completed_tuple_assignment_c_ANIL

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1 Tuple Assignments − Solved

Solutions to all 11 tuple-based Python assignments.

1.0.1 Assignment 1: Creating and Accessing Tuples

Create a tuple with the first 10 positive integers. Print the tuple.

```python
[1]: t = tuple(range(1, 11))
     print(t)
```

```
(1, 2, 3, 4, 5, 6, 7, 8, 9, 10)
```

1.0.2 Assignment 2: Accessing Tuple Elements

Print the first, middle, and last elements of the tuple created in Assignment 1.

```python
[2]: t = tuple(range(1, 11))
     first = t[0]
     middle = t[len(t)//2]   # index 5 → value 6 (for 10 elements)
     last = t[-1]
     print("First:", first)
     print("Middle:", middle)
     print("Last:", last)
```

```
First: 1
Middle: 6
Last: 10
```

1.0.3 Assignment 3: Tuple Slicing

Print the first three elements, the last three elements, and the elements from index 2 to 5 of the tuple created in Assignment 1.

```python
[3]: t = tuple(range(1, 11))
     print("First three:", t[:3])
     print("Last three:", t[-3:])
     print("Index 2 to 5:", t[2:6])   # end index is exclusive
```

```
First three: (1, 2, 3)
Last three: (8, 9, 10)
Index 2 to 5: (3, 4, 5, 6)
```

1.0.4 Assignment 4: Nested Tuples

Create a nested tuple representing a 3x3 matrix and print the matrix. Access and print the element at the second row and third column.

```python
[4]: matrix = (
         (1, 2, 3),
         (4, 5, 6),
         (7, 8, 9)
     )

     print("Matrix:")
     for row in matrix:
         print(row)

     # Second row (index 1), third column (index 2)
     element = matrix[1][2]
     print("Element at row 2, col 3:", element)
```

```
Matrix:
(1, 2, 3)
(4, 5, 6)
(7, 8, 9)
Element at row 2, col 3: 6
```

1.0.5 Assignment 5: Tuple Concatenation

Concatenate two tuples: (1, 2, 3) and (4, 5, 6). Print the resulting tuple.

```python
[5]: t1 = (1, 2, 3)
     t2 = (4, 5, 6)
     result = t1 + t2
     print(result)
```

```
(1, 2, 3, 4, 5, 6)
```

1.0.6 Assignment 6: Tuple Methods

Create a tuple with duplicate elements and count the occurrences of an element. Find the index of the first occurrence of an element in the tuple.

```python
[6]: t = (1, 2, 3, 2, 4, 2, 5)
     element = 2
     count = t.count(element)
     index = t.index(element)
```

```
print(f"Occurrences of {element}: {count}")
print(f"First index of {element}: {index}")
```

```
Occurrences of 2: 3
First index of 2: 1
```

1.0.7 Assignment 7: Unpacking Tuples

Create a tuple with 5 elements and unpack it into 5 variables. Print the variables.

```
[7]: t = (10, 20, 30, 40, 50)
     a, b, c, d, e = t
     print("a:", a)
     print("b:", b)
     print("c:", c)
     print("d:", d)
     print("e:", e)
```

```
a: 10
b: 20
c: 30
d: 40
e: 50
```

1.0.8 Assignment 8: Tuple Conversion

Convert a list of the first 5 positive integers to a tuple. Print the tuple.

```
[8]: lst = [1, 2, 3, 4, 5]
     t = tuple(lst)
     print(t)
```

```
(1, 2, 3, 4, 5)
```

1.0.9 Assignment 9: Tuple of Tuples

Create a tuple containing 3 tuples, each with 3 elements. Print the tuple of tuples.

```
[9]: t = (
         (1, 2, 3),
         (4, 5, 6),
         (7, 8, 9)
     )
     print(t)
```

```
((1, 2, 3), (4, 5, 6), (7, 8, 9))
```

1.0.10 Assignment 10: Tuple and List

Create a tuple with the first 5 positive integers. Convert it to a list, append the number 6, and convert it back to a tuple. Print the resulting tuple.

```python
[10]: t = (1, 2, 3, 4, 5)
lst = list(t)
lst.append(6)
new_tuple = tuple(lst)
print(new_tuple)
```

```
(1, 2, 3, 4, 5, 6)
```

1.0.11 Assignment 11: Tuple and String

Create a tuple with the characters of a string. Join the tuple elements into a single string. Print the string.

```python
[11]: s = "hello"
char_tuple = tuple(s)
print("Tuple of chars:", char_tuple)

rejoined = ''.join(char_tuple)
print("Rejoined string:", rejoined)
```

```
Tuple of chars: ('h', 'e', 'l', 'l', 'o')
Rejoined string: hello
```