

Question 1:

- 1) `fruits = { "apples": 20, "bananas": 50, "Oranges": 100 }`
- 2) `print (fruits)`
- 3) `print (fruits.get ('bananas'))`
- 4) `len (fruits)`
- 5) `If "grapes" in fruits:`
 `print ("yes")`
 `else:`
 `print ("No")`
- 6) `If "pears" in fruits.keys():`
 `print (fruits.get ('pears'))`
 `else:`
 `fruits ["Pears"] = 10`
 `print (fruits)`
- 7) `for keys in fruits:`
 `print (sorted (fruits.keys()))`
- 8) `print (sorted (fruits.keys(), reverse = True))`
- 9) `del fruits ['pears']`
 `print (fruits)`

Problem Solving Using Python and R Lab

Lab7. Dictionaries in Python

Question1. Write a program for Fruit Inventory Management.

1. Create a dictionary **fruits** with fruit name as key and quantity available as values. There are 20 apples, 50 bananas, 100 oranges. Then, print outputs for the following queries.
2. Show the entire dictionary fruits (Print output as apples -> 20, bananas -> 50, etc)
3. How many bananas are there?
4. How many items in the dictionary?
5. Does graphs available in the dictionary?
6. Does pears exists in the dictionary?. If so, return its quantity, otherwise, add 10 pears to dictionary.
7. Show all fruit names in ascending order (Iterate using for loop)
8. Show all fruits in descending order of quantities
9. Remove pears from the dictionary.
10. Develop a function **show()** that displays fruit name and quantity (Use `.format()` for pretty printing)
11. Develop a function **add_fruit(name, quantity)** that receives fruit name and quantity as input and increases the quantity of the fruit. Then, display the current inventory by calling **show()**.
12. Now, add 40 apples to inventory by calling **add_fruit(name, quantity)**
13. Now, add 100 bananas to inventory, by calling **add_fruit(name, quantity)**
14. Now, show the current inventory, by calling **show()**
15. Write the inventory fruits onto a file. (Use **Pickle** for file writing and reading)
16. Now, open Pickle file and display the inventory.

```
10) def show()
    print("{ } { } { }".format(*fruits.items()))
```

```
11) def add_fruit(fruits, name, quantity):
    fruits[name] = fruits.get(name, 0) + quantity
```

```
12) fruits = {"apples": 20, "bananas": 50, "oranges": 100}
    add_fruit(fruits, 'apples', 40)
    print(fruits)
```

13) `fruits = {"apples": 20, "bananas": 50, "oranges": 100}`

`add_fruit(fruits, "bananas", 100)`

`print(fruits)`

14) `show()`

15) `import pickle`

`new_inventory = {"apple": 300, "mango": 87, "banana": 320}`

`file = open("fruits_inventory.p", "wb")`

`pickle.dump(new_inventory, file)`

`print(new_inventory)`

16) `file = open("fruits_inventory.p", "rb")`

`dict2 = pickle.load(file)`

`file.close()`

`print(new_inventory)`

Question2. Write a program for Telephone Directory Management

1. Create an empty dictionary called **customers**, where name is a key and contacts is a list of contacts such as phoneno and email ID for each customer.
2. Ask user to enter name and his contacts for N customers. Add them to dictionary **customers**. Stop reading when user types "done".
3. Show the contacts for customer "rex". If not exists, print message "Contacts not exists.."
4. Add a new customer with name "rex", phone number 9942002764 and email id raj कुमार@bhc.edu
5. Show all customers both name and contacts. (Use items() method, unpack it and print inside **for** loop)
6. Show all customer contacts (Iterate using **for** loop)
7. Show all customer names in alphabetical order
8. How many customers are there in your dictionary?
9. Remove customer "rex" from dictionary customers

1)

```
customer = { }
```

```
while (True):
```

```
    row = input("Enter the name and number: ")
```

```
    info = row.split()
```

```
    if (info[0] == 'done'):
```

```
        break
```

```
    name = info[0]
```

```
    phone = info[1]
```

```
    email = info[2]
```

```
    contacts = [phone, email]
```

```
    customer[name] = contacts
```

```
print("\n printing contacts:")
```

```
for name, phone in customer.items():
```

```
    print(name, ":", phone)
```

3) if 'rex' in customer:

print("rex is present")

else:

print("There is no such contact")

4) customer['rex'] = ['9942002764', 'Jonny@bhc.edu']

5) for name, contacts in customer.items():

print(name, contacts)

6) for name in customer:

print(customer[name])

7) sorted(customer.keys())

8) len(customer.items())

9) del customer['rex']

customer

Question3. Write a program for Character and word counter.

- Develop an application that reads a file and prints words in descending order of their frequency.
- Also print the letters such as 'a', 'b', etc, in decreasing order of frequency. Your program should convert all the input to lower case and only count the letters a-z. Your program should not count spaces, digits, punctuation, or anything other than the letters a-z.