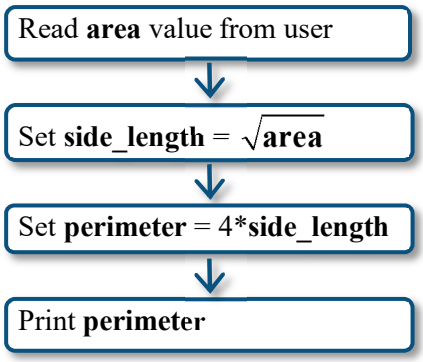
BIG IDEAS:

- Different **data types** (integer, floating point number, string, etc.) are used to store different types of information
- Programs can be designed to accept and utilize **user inputs**
- Specific functions can be accessed through imported **libraries** or **modules**

EXAMPLE

Write a program that calculates the perimeter of a square based on the area of the square entered by the user

Flowchart:



Python Code:

```
1  import math
2
3  # Read area from user.
4  area=float(input("Enter the area of the square in centimeters: "))
5
6  # Calculate the side length of the square.
7  side_length=math.sqrt(area)
8
9  # Calculate the perimeter of the square.
10 perimeter=4*side_length
11
12 # Print the perimeter of the square.
13 print("The perimeter of the square is",perimeter, "cm.")
```

Things to remember…

In Python

- If a number entered by the user is to be used in calculations, the input must first be converted to an integer (int) or a floating point number (float).
- To use π or the square root function, the **math library** must first be imported.
  - for π, use **`math.pi`**
  - for square root, use **`math.sqrt()`**