Cheat-sheet: how to iterate on `structured data types`

How to iterate on `string` ?

Using `for loop`

```python
name = "prashant"

for letter in name:
    print(letter)
```

Using `while loop`

```python
name = "prashant"

i = 0
while i < len(name):
    print(name[i])
    i += 1
```

How to iterate on `list` ?

Using `for loop`

```python
lang_list = ["Python", "JavaScript", "PHP", "JAVA", "Golang", "Assembly"]

for lang in lang_list:
    print(lang)
```

Using `while loop`

```
lang_list = ["Python", "JavaScript", "PHP", "JAVA", "Golang", "Assembly"]

i = 0
while i < len(lang_list):
    print(lang_list[i], end=" ")
    i += 1
```

How to iterate on `tuple` ?

Using `for loop`

```
cricketers_tuple = ("Virat", "Dhoni", "Hardik", "Rohit", "Chahal", "Sachin")

for cricketer in cricketers_tuple:
    print(cricketer, end=" ")
```

Using `while loop`

```
cricketers_tuple = ("Virat", "Dhoni", "Hardik", "Rohit", "Chahal", "Sachin")

i = 0
while i < len(cricketers_tuple):
    print(cricketers_tuple[i], end=" ")
    i += 1
```

How to iterate on `set` ?

Using `for loop`

```
social_media = {"Twitter", "Facebook", "Instagram", "Quora"}

for platform in social_media:
    print(platform, end=" ")
```

Using `while loop`

You cannot access items in a set by referring to an index, since sets are unordered data type.

Hence the the items inside set have no index value associated with them.

How to iterate on `dictionary` ?

Using `for loop`

```
employee_dict = {
  "name": "prashant",
  "type": "full-time",
  "mode": "remote",
  "paid": "yes"
}

for key_ in employee_dict:
    print(key_, end=" ")
```

Using `while loop`

You cannot access items in a set by referring to an index, since sets are unordered data type.

Hence the the items inside set have no index value associated with them.

NOTE -

- We can iterate on `set` and `dict` ("un-ordered" data types) using `iter` and `next` function.

- We will cover it in later section.

RULE

- It is never safe to iterate through any mutable objects while we modify those objects inside the loop.

- Meaning, we should NOT delete, add, modify elements of mutable data types when iterating on them.