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Practical-7

Aim: Write a program using string tuple & dictionaries

7a. Write a program to sort a tuple by its float element.

Sample data: [('item1', '12.20'), ('item2', '15.10'), ('item3', '24.5')]

Expected Output: [('item3', '24.5'), ('item2', '15.10'), ('item1', '12.20')]

7b. Write a program to concatenate following dictionaries to create a new one

Sample Dictionary : dic1={1:10, 2:20} dic2={3:30, 4:40} dic3={5:50,6:60}

Expected Result : {1: 10, 2: 20, 3: 30, 4: 40, 5: 50, 6: 60}

7c. Write a Python script to generate and print a dictionary that contains a number (between 1 and n) in the form (x, x*x).

Sample Dictionary (n = 5) :

Expected Output : {1: 1, 2: 4, 3: 9, 4: 16, 5: 25}

a) Write a program to sort a tuple by its float element.

Program:

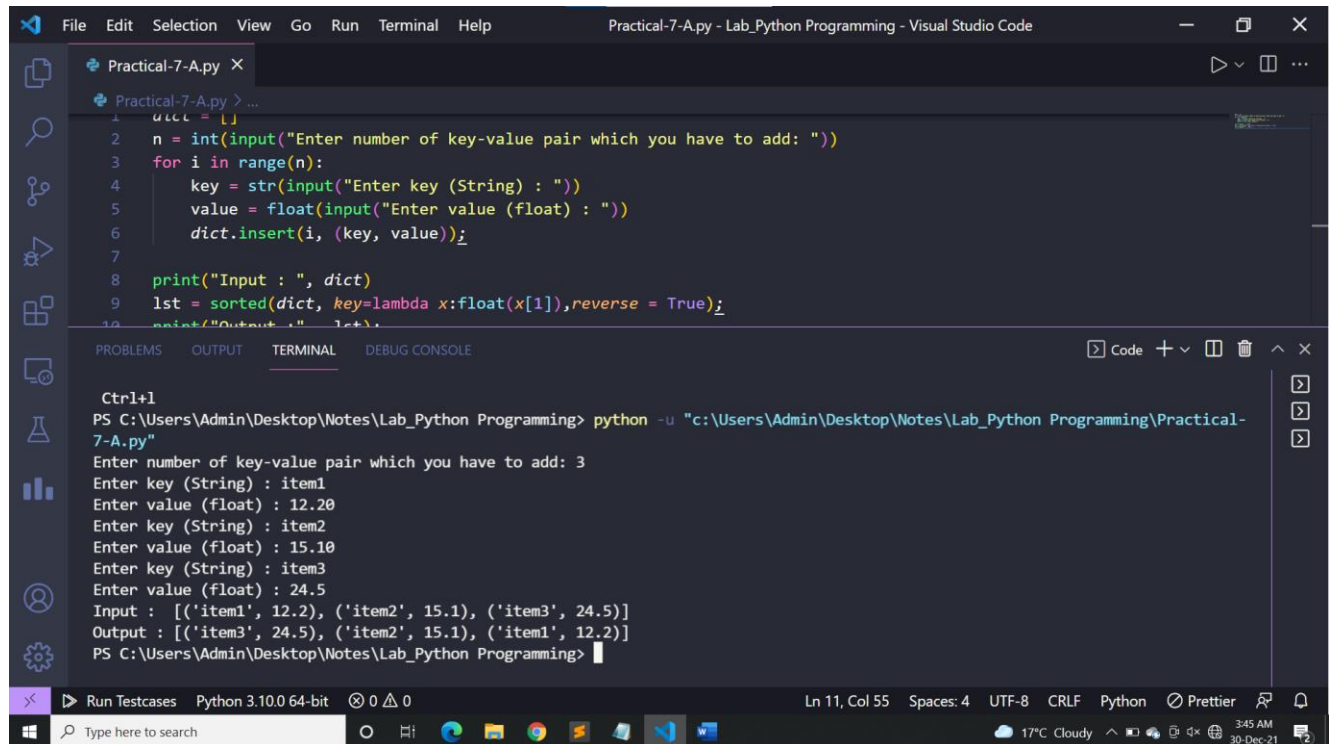
```
dict = []
n = int(input("Enter number of key-value pair which you have to add: "))
for i in range(n):
    key = str(input("Enter key (String) : "))
    value = float(input("Enter value (float) : "))
    dict.insert(i, (key, value));

print("Input : ", dict)
lst = sorted(dict, key=lambda x:float(x[1]),reverse = True);
print("Output : " , lst);
#[('item1', '12.20'), ('item2', '15.10'), ('item3', '24.5')]
```

