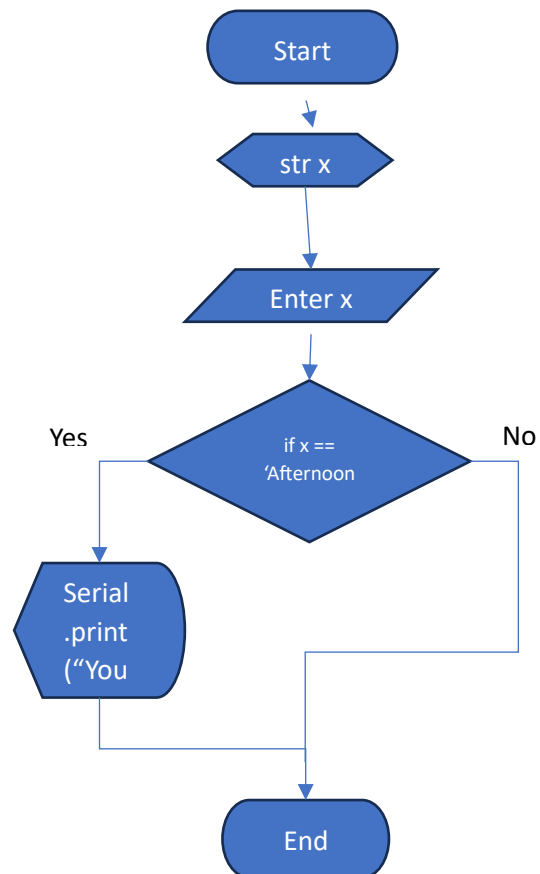
- Declare variable x
- Enter the characters in variable x
- If x is 'Afternoon Class' then print "Your section is MEXE-3302"

Algorithm:

Step 1: str x

Step 2: Enter x

Step 3: if x == 'Afternoon Class';



]Serial.print("Your section is
MEXE-3302")

Example 5

Algorithm:

Step 1: str x

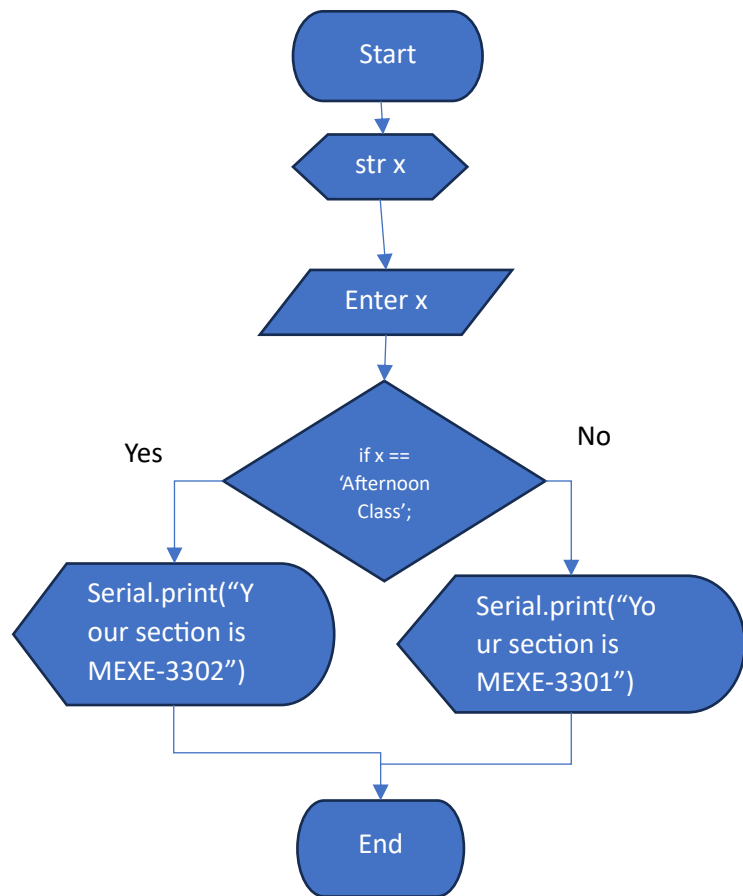
Step 2: Enter x

Step 3: if x == 'Afternoon
Class';

Serial.print("Your section is
MEXE-3302")

Step 4: if x == 'Morning Class';

Serial.print("Your section is
MEXE-3301")



Example 6 (Multiple Decision)

Create a flowchart that asks the user to push either of the buttons “FK”, “IK” and “Jacobian”. If “FK” is pushed, print the position vector (x, y, & z); if “IK” is pushed, print the joint variables (θ_1 , θ_2 , & θ_3); and if “Jacobian” is pushed, print the velocity equation VE (differential equation). Otherwise, print “Invalid”.

