



Tuples

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AP/IT



Tuple Assignment

- A tuple is a sequence of values.
- The values can be any type, and they are indexed by integers
- Tuples are immutable
- Example Swap to variables
 - `>>> temp = a`
 - `>>> a = b`
 - `>>> b = temp`
- Tuple assignment
 - `>>> a, b = b, a`



The left side is a tuple of variables; the right side is a tuple of expressions

- Each value is assigned to its respective variable
 - `>>> a, b = 1, 2, 3`
 - `ValueError: too many values to unpack`
- The number of variables on the left and the number of values on the right have to be the same



Tuples as return values

- a function can only return one value
- For example, if you want to divide two integers and compute the quotient and remainder
- it is inefficient to compute x/y and then $x\%y$.
- It is better to compute them both at the same time



Example



- The built-in function **divmod** takes two arguments and returns a tuple of two values, the quotient and remainder

```
>>> t = divmod(7, 3)
>>> print t
(2, 1)
```

- To store the result as a tuple use

```
>>> quot, rem = divmod(7, 3)
>>> print quot
2
>>> print rem
1
```



- example for a function that returns a tuple
- `def min_max(t):`
- `return min(t), max(t)`
- max and min are built-in functions that find the largest and smallest elements of a sequence]
- min_max computes both and returns a tuple of two values



Thank You