



@pythonessdatadiaries

Python Tuple: Immutability + Concept-based Questions & Answers (for Beginners)

1. What is Tuple Immutability?

◆ In Python, Tuples are immutable, which means:

- Once a tuple is created, you cannot modify it.
- You cannot add, remove, or change its elements.
- But you can read/access its elements.

2. Why Tuple Immutability is Important?

- Safer: Data cannot accidentally change.
- Faster: Tuples are quicker to process than lists.
- Useful: Perfect for storing fixed data (like dates, coordinates, RGB values).

3. Example: Tuple Immutability

Code:

```
t = (1,2,3)
t[1] = 100
print(t)
```

Error Output:

```
TypeError                                 Traceback (most recent call last)
Cell In[7], line 2
      1 t = (1,2,3)
----> 2 t[1] = 100
      4 print(t)

TypeError: 'tuple' object does not support item assignment
```

✓ You can read values, but cannot change them.

Concept-based Tuple Questions with Answers:

1 What is a Tuple?

✓ *Tuple is an ordered, immutable collection of items, written with round brackets ().*

2 How do you create a tuple with one element?

✓ *Add a comma after the single item:*

```
t = (10,)
print(type(t))
<class 'tuple'>
```

◆ *Without comma, it will not be a tuple.*

3 Can we change values inside a tuple?

✓ *No. Tuples are immutable.*

4 Are tuples faster than lists?

✓ *Yes. Tuples are faster because they are immutable and smaller in size.*

5 Can you delete a tuple?

✓ *Yes. You can delete the entire tuple using del:*

Code:

```
t = (10,20,30) #defined tuple
del t #tuple deleted
print(t)
```

Error Output:

```
Traceback (most recent call last)
Cell In[9], line 5
      1 t = (10,20,30)
      3 del t
----> 5 print(t)
NameError: name 't' is not defined
```

◆ *But you cannot delete specific elements inside a tuple.*

6 What happens if you forget the comma in a single-element tuple?

✓ It becomes not a tuple, just that data type:

Code:

```
t = (10)
print(type(t))
```

Output:

```
<class 'int'>
```

◆ Always add a comma: (10,)

7 What is the difference between list and tuple?

✓

Feature	List	Tuple
Brackets	[]	()
Mutable	Yes	No
Faster	No	Yes

8 Can you use a tuple as a dictionary key?

✓ Yes! Because tuples are immutable and hashable.

Code:

```
d = {(1, 2): "value"}
print(d)
```

Output:

```
{(1, 2): 'value'}
```

9 *When should you use tuple over list?*

✓ *When your data must not change — use Tuple (like dates, days, configurations).*