Python Masterclass-2 Assignment Answers

1. Write a Python program that prompts the user to enter a value and determines its data type. Print a message indicating the data type of the entered value.

Answer:

```
# Prompt the user to enter a value
value = input("Enter a value: ")


# Determine the data type of the value
data_type = type(value)


# Print a message indicating the data type
print("The entered value is of type:", data_type)
```

2. Write a Python program that prompts the user to enter a string and performs the following operations:

Print the length of the string.

Convert the string to uppercase and print the result.

Check if the string contains only alphabetic characters and print the result (True or False).

Answer:

```
# Prompt the user to enter a string
string = input("Enter a string: ")


# Print the length of the string
length = len(string)
print("Length of the string:", length)


# Convert the string to uppercase and print the result
uppercase = string.upper()
print("Uppercase string:", uppercase)


# Check if the string contains only alphabetic characters and print the result
is_alphabetic = string.isalpha()
print("Contains only alphabetic characters:", is_alphabetic)
```

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3. Write a Python program that prompts the user to enter two numbers and performs the following operations:

Print the sum of the two numbers.

Print the difference between the two numbers.

Print the product of the two numbers.

Print the result of dividing the first number by the second number.

Answer:

```
# Prompt the user to enter two numbers
num1 = float(input("Enter the first number: "))
num2 = float(input("Enter the second number: "))

# Perform the addition
sum_result = num1 + num2
print("Sum:", sum_result)

# Perform the subtraction
diff_result = num1 - num2
print("Difference:", diff_result)

# Perform the multiplication
prod_result = num1 * num2
print("Product:", prod_result)

# Perform the division
div_result = num1 / num2
print("Division:", div_result)
```

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4. Write a Python program that demonstrates various list manipulation operations, such as:

Appending elements to a list.

Removing elements from a list.

Accessing elements by index.

Slicing a list to extract a sublist.

Sorting the elements of a list in ascending order

Answer:

```
# Create an empty list
my_list = []

# Append elements to the list
my_list.append(10)
my_list.append(20)
my_list.append(30)

# Remove an element from the list
my_list.remove(20)

# Access elements by index
print("Element at index 0:", my_list[0])

# Slice the list to extract a sublist
sub_list = my_list[1:]
print("Sublist:", sub_list)

# Sort the list in ascending order
my_list.sort()
print("Sorted list:", my_list)
```

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5. Write a Python program that prompts the user to enter two tuples and performs the following operations:

Concatenate the two tuples and print the result.

Check if a specific element exists in either of the tuples and print the result (True or False).

Answer:

```
# Prompt the user to enter two tuples

tuple1 = tuple(input("Enter the first tuple elements (separated by commas): ").split(","))

tuple2 = tuple(input("Enter the second tuple elements (separated by commas): ").split(","))


# Concatenate the two tuples

concatenated_tuple = tuple1 + tuple2

print("Concatenated tuple:", concatenated_tuple)


# Prompt the user to enter a specific element

element = input("Enter a specific element to check for its existence: ")


# Check if the specific element exists in either of the tuples

element_exists = element in tuple1 or element in tuple2

print("Element exists:", element_exists)
```