

P E S University
Department of Computer Science & Engineering
Session : Aug-Dec 2019

Introduction to Computing using Python Laboratory(UE19CS102)

Week 9 – Programs on Sets and Dictionary

1	<p>Given a set of words, write a program to create a new set of words that begins and ends with 's'.</p> <p>Solution:</p> <pre>words = set(('sets', 'similar', 'suites', 'salutes', 'in a', 'different way')) newset = set() for word in words: if word[0] == 's' and word[-1] == 's': newset.add(word) print(newset)</pre>
2	<p>Write a program create a set of all numbers between 1 and 100 that are divisible by 4.</p> <p>Solution:</p> <pre>s1=set() s=set(range(1,100)) for i in s: if i %4==0: s1.add(i) print(s1)</pre>
3	<p>Write a program to print a dictionary where the keys are numbers between 1 and 15 and the values are cube of keys.</p> <p>Sample Output: {1: 1, 2: 8, 3: 27, 4: 64, 5: 125, 6: 216, 7: 343, 8: 512, 9: 729, 10: 1000, 11: 1331, 12: 1728, 13: 2197, 14: 2744, 15: 3375}</p> <p>Solution:</p> <pre>d=dict() for x in range(1,16): d[x]=pow(x,3) print(d)</pre>
4	<p>Write a program to Create a dictionary from a string.</p> <p>Sample Output: {'p': 1, 'y': 1, 't': 1, 'h': 1, 'o': 1, 'n': 1}</p>

	<p>Solution:</p> <pre> str1 = 'python' my_dict = {} for letter in str1: if letter not in my_dict: my_dict[letter] = 0 my_dict[letter] = my_dict[letter] + 1 print(my_dict) </pre>
5	<p>Consider the following text for the problems below.</p> <pre> str1=""" modi varanasi 2014 wins modi varanasi 2019 wins rahul Amethi 2014 wins rahul Amethi 2019 loses rahul waynad 2019 wins Smrithi Amethi 2014 loses Smrithi Amethi 2019 wins Shah Gandhinagar 2014 wins Shah Gandhinagar 2019 wins""" </pre> <p>each entry: Name-Place-year-result</p> <p>1) Find the number of Politicians.</p> <p>Solution:</p> <pre> politicians_set = set() for line in str1.split('\n'): politicians_set.add(line.split()[0]) print("# of politicians: ", len(politicians_set)) </pre> <p>2) Print the names of the Politicians.(Unique)</p> <p>Solution:</p> <pre> #unique names uni_polit=set() for details in str1.split("\n"): uni_polit.add(details.split()[0]) print("Unique Names are==>") for names in uni_polit: print("\t",names) </pre>
6	<p>Given a list : SRN, P_marks, C_marks, M_marks and B_marks.</p> <pre> srns = ["CS003","CS013","CS036","CS033","CS023"] p_marks = [98,99,80,90,89] </pre>

```
c_marks = [91,90,84,92,79]
m_marks = [78,39,60,50,84]
b_marks = [100,69,78,70,59]
```

a) Create a dict with SRN as the key and marks in P, C, M, B as a value.

Output:

```
{'CS003': [98, 91, 78, 100], 'CS013': [99, 90, 39, 69], 'CS036': [80, 84, 60, 78], 'CS033': [90, 92, 50, 70], 'CS023': [89, 79, 84, 59]}
```

Solution:

```
srns = ["CS003","CS013","CS036","CS033","CS023"]
p_marks = [98,99,80,90,89]
c_marks = [91,90,84,92,79]
m_marks = [78,39,60,50,84]
b_marks = [100,69,78,70,59]

student_details={}
i=0
for srn in srns:
    student_details[srn]=[]
    student_details[srn].extend([p_marks[i],c_marks[i],m_marks[i],b_marks[i]])
    i+=1

print(student_details)
```

b) Create a dict with SRN as the key and total marks as a value.

Solution:

```
srns = ["CS003","CS013","CS036","CS033","CS023"]
p_marks = [98,99,80,90,89]
c_marks = [91,90,84,92,79]
m_marks = [78,39,60,50,84]
b_marks = [100,69,78,70,59]
student_details={}
i = 0
for srn in srns:
    student_details[srn] = p_marks[i]+c_marks[i]+m_marks[i]+b_marks[i]
    i+=1
print(student_details)
```

c)create a dict with **M_marks** as the key and srn of the students as value.

Solution:

```
srns = ["CS003","CS013","CS036","CS033","CS023"]
p_marks = [98,99,80,90,89]
c_marks = [91,90,84,92,79]
m_marks = [78,39,60,50,84]
b_marks = [100,69,78,70,59]
```

```
i = 0
student_details={}
for srn in srns:
    if m_marks[i] not in student_details:
        student_details[m_marks[i]]=[]
    student_details[m_marks[i]].append(srn)
    i=i+1
print(student_details)
```