- Output:

```
Enter number of key-value pair which you have to add: 3
Enter key (String) : item1
Enter value (float) : 12.20
Enter key (String) : item2
Enter value (float) : 15.10
Enter key (String) : item3
Enter value (float) : 24.5
Input : [('item1', 12.2), ('item2', 15.1), ('item3', 24.5)]
Output : [('item3', 24.5), ('item2', 15.1), ('item1', 12.2)]
```

- Screenshot:



The screenshot shows a Visual Studio Code window with a file named 'Practical-7-A.py'. The code in the editor is as follows:

```
1 dict = {}
2 n = int(input("Enter number of key-value pair which you have to add: "))
3 for i in range(n):
4     key = str(input("Enter key (String) : "))
5     value = float(input("Enter value (float) : "))
6     dict.insert(i, (key, value));
7
8 print("Input : ", dict)
9 lst = sorted(dict, key=lambda x:float(x[1]),reverse = True);
10 print("Output : ", lst);
```

The terminal window at the bottom shows the execution of the script. It prompts the user to enter the number of key-value pairs (3), then iteratively asks for keys and values. The final output shows the dictionary sorted by value in descending order.

```
PS C:\Users\Admin\Desktop\Notes\Lab_Python Programming> python -u "c:\Users\Admin\Desktop\Notes\Lab_Python Programming\Practical-7-A.py"
Enter number of key-value pair which you have to add: 3
Enter key (String) : item1
Enter value (float) : 12.20
Enter key (String) : item2
Enter value (float) : 15.10
Enter key (String) : item3
Enter value (float) : 24.5
Input : [('item1', 12.2), ('item2', 15.1), ('item3', 24.5)]
Output : [('item3', 24.5), ('item2', 15.1), ('item1', 12.2)]
PS C:\Users\Admin\Desktop\Notes\Lab_Python Programming>
```

b) Write a program to concatenate following dictionaries to create a new one

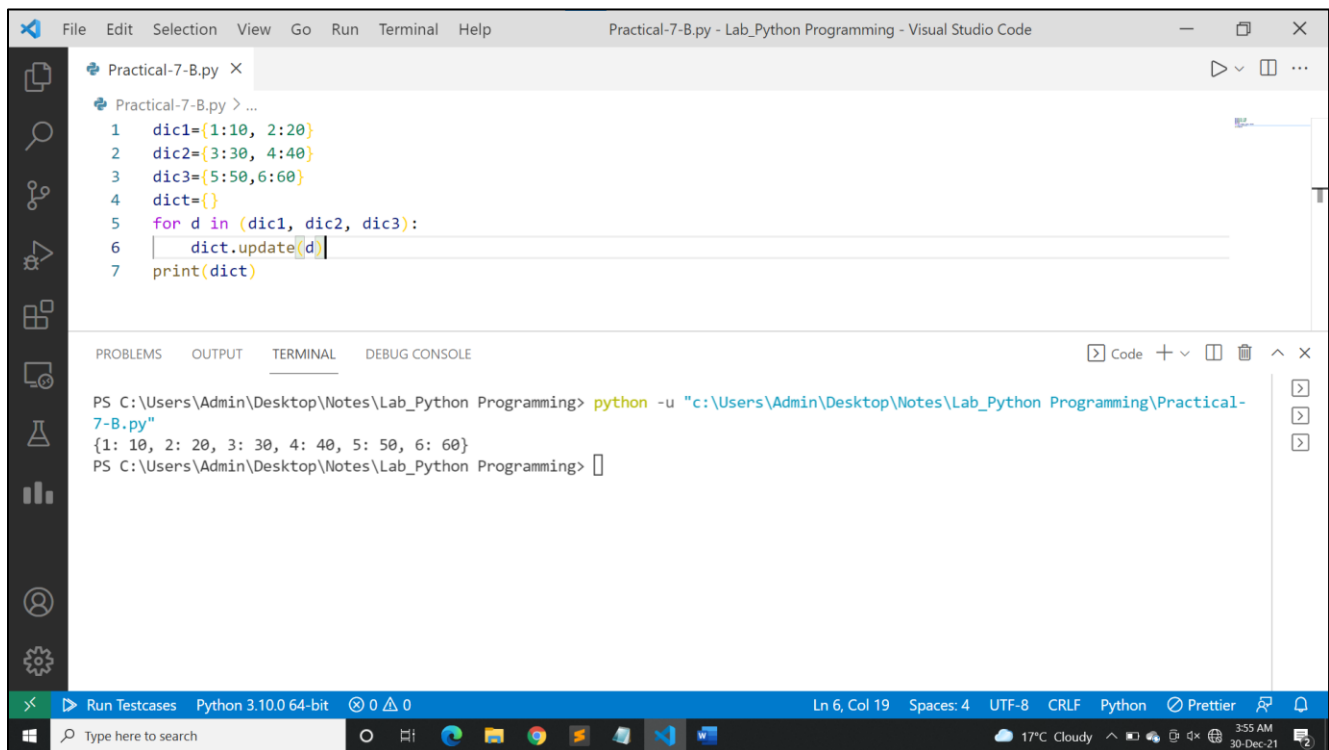
Program:

```
dic1={1:10, 2:20}
dic2={3:30, 4:40}
dic3={5:50,6:60}
dict={}
for d in (dic1, dic2, dic3):
    dict.update(d)
print(dict)
```

