Python Practice 001 by: Ranjitsingh Mugavekar

MACHINE LEARNING USING PYTHON || DATA SCIENCE USING PYTHON || CODING

1. Write a Python program to: • Print "Hello, World!" • Print your name and age.
2. Write a program to take two numbers from the user and display their sum.
3. Write a Python program that calculates the area of a rectangle. • Formula: area = length * width
• Take length and width as input from the user.
4. Write a Python program to swap the values of two variables.
5. Write a program to: • Take a number as input from the user. • Display whether it is even or odd.
6. Write a Python program to: • Take two numbers as input. • Display the result of addition, subtraction, multiplication, division, and modulus operations.
   Given x = 10, y = 3, what is the output of the following operations?
7. Write a program to verify: • x // y • x ** y • x % y
8. Write a Python program to calculate the simple interest. • Formula: SI = (P * R * T) / 100
9. Write a program that takes three numbers and prints their average.
10. Write a program to convert temperature from Celsius to Fahrenheit. • Formula: F = (C * 9/5) + 32
11. Write a program to check if a number is positive, negative, or zero.
12. Write a program to take a year as input and check whether it is a leap year or not.
13. Write a program to find the largest of three numbers.
14. Write a Python program to check whether a person is eligible to vote or not. • Age must be 18 or above.

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1. Write a Python program to:• Print "Hello, World!" • Print your name and age.

```python
# Interactive version with variables

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

print("Hello, World!")
print("My name is", name + ".")
print("I am", age, "years old.")
```

2. Write a program to take two numbers from the user and display their sum

```python
# This program takes two numbers from the user and prints their sum.

num1 = int(input("Enter the first number: "))
num2 = int(input("Enter the second number: "))

sum_result = num1 + num2

print("The sum of", num1, "and", num2, "is:", sum_result)
```

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3. Write a Python program that calculates the area of a rectangle. • Formula: area = length * width • Take length and width as input from the user.

```python
# This program takes length and width from the user and calculates the area of a rectangle.

length = float(input("Enter the length of the rectangle: "))
width = float(input("Enter the width of the rectangle: "))

area = length * width

print("The area of the rectangle is:", area)
```

4. Write a Python program to swap the values of two variables.

```python
# This program swaps the values of two variables entered by the user.

a = input("Enter the first value (a): ")
b = input("Enter the second value (b): ")

# Swapping the values using a temporary variable
a, b = b, a

print("After swapping:")
print("Value of a:", a)
print("Value of b:", b)
```

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5. Write a program to:• Take a number as input from the user. • Display whether it is even or odd.

```python
# This program takes a number from the user and tells if it is even or odd.

num = int(input("Enter a number: "))

if num % 2 == 0:
    print(num, "is an even number.")
else:
    print(num, "is an odd number.")
```

6. Write a Python program to:• Take two numbers as input. • Display the result of addition, subtraction, multiplication, division, and modulus operations..

```python
# This program takes two numbers as input and displays addition, subtraction, multiplication, division, and modulus results.

num1 = float(input("Enter the first number: "))
num2 = float(input("Enter the second number: "))

print("Addition:", num1 + num2)
print("Subtraction:", num1 - num2)
print("Multiplication:", num1 * num2)

# Handling division carefully to avoid division by zero
if num2 != 0:
    print("Division:", num1 / num2)
    print("Modulus:", num1 % num2)
else:
    print("Division and modulus by zero is not allowed.")
```

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7. Given x = 10, y = 3, what is the output of the following operations? Write a program to verify: a. x // y , b. x ** y , c. x % y

```python
# This program demonstrates floor division, exponentiation, and modulus operations with x=10 and y=3.

x = 10
y = 3

print("x // y =", x // y)
# Floor division (//): Divides x by y and returns the integer part of the quotient (ignores remainder)
# Example: 10 // 3 = 3

print("x ** y =", x ** y)
# Exponentiation (**): Raises x to the power y
# Example: 10 ** 3 = 10 * 10 * 10 = 1000

print("x % y =", x % y)
# Modulus (%): Gives the remainder after dividing x by y
# Example: 10 % 3 = 1 (because 10 = 3*3 + 1)
```

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8. Write a Python program to calculate the simple interest. • Formula: SI = (P * R * T) / 100

```python
# This program calculates the simple interest based on principal, rate, and time.

# Taking principal amount as input
P = float(input("Enter the principal amount (P): "))

# Taking rate of interest as input
R = float(input("Enter the rate of interest (R): "))

# Taking time period as input (in years)
T = float(input("Enter the time period (T) in years: "))

# Calculating simple interest using the formula SI = (P * R * T) / 100
SI = (P * R * T) / 100

# Displaying the calculated simple interest
print("Simple Interest is:", SI)
```

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9. Write a program that takes three numbers and prints their average

```python
# This program takes three numbers as input and calculates their average.

# Taking input of three numbers from the user
num1 = float(input("Enter the first number: "))
num2 = float(input("Enter the second number: "))
num3 = float(input("Enter the third number: "))

# Calculating the average
average = (num1 + num2 + num3) / 3

# Displaying the average
print("The average of the three numbers is:", average)
```

10. Write a program to convert temperature from Celsius to Fahrenheit. • Formula: F = (C * 9/5) + 32

```python
# This program converts temperature from Celsius to Fahrenheit.

# Taking temperature input in Celsius
celsius = float(input("Enter temperature in Celsius: "))

# Calculating Fahrenheit using the formula F = (C * 9/5) + 32
fahrenheit = (celsius * 9/5) + 32

# Displaying the temperature in Fahrenheit
print("Temperature in Fahrenheit:", fahrenheit)
```

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11. Write a program to check if a number is positive, negative, or zero.

```python
# This program checks whether a given number is positive, negative, or zero.

# Taking input number from the user
num = float(input("Enter a number: "))

# Checking the condition and printing the result
if num > 0:
    print("The number is positive.")
elif num < 0:
    print("The number is negative.")
else:
    print("The number is zero.")
```

12. Write a program to take a year as input and check whether it is a leap year or not.

```python
# This program checks whether a given year is a leap year or not.

# Taking year as input from the user
year = int(input("Enter a year: "))

# Checking leap year conditions
if (year % 400 == 0) or (year % 4 == 0 and year % 100 != 0):
    print(year, "is a leap year.")
else:
    print(year, "is not a leap year.")
```

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13. Write a program to find the largest of three numbers

```python
# This program takes three numbers as input and finds the largest among them.

# Taking input of three numbers from the user
num1 = float(input("Enter the first number: "))
num2 = float(input("Enter the second number: "))
num3 = float(input("Enter the third number: "))

# Finding the largest number using conditional statements
if (num1 >= num2) and (num1 >= num3):
    largest = num1
elif (num2 >= num1) and (num2 >= num3):
    largest = num2
else:
    largest = num3

# Displaying the largest number
print("The largest number is:", largest)
```

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14. Write a Python program to check whether a person is eligible to vote or not. • Age must be 18 or above.

```python
# This program checks if a person is eligible to vote based on age.

# Taking age as input from the user
age = int(input("Enter your age: "))

# Checking if age is 18 or above
if age >= 18:
    print("You are eligible to vote.")
else:
    print("You are not eligible to vote.")
```

Thanks for checking this out! 🙏
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