The use of variables in python:

In Python, variables are used to store and manage data. Here are some examples demonstrating the use of variables:

**Example 1: Assigning a value to a variable:**

Point: To write comments in python use the # symbol. That way what you have written will not affect your code. Comments are a good way of showing your teacher/examiner or a programmer what your program should do.

Integer means a number and string means a written value.

Example Code

# Assigning an integer value to a variable

age = 25

# Assigning a string value to another variable

name = "John"

# Printing the variables

print("Name:", name)

print("Age:", age)

**Task 1**: Go ahead and write a program that prints the age and name of your pet cat. If you do not have a pet cat just make it up! Make sure you include comments. Note that the comma in the brackets go after the colon. Example – print (“Age”: , age)

What can we do with these variables? Well, we can use it to calculate an area which could be used in a maths app written in python. Let’s have a look at the following example:

Example code 2

# Calculating the area of a rectangle using variables

length = 10

width = 5

area = length \* width

# Printing the result

print("Area of the rectangle:", area)

How can we make the above code more practical? We can change it by asking the user to input a number which is used to calculate the area of a rectangle.

# Calculating the area of a rectangle using variables

length = int(input ("enter a length "))

width = int(input("enter a width "))

area = length \* width

# Printing the result

print("Area of the rectangle:", area)

**Exercise 1:**

Create two variables, **x** and **y**, and assign them values. Print their sum.

**Exercise 2:**

Ask the user to enter their age. Store the input in a variable and print a message mentioning the user's age.

**Exercise 3:**

Create a variable **radius** and assign a value to it. Calculate the area of a circle (A = πr^2) using the given radius and print the result. (HINT: Use import math as your first line)

**Exercise 4:**

Create two variables, **name** and **country**, and assign them your name and your country. Print a message using these variables.

**Exercise 5:**

Ask the user to enter two numbers. Store the inputs in variables and print their sum, difference, product, and quotient (quotient means division)

**Exercise 6:**

Create a variable **temperature** and assign a value in Celsius. Convert it to Fahrenheit using the formula: F=9/5 C + 32 and print the result.

**Exercise 7:**

Create a variable **sentence** and assign a string. Print the length of the string. (HINT: Use len(sentence). The letters len will count the length of the string. )

**Exercise 8:**

Create a variable **is\_raining** and assign a Boolean value. Print a message based on whether it's True or False (e.g., "Bring an umbrella" or "Enjoy the weather").

**Exercise 9:**

Create a variable **price** and assign a numerical value. Apply a 20% discount to the price and print the discounted amount.

**Exercise 10:**

Create two variables, **num1** and **num2**, and assign them numerical values. Swap the values of these two variables and print the result.

**SOLUTIONS**

**Task 1**

# Define variables

cat\_name = "Whiskers"

cat\_age = 5

# Print the information

print("My pet cat's name is", cat\_name)

print("My pet cat is", cat\_age, "years old.")

You can make up your own cat name and age.

**Solutions to exercises**

**Exercise 1**

x = 5

y = 7

print(x + y)

**Exercise 2**

age = int(input("Enter your age: "))

print("You entered:", age)

**Exercise 3**

import math

radius = 3

area = math.pi \* radius\*\*2

print("The area of the circle is:", area)

**Exercise 4**

name = "John"

country = "USA"

print(f"My name is {name} and I am from {country}.")

**Exercise 5**

num1 = int(input("Enter the first number: "))

num2 = int(input("Enter the second number: "))

print("Sum:", num1 + num2)

print("Difference:", num1 - num2)

print("Product:", num1 \* num2)

print("Quotient:", num1 / num2)

**Exercise 6**

temperature\_celsius = 25

temperature\_fahrenheit = (9/5) \* temperature\_celsius + 32

print(f"{temperature\_celsius}°C is equal to {temperature\_fahrenheit}°F.")

**Exercise 7**

sentence = "Hello, Python!"

print("Length of the sentence:", len(sentence))

**Exercise 8**

is\_raining = True

if is\_raining:

    print("Bring an umbrella.")

else:

    print("Enjoy the weather.")

**Exercise 9**

price = 100

discounted\_price = price \* 0.8  # 20% discount

print("Discounted Price:", discounted\_price)

**Exercise 10**

num1 = 5

num2 = 10

print("Before swapping: num1 =", num1, ", num2 =", num2)

num1, num2 = num2, num1

print("After swapping: num1 =", num1, ", num2 =", num2)