Output:

```
{1: 10, 2: 20, 3: 30, 4: 40, 5: 50, 6: 60}
```

Screenshot:



The screenshot shows the Visual Studio Code editor with a file named 'Practical-7-B.py'. The code in the editor is as follows:

```
1 dic1={1:10, 2:20}
2 dic2={3:30, 4:40}
3 dic3={5:50,6:60}
4 dict={}
5 for d in (dic1, dic2, dic3):
6     dict.update(d)
7 print(dict)
```

The bottom panel shows the terminal output:

```
PS C:\Users\Admin\Desktop\Notes\Lab_Python Programming> python -u "c:\Users\Admin\Desktop\Notes\Lab_Python Programming\Practical-7-B.py"
{1: 10, 2: 20, 3: 30, 4: 40, 5: 50, 6: 60}
PS C:\Users\Admin\Desktop\Notes\Lab_Python Programming>
```

c) Write a Python script to generate and print a dictionary that contains a number (between 1 and n) in the form (x, x*x)

Program:

```
n = int(input("Enter a number : "))
dict={}
for i in range (1, n+1):
    dict[i]=i*i
print(dict)
```

Output:

```
Enter a number : 5
{1: 1, 2: 4, 3: 9, 4: 16, 5: 25}
```

Screenshot:

The screenshot displays the Visual Studio Code interface. The top menu bar includes File, Edit, Selection, View, Go, Run, Terminal, and Help. The title bar reads 'Practical-7-C.py - Lab_Python Programming - Visual Studio Code'. The editor has two tabs: 'Practical-7-C.py' (active) and 'Practical-7-B.py'. The code in 'Practical-7-C.py' is as follows:

```
1 n = int(input("Enter a number : "))
2 dict={}
3 for i in range (1, n+1):
4     dict[i]=i*i
5 print(dict)
```

The bottom panel shows the 'TERMINAL' tab with the following output:

```
PS C:\Users\Admin\Desktop\Notes\Lab_Python Programming> python -u "c:\Users\Admin\Desktop\Notes\Lab_Python Programming\Practical-7-C.py"
Enter a number : 5
{1: 1, 2: 4, 3: 9, 4: 16, 5: 25}
PS C:\Users\Admin\Desktop\Notes\Lab_Python Programming>
```

The status bar at the bottom indicates 'Run Testcases', 'Python 3.10.0 64-bit', '0 0 0', 'Ln 1, Col 36', 'Spaces: 4', 'UTF-8', 'CRLF', 'Python', 'Prettier', and the system clock shows '4:01 AM 30-Dec-21'.

Result: I have studied Dictionaries in Python and successfully performed practical-7.