

VASAVI COLLEGE OF ENGINEERING

(AUTONOMOUS)
(Affiliated to Osmania University)

Hyderabad - 500 031.

DEPARTMENT OF

: CSE

NAME OF THE LABORATORY : PP LAB

Name K.S.I.Sivani

Roll No. 1602-21-733-052 Page No. 87

PRELAB QUESTIONS: 7

1) What is a dictionary? Give an example:

Ans: Dictionary is a data structure in which we store values as a pair of key and value. Each key is separated from its value by a colon(:) and consecutive items are separated by commas.

Ex: dict = {key1:value1, key2:value2, ... }

d = {'RNO': '001', 'Name': 'ABC'}

2) Why the dictionaries are called as immutable?

Ans: Keys in the dictionary must be unique and be of any immutable datatype i.e. value of a key can be of any type.

Also dictionaries are not sequences, rather they are mappings. Dictionary keys are case sensitive.

3) List the dictionary operations with examples:

Ans: 1) Deleting items: del dict[key]

dict.pop(key[, default])

Sorting items: sorted(dict.keys())

length : len(dict)

dict.clear() → clear the contents of dictionary

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dict.copy(): returns a shallow copy of the dictionary.

4) What are nested dictionary? Give example

Ans: Nested dictionaries are the one in which a dictionary is present inside another dictionary.

Ex: `{'Shiv': {'RNo': '9', 'Branch': 'CSE'},
 'Shubhi': {'RNo': '10', 'Branch': 'EEE'}}`

PRELAB PROGRAMS: 7

1) Write a python program on sets to remove items from the sets

```
s=[]
x=int(input("Enter the no. of elements:"))
for i in range(x):
    n=int(input("Enter no:"))
    s.append(n)
print("Set=", set(s))
s.remove print(s.clear())
```

O/P:

Enter the no. of
elements: 2

Enter no: 3

Enter no: 4

{3,4}

Enter the element
to be deleted: 3

{4}

2. `y=int(input("Enter the element to be deleted:"))
s.discard(y)
print(s)`

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2) Write a python program to intersection of 2 sets:

S = []

T = []

x = int(input("Enter the no. of elements in set 1: ")).

y = int(input("Enter the no. of elements in set 2: ")).

for i in range(x):

n = int(input("Enter an element: ")).

S.append(n)

print(set(S))

for j in range(y):

m = input("Enter an element: ")

T.append(m)

print(S.intersection(T))

O/P:

Enter the no. of elements in set 1: 2

Enter the no. of elements in set 2: 3

Enter an element: A

Enter an element: 1

{A, 1}

Enter an element: C

Enter an element: 4

Enter an element: D

{C, 4, D}

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{A, 1, C, 4, D}

- 3) Write a python program to find maximum & minimum value in a set:

```
s = []
x = int(input("Enter the no. of elements:"))
for i in range(x):
    n = input("Enter the element:")
    s.append(n)
print(set(s))
print("Maximum element in a set:", max(s))
print("Minimum element in a set:", min(s))
```

O/P:

Enter no. of elements: 4

Enter the element: A

Enter the element: 1

Enter the element: 2

Enter the element: b

{A, 2, b, 1}

Maximum element in a set: b

Minimum element in a set: 1

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Name K. S. I. Sivani

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LAB PROGRAMS: 7

- 1) WAP to maintain the details of students who were absent for data-structures & python open elective courses separately. In order to find absentees details of a class, merge the above two and display the absentees details:

*

P = {}

d = {}

a = {}

n = int(input("Enter the no. of absentees for DS:"))

for i in range(n):

i = int(input("Enter the roll no:"))

a[i] = input("Enter the name:"))

print("Absentees for DS:", d)

m = int(input("Enter the no. of absentees for python:"))

for i in range(m):

j = int(input("Enter the roll no:"))

p[j] = input("Enter the name:"))

print("Absentees for python:", p)

a.update(d)

a.update(p)

print("Absentees:", a).

