CPSC 231 - Lab

TUPLES, DICTIONARIES
Tuples

Tuples are just like list, but you cannot change tuples.

Tuples are immutable and it is not possible to change their value after initialization

< Tuple name > = ( < first value >, < second value >, ... )

student = ("Sepehr", "Sabour", 1995)
circle = (1.2, 4.3, 5)

"Tuples are used for grouping data"
Accessing Tuple Items

Like lists we use indexes to access the items of a tuple.

```
student = ("Sepehr", "Sabour", 1995)

student[0]
>> "Sepehr"
```
How to update a tuple

You cannot update a tuple.

You should follow these steps:

1. change tuple to a list
2. change the list
3. Turn list back to tuple
How to update a tuple

```python
student = ("Sepehr", "Sabour", 1995)
list = list(student)
list.append("September")
student = tuple(list)
```
You can use tuples in loops and conditions

For item in (1,2,3,234):
    print(item)

>> 1
>> 2
>> 3
>> 234

5 in (1,2,3,4)
>> False
Dictionaries

A dictionary is a collection of data that are presented using keys

```
student = {
    "first name": "Sepehr",
    "last name": "Sabour",
    "Year of birth": 1995
}
```
Accessing items in a dictionary

We use keys for accessing items

```
student = {
    "first name": "Sepehr",
    "last name": "Sabour",
    "Year of birth": 1995
}

student["first name"]
>> "Sepehr"
```
Update dictionaries

```python
student = {
    "first name": "Sepehr",
    "last name": "Sabour",
    "Year of birth": 1995
}

student["Grade"] = "A"
student["Year of birth"] = 1994

student = {
    "first name": "Sepehr",
    "last name": "Sabour",
    "Year of birth": 1994,
    "Grade": "A"
}
```
Removing an item

```javascript
student = {
    "first name": "Sepehr",
    "last name": "Sabour",
    "Year of birth": 1995
}

student.pop("Year of birth")

student = {
    "first name": "Sepehr",
    "last name": "Sabour",
}
```
Iteration

for x in dictionary -> keys

for x in dictionary.values() -> values

for x, y in dictionary.items() -> keys and values