CourseName: Advance Python Programming **Course code:** 22CSH-623

Experiment-2.2

A) Aim: Write a python program to create a dictionary

Tools/Software Required: Visual Studio Code

Description:

A dictionary is a collection that is unordered, changeable, and indexed. In Python, dictionaries are written with curly brackets {}, and they have keys and values.

Example:

{key1: value1, key2: value2, key3: value3,}

Steps:

1. Create a books dictionary with Author, Edition, and Title as keys.
2. Print the Author, Edition, and Title of the book.

Implementation:

```
books = {
    "Author": "John D. Walker",
    "Edition": 2022,
    "Title": "Hello World",
}

print("Author: ", books["Author"])
print("Edition: ", books["Edition"])
print("Title: ", books["Title"])
```

Output:

```
$ python exp1.py
Author:  John D. Walker
Edition:  2022
Title:  Hello World
```

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B) Aim: Write a python program to traverse, add, delete and replace items in dictionaries.

Tools/Software Required: VS Code, Python

Description:

Dictionary operations are:

1. Traverse: Traverse through all the items in the dictionary.
2. Add: Add a new item to the dictionary.
3. Delete: Delete an item from the dictionary.
4. Replace: Replace an existing item in the dictionary.

Steps:

1. Create a books dictionary with Author, Edition and Title as keys.
2. Print the books dictionary.
3. Add a new key Co-Author to the dictionary & print the dictionary.
4. Update the Author key with a new value & print the dictionary.
5. Clear the dictionary & print the dictionary.
6. Delete the dictionary & print the dictionary.

Implementation:

```
books = {
    "Author": "John D. Walker",
    "Edition": 2022,
    "Title": "Hello World",
}
print("Books: ", books)

# ------ Add ------
books["Co-Author"] = "Balveer Singh"
print("Adding Co-Author", books)

# ------ Update ------
books["Author"] = "Gurpej Singh"
```

```
print("Updating Author", books)

# ------ Delete a key-value pair ------
del books["Author"]
print("Author key-value pair deleted", books)

# ------ Clearing Dictionary ------
books.clear()
print("Clearing Dictionary: ", books)

# ------ Deleting Dictionary ------
del books
print(books)
```

Output:

```
$ python exp2.py
Books:  {'Author': 'John D. Walker', 'Edition': 2022, 'Title': 'Hello World'}
Adding Co-Author {'Author': 'John D. Walker', 'Edition': 2022, 'Title': 'Hello World', 'Co-Author': 'Balveer Singh'}
Updating Author {'Author': 'Gurpej Singh', 'Edition': 2022, 'Title': 'Hello World', 'Co-Author': 'Balveer Singh'}
Author key-value pair deleted {'Edition': 2022, 'Title': 'Hello World', 'Co-Author': 'Balveer Singh'}
Clearing Dictionary:  {}
Traceback (most recent call last):
  File "C:\Users\VEER\Documents\Chandigarh University\Python Lab\Practical\Unit-2\Practical_2.2\exp2.py", line 46, in <modu
le>
    print(books)
NameError: name 'books' is not defined
```

C) Aim: Write a python program to create a dictionary that has the number of positive and negative numbers of lists.

Tools/Software Required: VS Code, Python

Description:

Create a dictionary that has the number of positive and negative numbers in the list. Then print the dictionary with positive and negative numbers.

Steps:

1. Create a list of numbers.
2. Create a dictionary with positive and negative keys and an empty list as values.
3. Traverse through the list and check if the number is positive or negative.
4. If the number is positive then append it to the positive list in the dictionary.
5. If the number is negative then append it to the negative list in the dictionary.
6. Print the dictionary with positive and negative numbers.

Implementation:

```
list_element = [1,2,3,4,5,6,-1,-2,-3,-4,-5,-6]

no_list = {
    "positive": [],
    "negative": [],
}

for i in list_element:
    if i > 0:
        no_list["positive"].append(i)
    else:
        no_list["negative"] .append(i)
print("Positive: ", no_list["positive"])
print("Negative: ", no_list["negative"])
```

Output:

```
$ python exp3.py
List:  [1, 2, 3, 4, 5, 6, -1, -2, -3, -4, -5, -6]
Positive:  [1, 2, 3, 4, 5, 6]
Negative:  [-1, -2, -3, -4, -5, -6]
```