PYTHON ASSIGNMENT 2

1. Create a tuple with 5 numbers and print the first and last elements.

t = (10, 20, 30, 40, 50)

print("First element:", t[0])

print("Last element:", t[-1])

1. Write a Python program to check if an element exists in a tuple.

t = (1, 2, 3, 4)

print(3 in t)

1. How can you find the length of a tuple?

t = (1, 2, 3, 4)

print(len(t))

1. Write a program to convert a tuple into a list.

t = (1, 2, 3)

l = list(t)

print(l)

1. Write a Python code to repeat a tuple 3 times.

t = (1, 2)

print(t \* 3)

1. What happens if you try to change an element of a tuple? Explain with example.

Tuples are immutable; trying to change an element will cause an error.

t = (1, 2, 3)

t[0] = 10 # TypeError: 'tuple' object does not support item assignmen

1. Write a Python program to concatenate two tuples.

t1 = (1, 2)

t2 = (3, 4)

t3 = t1 + t2

print(t3)

1. How can you slice a tuple to get its first three elements?

t = (1, 2, 3, 4, 5)

print(t[:3])

1. Create a set with strings and print all elements.

s = {"sun", "moon", "stars"}

print(s)

1. Write a program to add multiple elements to a set using `update()`.

s = {1, 2}

s.update([3, 4, 5])

print(s)

1. Write a program to check if an element is present in a set.

s = {1, 2, 3}

print(2 in s)

1. Write a Python code to find the difference between two sets `{1, 2, 3, 4}` and `{3, 4, 5}`.

a.differenec(b)

1. What is the symmetric difference of two sets? Write a program for it.

It gives elements present in either set but not both.

a = {1, 2, 3}

b = {3, 4, 5}

print(a ^ b)

1. Can a set contain duplicate elements? Explain with example.

No, sets only contain unique elements.

s = {1, 2, 2, 3}

print(s)

1. How do you clear all elements from a set?

Using clear() method.

1. Write a program to copy a set to another set.

s1 = {1, 2, 3}

s2 = s1.copy()

print(s2)

1. Write a program to compare two integers and print if they are equal or not.
2. What is the output of `10 != 5`?

True.

1. How do you check if a number is less than or equal to another number?

Using <= operator.

1. Write a program to compare two strings entered by the user using `==`.

a = input(“enter the first number”)

b = input(“enter the second number”)

print(f “ {a} and {b} are” , a==b )

1. What is the difference between `>` and `>=` operators?

> checks if the left value is greater than the right.

>= checks if the left value is greater than or equal to the right.

1. Write a program to check if `a` is not equal to `b`.

a = 23

b=20

print(a!=b)

1. Write a program to compare the lengths of two input strings.

a = input("Enter first string: ")

b = input("Enter second string: ")

print(len(a) == len(b))

1. Write a program to check if the first number is greater than the second and print an appropriate message.

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

b = int(input("Enter second number: "))

if a > b:

print("First number is greater")

else:

print("First number is not greater")

1. What will be the output of `True or False`?

print(True or False) # Output: True

1. Write a Python condition using `and` that checks if a number is positive and less than 100.

num = 50

if num > 0 and num < 100:

print("Valid number")

1. Write a program to check if a character entered by the user is a vowel or consonant using logical operators.

ch = input("Enter a character: ")

if ch in 'aeiou':

print("Vowel")

else:

print("Consonant")

1. How does the `not` operator work? Write an example.

It inverts the boolean value.

a = True

print(not a) # Output: False

1. Write a Python code using `or` to check if a number is divisible by 3 or 5.

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

if num % 3 == 0 or num % 5 == 0:

print("Divisible by 3 or 5")

1. Write a Python program to check if a number is between 50 and 100 (inclusive) using logical operators.

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

if 50 <= num <= 100:

print("Number is in range")

1. Explain how `and`, `or`, `not` can be used in a single condition.

They can be combined to form complex logical conditions.

a = 10

b = 20

if not (a > b or b < 30) and a == 10:

print("Condition met")

1. Write a program using `not` to check if a string is not empty.

s = input("Enter a string: ")

if not s == "":

print("String is not empty")

1. Write a program to take a number from the user and print its square.

a = int(input(“ Enter the number”))

print(a\*a)

1. How do you take a floating-point number as input and print it?

Using float keyword

a = float(input(“ Enter the number”))

print(a\*a)

1. Write a program to take a space-separated list of integers from the user and print the maximum number.

nums = list(map(int, input("Enter numbers: ").split()))

print("Maximum:", max(nums))

1. Write a Python program to read a string from the user and print its length.

s = input("Enter a string: ")

print(len(s))

1. Write a program to input two numbers and print their product.

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

b = int(input("Enter second number: "))

print(a\*b)

1. Write a program to input a number and check if it is positive, negative, or zero.

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

if num > 0:

print("Positive")

else:

print("Zero or Negative”)

1. Write a program to take the user's full name as input and display it in uppercase.

s = input("Enter the name: ")

print(s.upper)

1. Write a program to take a sentence from the user and count the number of words.

sentence = input("Enter a sentence: ")

words = sentence.split()

print("Number of words:", len(words)