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Page No.	
Date	18 4 21

### Assignment-1

Q-1. write a menu driven Program to implement the following.

- a. Accept two string from the user
- b. display common letters in two strings
- c. display letters which are in first string but not in the second string
- d. display set of all letters of both strings
- e. display letters which are in two strings but not in both.

Ans def common (S1, S2) :

S1 = set (S1)

S2 = set (S2)

return S1.intersection (S2)

def notcommon (S1, S2) :

S1 = set (S1)

S2 = set (S2)

return S1.difference (S2)

def setof (S1, S2) :

S1 = set (S1)

S2 = set (S2)

return S1.union (S2)

```

def notboth(s1, s2):
    s1 = set(s1)
    s2 = set(s2)
    return s1.symmetric_difference(s2)

if __name__ == "__main__":
    while (True):
        print("1: ADD TWO STRINGS")
        print("2: DISPLAY COMMON LETTERS IN STRINGIS")
        print("3: DISPLAY LETTERS IN FIRST STRINGIS
              BUT NOT IN SECOND STRINGI")
        print("4: DISPLAY THE SET OF LETTERS")
        print("5: DISPLAY LETTERS WHICH ARE IN THE
              TWO STRINGIS BUT NOT IN BOTH")
        op = int(input("enter your choice"))
        if (op == 1):
            s1 = input("Enter 1st string")
            s2 = input("Enter 2nd string")
        elif (op == 2):
            x = common(s1, s2)
            print(x)
        elif (op == 3):
            x = notcommon(s1, s2)
            print(x)
        elif (op == 4):
            x = setof(s1, s2)
            print(x)
        elif (op == 5):
            x = notboth(s1, s2)
            print(x)

```

~~else~~

else:

print("wrong input")

print("Press Q to quit and C to continue")

ch = ""

while (ch != "c" and ch != "q"):

ch = input()

if ch == "q":

exit(0)

else if ch == "c":

continue

File Edit View Navigate Code Refactor Run Tools VCS Window Help untitled [C:\Users\Harsh\PycharmProjects\untitled] - ...\\college\_prac\\ass1\_1.py - PyCharm

untitled > college\_prac > ass1\_1.py

Run: ass1\_1

```
C:\python38\python.exe C:/Users/Harsh/PycharmProjects/untitled/college_prac/ass1_1.py
*****
***** MENU *****
1: ADD TWO STRINGS
2: DISPLAY COMMON LETTERS IN TWO STRING
3: DISPLAY LETTERS WHICH ARE IN THE FIRST STRING BUT NOT IN THE SECOND STRING.
4: DISPLAY SET OF ALL LETTERS OF BOTH THE STRINGS.
5: DISPLAY LETTERS WHICH ARE IN THE TWO STRINGS BUT NOT IN BOTH.

ENTER YOUR CHOICE:1
entre the 1st string: my name is harsh
entre the 2nd string: this is python
Press q to quit and c to continue: c
*****
***** MENU *****
1: ADD TWO STRINGS
2: DISPLAY COMMON LETTERS IN TWO STRING
3: DISPLAY LETTERS WHICH ARE IN THE FIRST STRING BUT NOT IN THE SECOND STRING.
4: DISPLAY SET OF ALL LETTERS OF BOTH THE STRINGS.
5: DISPLAY LETTERS WHICH ARE IN THE TWO STRINGS BUT NOT IN BOTH.

ENTER YOUR CHOICE:2
{'h', 'i', 's', 'y', 'n'}
Press q to quit and c to continue: c
*****
***** MENU *****
1: ADD TWO STRINGS
2: DISPLAY COMMON LETTERS IN TWO STRING
3: DISPLAY LETTERS WHICH ARE IN THE FIRST STRING BUT NOT IN THE SECOND STRING.
4: DISPLAY SET OF ALL LETTERS OF BOTH THE STRINGS.
```

1 Project 2: Structure 3: Favorites

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Event Log Run

38:36 CRLF UTF-8 4 spaces Python 3.8

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untitled > college\_prac > ass1\_1.py ass1\_1

