DATA STRUCTURE

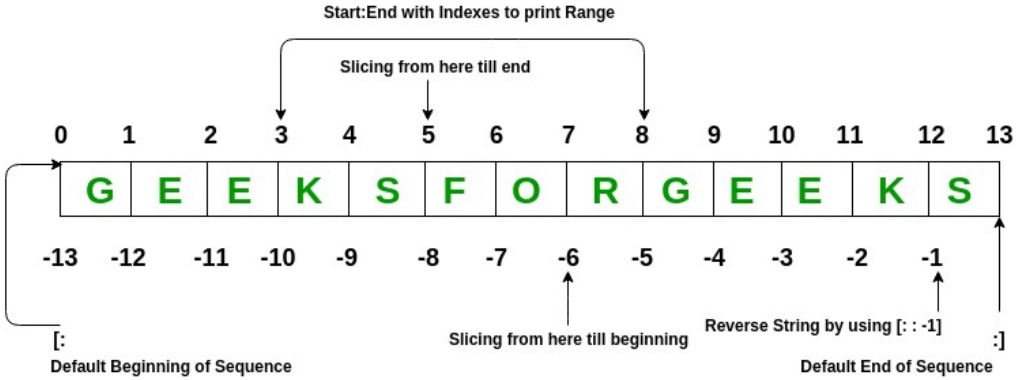
- Variable : can store only a single data
- If users have more than one data e.g. Score of each student in a class, what should they do?
- Array: can keep more than one data at a time (note: only same data type)
- number = [5,2,9,7,10,99] fruit = ['apple', 'mango', 'banana']

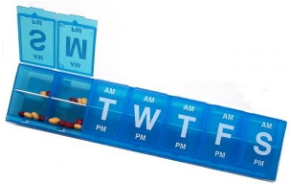
```
15  number = [5,2,9,7,10,99]
16  fruit = ['apple','mango','banana']
17  print(number)
18  print('This is the list of fruits:',fruit)
```

```
[5, 2, 9, 7, 10, 99]
This is the list of fruits: ['apple', 'mango', 'banana']
```

DATA STRUCTURE (ARRAY)

- Accessing data of an array
  - index is the position of data starting from 0



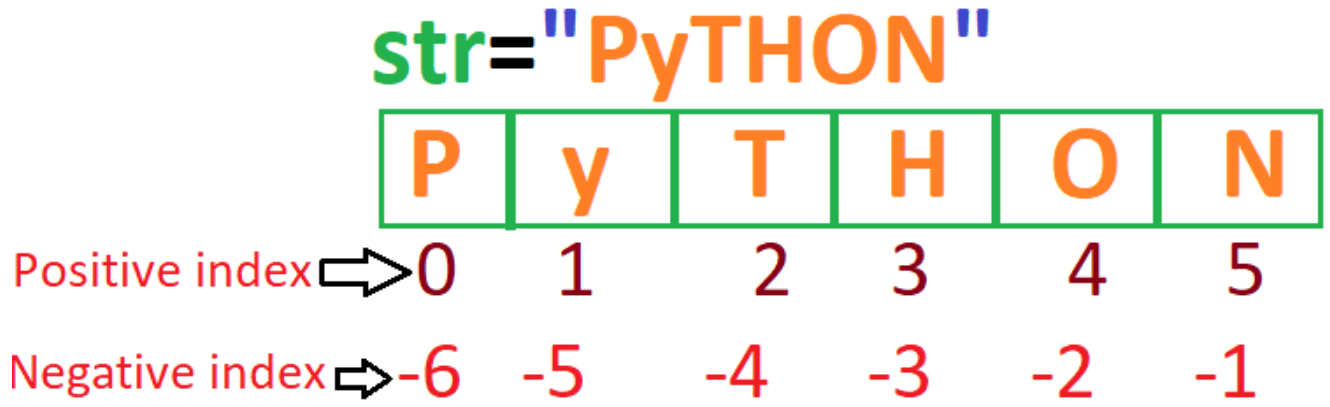



```
15  number = [5,2,9,7,10,99]
16  fruit = ['apple','mango','banana']
17
18  print(number[0],number[3])
19  print(fruit[2])
20  print(number[1:4])
21  print(fruit[1:])
```

```
5 7
banana
[2, 9, 7]
['mango', 'banana']
```

DATA STRUCTURE (ARRAY)

- String data type also has property of arrays
- Each letter of a string can be accessing using index number



DATA STRUCTURE (ARRAY)

- Array slicing : subsetting an array using [start : stop]

```
my_string = "Python Programming"

# Extract a substring from index 7 to 13 (exclusive)
substring = my_string[7:13]
print(substring)  # Outputs: "Program"

# Omitting the start or end index
start_omitted = my_string[:6]  # Equivalent to my_string[0:6]
end_omitted = my_string[7:]    # Equivalent to my_string[7:len(my_string)]

print(start_omitted)  # Outputs: "Python"
print(end_omitted)    # Outputs: "Programming"
```

DATA STRUCTURE (ARRAY)

- len() function : this function is used to count number of element in an array or number of letter in a string

```
my_string = "Hello, World!"
length = len(my_string)
print(length)  # Outputs: 13

my_list = [1, 2, 3, 4, 5]
length = len(my_list)
print(length)  # Outputs: 5
```

QUESTION

- number = [5, 8, 1]
- write a program to find the sum or average of this array

LOOPS

- From the previous exercise
  - number = [5, 8, 1]
  - write a program to find the sum and average of this array
- What would happen if the array contains 100 number?
- So, we need loops to do repetitive tasks
- Python has two loops
  - while loop
  - for loop