OUTPUT:

Enter the no. of absentees for DS: 3

Enter the roll no: 1

Enter the name: Ram

Enter the roll no: 16

Enter the name: Priya

Enter the roll no: 50

Enter the name: Adi

Absentees for DS: {1: 'Ram', 16: 'Priya', 50: 'Adi'}

Enter the no. of absentees for Python: 3

Enter the roll no: 5

Enter the name: Abdul

Enter the roll no: 10

Enter the name: Bindu

Enter the roll no: 17

Enter the name: Virat

Absentees for Python: {5: 'Abdul', 10: 'Bindu', 17: 'Virat'}

Absentees: {1: 'Ram', 16: 'Priya', 50: 'Adi', 5: 'Abdul',

10: 'Bindu', 17: 'Virat'}

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Name K. Sree Indira Sivani Roll No. 1602-21-733-052 Page No. 91

- 2) Define a function which can print a dictionary where the keys are numbers with the given range and the values are square of keys.

*
m = int(input("Enter the lower limit:"))
n = int(input("Enter the upper limit:"))
d = {i: i**2 for i in range(m, n+1)}
print(d)

* O/P:

Enter the lower limit: 2
Enter the upper limit: 6
{2: 4, 3: 9, 4: 16, 5: 25, 6: 36}

- 3) WAP to maintain the menu of tiffin centre. List the highest 3 prizes in the tiffin centre and print the item which is costly.

n = int(input("Enter the no. of items:"))
d = {}
for i in range(n):
 i = input("Enter the item name: ")
 d[i] = float(int(input("Enter the cost: ")))

print("MENU:", d)
l = sorted(d.values())
print("Highest 3 prizes:", l[n-1], l[n-2], l[n-3])

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Name K.S.I.Sivani Roll No. 1602-21-733-D52 Page No. 92

K = list(d.keys())

V = list(d.values())

C = V.index(l[n-1])

print(" costliest item: ", K[c], " i.e. Rs: ", l[n-1])

* Output:

Enter the no. of items: 4

Enter the item name: dosa

Enter the cost: 45

Enter the item name: idly

Enter the cost: 30

Enter the item name: vada

Enter the cost: 40

Enter the item name: puri

Enter the cost: 60

MENU: {'dosa': 45, 'idly': 30, 'vada': 40, 'puri': 60}.

Highest 3 prizes: 60 45 40

costliest item: puri i.e. Rs: 60.

- 4) WAP to create a list of student records using dictionary and print them.

n = int(input("Enter the no. of students: "))

d = {}

for i in range(n):

i = int(input("Enter your roll no: "))

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```
l = []
m = input("Enter your name:")
b = input("Enter your branch:")
l.append(m)
l.append(b)
d[i] = l
```

print ("Student details:", d).

Output:

Enter the no. of students: 3

Enter your roll no: 52

Enter your name: sivani

Enter your branch: cse

Enter your roll no: 41

Enter your name: Sarayu

Enter your branch: cse

Enter your roll no: 29

Enter your name: praha

Enter your branch: cse

Student details: {52: ['sivani', 'cse'], 41: ['sarayu', 'cse'],
29: ['praha', 'cse']}

- 5) Create a dictionary name 'stock' and add following elements to stock and perform following operations
pencil - 500 ; pen - 100 ; eraser - 200 ; ink - 300

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- 1) print stock.
 - 2) Delete ink and print stock.
 - 3) Find the no. of key-value pairs and get the keys:
- * stock = {"Pencil": 500, "Pen": 100, "Eraser": 200, "Ink": 300}
- print(stock)
- del stock['Ink']
- print(stock)
- print("Number of key-value pairs:", len(stock))
- for i in stock.keys():
- print(i)

Output:

{'Pencil': 500, 'Pen': 100, 'Eraser': 200, 'Ink': 300}

{'Pencil': 500, 'Pen': 100, 'Eraser': 200}

Pencil

Pen

Eraser

- 6) Write a python program (menu driven) of book shop details which contain the title of the book and no. of copies of each title. As the books are added to the shop, the no. of copies in each should increase. As the books are sold the no. of copies in each should decrease. Implement this scenario using dictionary datatype.

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Name K.S.I.Sivani Roll No. 1602-21-733-D52 Page No. 95.

