Practical in slot 13

Question 1 : Write a program to perform these tasks:

1. Creating a list in Python

```
C:\Excercises>C:/Users/AD/AppData/Local/Programs/Python/Python39/python.exe c:/Excercises/Labworks/Lab05/Q1.1.py
[1, 2, 3]
[1, 2, 3]
[1.0, 'Jessa', 3]
[]
[]
```

2. Concatenate two lists index-wise

Given:

```
list1 = ["M", "na", "i", "Ke"]
list2 = ["y", "me", "s", "lly"]
```

Expected output:

```
['My', 'name', 'is', 'Kelly']
```

Question 2: Write a program to perform these tasks:

1. Turn every item of a list into its square

Given:

```
numbers = [1, 2, 3, 4, 5, 6, 7]
```

Expected output:

```
[1, 4, 9, 16, 25, 36, 49]
```

2. Concatenate two lists in the following order

```
list1 = ["Hello ", "take "]
list2 = ["Dear", "Sir"]
```

Expected output:

```
['Hello Dear', 'Hello Sir', 'take Dear', 'take Sir']
```

Question 3 : Write a program to perform these tasks:

1. Merge two Python dictionaries into one

```
{'Ten': 10, 'Twenty': 20, 'Thirty': 30, 'Fourty': 40, 'Fifty': 50}
```

```
dict1 = {'Ten': 10, 'Twenty': 20, 'Thirty': 30}
dict2 = {'Thirty': 30, 'Fourty': 40, 'Fifty': 50}
```

2. Print the value of key ‘history’ from the below dict

```
sampleDict = {
    "class": {
        "student": {
            "name": "Mike",
            "marks": {
                "physics": 70,
                "history": 80
            }
        }
    }
}
```

Expected output:

80

3. Initialize dictionary with default values

Given:

```
employees = ['Kelly', 'Emma']
defaults = {"designation": 'Developer', "salary": 8000}
```

Expected output:

```
{'Kelly': {'designation': 'Developer', 'salary': 8000}, 'Emma': {'designation': 'Develope
```

Question 4 : Write a program to perform these tasks:

1. Access value 20 from the tuple

Given:

```
tuple1 = ("Orange", [10, 20, 30], (5, 15, 25))
```

Expected output:

```
20
```

2. Unpack the tuple into 4 variables

Given:

```
tuple1 = (10, 20, 30, 40)
```

Expected output:

```
tuple1 = (10, 20, 30, 40)
# Your code
print(a) # should print 10
print(b) # should print 20
print(c) # should print 30
print(d) # should print 40
```

3. Swap two tuples in Python

Given:

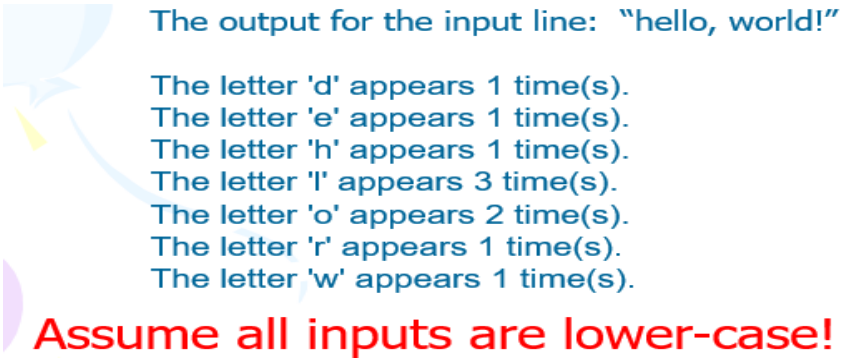
```
tuple1 = (11, 22)
tuple2 = (99, 88)
```

Expected output:

```
tuple1: (99, 88)
tuple2: (11, 22)
```

Question 5

- Write a program that gets an input line from the user (ends with '\n') and displays the number of times each letter appears in it.



- Requirement: using file stored output as above

Question 6 (Sorting and searching)

Write a program to enter the numbers n integer (in the range 1 -> 100) :

• Sort the list of the numbers in ascending order with selection sort Algorithm (swap with element in position which has min value)

• Enter a key and search key by sequence Algorithm and print out:

- Found key at position coresponding in List
- If not found notice "Not Found!"

• Enter a key and search key by Binary search Algorithm (using recursive and Iterative)