

## Lab 5

Lists , tuples , sets , dictionaries

1.The following is a list of 10 students ages:

```
ages = [19, 22, 19, 24, 20, 25, 26, 24, 25, 24]
```

- I. Sort the list and find the min and max age
- II. Add the min age and the max age again to the list
- III. Find the median age (one middle item or two middle items divided by two)
- IV. Find the average age (sum of all items divided by their number )
- V. Find the range of the ages (max minus min)
- VI. Compare the value of (min - average) and (max - average), use `_abs()` method

2.Iterate through the list, ['Python', 'Numpy','Pandas','Django', 'Flask'] using a for loop and print out the items.

3.Create fruits, vegetables and animal products tuples.

- I. Join the three tuples and assign it to a variable called `food_stuff_tp`.
- II. Change the about `food_stuff_tp` tuple to a `food_stuff_lt` list
- III. Slice out the middle item or items from the `food_stuff_tp` tuple or `food_stuff_lt` list.
- IV. Slice out the first three items and the last three items from `food_staff_lt` list
- V. Delete the `food_staff_tp` tuple completely

3. Create a set given below

```
it_companies = {'Facebook', 'Google', 'Microsoft', 'Apple', 'IBM', 'Oracle', 'Amazon'}
```

```
A = {19, 22, 24, 20, 25, 26}
```

```
B = {19, 22, 20, 25, 26, 24, 28, 27}
```

```
age = [22, 19, 24, 25, 26, 24, 25, 24]
```

- I. Find the length of the set `it_companies`
- II. Add 'Twitter' to `it_companies`
- III. Insert multiple IT companies at once to the set `it_companies`
- IV. Remove one of the companies from the set `it_companies`
- V. What is the difference between `remove` and `discard`

4. From the above sets A and B

- I. Join A and B
- II. Find A intersection B
- III. Is A subset of B
- IV. Are A and B disjoint sets
- V. Join A with B and B with A
- VI. What is the symmetric difference between A and B
- VII. Delete the sets completely

5. Create an empty dictionary called `dog`.Add name, color, breed, legs, age to the dog dictionary

6. Create a student dictionary and add first\_name, last\_name, gender, age, marital status, skills, country, city and address as keys for the dictionary

- I. Get the length of the student dictionary
- II. Get the value of skills and check the data type, it should be a list
- III. Modify the skills values by adding one or two skills
- IV. Get the dictionary keys as a list
- V. Get the dictionary values as a list
- VI. Change the dictionary to a list of tuples using \_items()\_ method
- VII. Delete one of the items in the dictionary
- VIII. Delete one of the dictionaries

7. Create a person dictionary.

```
person={
    'first_name': 'Asabeneh',
    'last_name': 'Yetayeh',
    'age': 250,
    'country': 'Finland',
    'is_marred': True,
    'skills': ['JavaScript', 'React', 'Node', 'MongoDB', 'Python'],
    'address': {
        'street': 'Space street',
        'zipcode': '02210'
    }
}
```

- I. Check if the person dictionary has skills key, if so print out the middle skill in the skills list.
- II. Check if the person dictionary has skills key, if so check if the person has 'Python' skill and print out the result.
- III. If a person skills has only JavaScript and React, print('He is a front end developer'), if the person skills has Node, Python, MongoDB, print('He is a backend developer'), if the person skills has React, Node and MongoDB, Print('He is a fullstack developer'), else print('unknown title') - for more accurate results more conditions can be nested!
- IV. If the person is married and if he lives in Finland, print the information in the following format:

```
```py
Asabeneh Yetayeh lives in Finland. He is married.
``
```

8. Print the season name of the year based on the month number using a dictionary.