```
* n=int(input("Enter the no. of books:"))
def book(n,t,x):
    x[t] += n
    b={}
    for i in range(n):
        i=input("Enter the title of the book:")
        b[i]=int(input("Enter the no. of copies:"))
    print("Book Details:",b)
c=0
while(c!=3):
    print("Choose an option:\n1.Bought\n2.Sold\n3.Exit")
    c=int(input())
    if c!=3:
        t=input("Enter the title of the book:")
        m=int(input("Enter the no. of copies:"))
        if c==1:
            book(m,t,b)
        else:
            book(-m,t,b)
```

print(b)

7) WAP to maintain employee details(ID, name, Date of joining, experience, Designation, Salary):

Perform the Operations:

1) Add the employee details who joins.

Output:

Enter the no. of books: 4

Enter the title of the book: Beauty & Beast

Enter the no. of copies: 4

Enter the title of the book: Girl on the Train

Enter the no. of copies: 3.

Enter the title of the book: Alice ~~&~~ Wonderland

Enter the no. of copies: 5

Enter the title of the book: Geronimo Stilton

Enter the no. of copies: 6.

Book details: {'Beauty & Beast': 4, 'Girl on the train': 3,
 'Alice Wonderland': 5, 'Geronimo Stilton': 6}

choose an option:

1. Bought

2. Sold

3. Exit

2

Enter the title of the book: Alice Wonderland

Enter the no. of copies: 1.

Choose an option :

1. Bought

2. Sold

3. Exit

1

Enter the title of the book: Beauty & Beast

Enter the no. of copies: 2

Choose an option :

1. Bought

2. Sold

3. Exit

3

{'Beauty & Beast': 6, 'Girl on the train': 3, 'Alice Wonderland': 4,
 'Geronimo Stilton': 6}

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Name K.S.I. Sivani

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- 2) Delete the employee details whenever he leaves.
 - 3) Print the experience of given employee.
 - 4) Print the designation of given employee.
 - 5) Print the total no. of employees.
- * n = int(input("Enter the no. of employees:"))

E = {}

for i in range(n):

 i = int(input("ID:"))

 l = []

 m = input("Enter Name:"); l.append(m)

 doj = input("Date of joining:"); l.append(doj)

 e = int(input("Experience:")); l.append(e)

 d = input("Designation:"); l.append(d)

 s = int(input("Salary:")); l.append(s)

 E[i] = tuple(l)

print("Employee Details:", E).

print("Choose an option : 1. Joining 2. Resigning 3. Exit")

c = int(input())

if c == 1:

c = 0

while c != 3:

 c = int(input())

 if c == 1:

 i = int(input("Enter ID:"))

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Name K.S.T.Sivani Roll No. 1603-21-732-052 Page No. 97

```
l = []
m = input("Name:"); l.append(m)
doj = input("Date of joining:"); l.append(doj)
e = int(input("Experience:")); l.append(e)
d = input("Designation:"); l.append(d)
s = int(input("Salary:")); l.append(s)
E[i] = tuple(l)
print("Employee Details:", E)

elif c1 == 3:
    i = int(input("Employee ID:"))
    del E[i]
    print("Employee Details:", E)

x = int(input("Enter the ID of the employee to print
experience:"))
print(E[x][2])

y = int(input("Enter the ID of the employee to print
designation:"))
print(E[y][3])

print("Total no. of employees:", len(E))
```

Output:

Enter the no. of employees : 2

ID : 17

Name : Preethi

Date of joining : 18-06-2015

Experience : 7

Designation : DM

Salary : 45000

ID : 25

Name : Rajesh

Date of joining : 07-05-2018

Experience : 4

Designation : Employee

Salary : 40000

Employee Details : {17 : ('Preethi', '18-06-2015', 7, 'DM', 45000),
25 : ('Rajesh', '07-05-2018', 4, 'Employee', 40000)}

choose an option : 1. Joining 2. Resigning 3. Exit.

1

ID : 40

Name : Sita

Date of joining : 12-04-2021

Experience : 1

Designation : Employee

Salary : 35000

2

ID : 25

Employee details : {17 : ('Preethi', '18-06-2015', 7, 'DM', 45000),
25 : ('Sita', '12-04-2021', 1, 'Employee', 35000)}

enter ID of the employee to print experience : 17

enter ID of the employee to print designation : 40

Total no. of employees : 2