Run: ass1\_1

1: Project 2: Favorites 3: Structure

3: DISPLAY LETTERS WHICH ARE IN THE FIRST STRING BUT NOT IN THE SECOND STRING.  
4: DISPLAY SET OF ALL LETTERS OF BOTH THE STRINGS.  
5: DISPLAY LETTERS WHICH ARE IN THE TWO STRINGS BUT NOT IN BOTH.  
ENTER YOUR CHOICE:1  
entre the 1st string: *my name is harsh*  
entre the 2nd string: *this is python*  
Press q to quit and c to continue: c  
\*\*\*\*\* MENU \*\*\*\*\*  
1: ADD TWO STRINGS  
2: DISPLAY COMMON LETTERS IN TWO STRING  
3: DISPLAY LETTERS WHICH ARE IN THE FIRST STRING BUT NOT IN THE SECOND STRING.  
4: DISPLAY SET OF ALL LETTERS OF BOTH THE STRINGS.  
5: DISPLAY LETTERS WHICH ARE IN THE TWO STRINGS BUT NOT IN BOTH.  
ENTER YOUR CHOICE:3  
{'r', 'a', 'm', 'e'}  
Press q to quit and c to continue: c  
\*\*\*\*\* MENU \*\*\*\*\*  
1: ADD TWO STRINGS  
2: DISPLAY COMMON LETTERS IN TWO STRING  
3: DISPLAY LETTERS WHICH ARE IN THE FIRST STRING BUT NOT IN THE SECOND STRING.  
4: DISPLAY SET OF ALL LETTERS OF BOTH THE STRINGS.  
5: DISPLAY LETTERS WHICH ARE IN THE TWO STRINGS BUT NOT IN BOTH.  
ENTER YOUR CHOICE:4  
[' ', 'a', 'e', 'h', 'i', 'm', 'n', 'o', 'p', 'r', 's', 't', 'y']  
Press q to quit and c to continue: |

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TODO Terminal Python Console Event Log Run

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Q.2 write Python Program to convert square matrix into lower triangular matrix

```

Ans
n = int(input("Enter the no. of row-column"))
m = []
for i in range(n):
    m.append(list(map(int, input().strip().split())))
print("original matrix is")
for k in range(n):
    print(*m[k])
for i in range(n):
    for j in range(n):
        if i < j:
            m[i][j] = 0
print("lower triangular matrix is:")
for k in range(n):
    print(*m[k])

```

File Edit View Navigate Code Refactor Run Tools VCS Window Help untitled [C:\Users\Harsh\PycharmProjects\untitled] - ...\\college\_prac\\ass1\_2.py - PyCharm

untitled > college\_prac > ass1\_2.py

ass1\_1.py ass1\_2.py ass1\_4.py

Run: ass1\_1 ass1\_2

```
C:/python38/python.exe C:/Users/Harsh/PycharmProjects/untitled/college_prac/ass1_2.py
ENTER THE NUMBER: 4
1 2 3 4
5 6 7 8
9 1 5 4
2 1 8 4
original matrix is:
1 2 3 4
5 6 7 8
9 1 5 4
2 1 8 4
lower triangular matrix is:
1 0 0 0
5 6 0 0
9 1 5 0
2 1 8 4

Process finished with exit code 0
```

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1: Project 2: Structure 3: Favorites

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3] write a python program to display python program files available in the current directory. open the file from displayed list, reverse its content and print it.

Ans.

```
import os
file = [x for x in os.listdir() if x.endswith(".py")]
print("Python files in directory are:")
print(file)
n = input("Enter file name to open and reverse")
for i in file:
    if(i == n):
        for line in reversed(list(open(n))):
            print(line.rstrip())
```

File Edit View Navigate Code Refactor Run Tools VCS Window Help PythonIDE [C:\Users\Harsh\PycharmProjects\PythonIDE] - ...ASS1\_3.py - PyCharm

PythonIDE / ASS1\_3.py

main.py x email.py x ASS1\_3.py x

Run: ASS1\_3

```
C:/python38/python.exe C:/Users/Harsh/PycharmProjects/PythonIDE/ASS1_3.py
['ASS1_3.py', 'email.py', 'main.py']
entre the file to open and reverse
email.py
    print(i)
for i in emails:
print("your extarcted emails are:")
emails = re.findall(r"[a-z0-9\.\-\+_\-]+@[a-z0-9\.\-\+_\-]+\.[a-z]+", text)
text = "Please contact us at contact@tutorialspoint.com for further information."
import re

Process finished with exit code 0
```

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Run TODO Terminal Python Console Event Log

PEP 8: no newline at end of file 13:1 CRLF UTF-8 4 spaces Python 3.8

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Q-4 write python module for stack data structure.

Ans

class Stack:

stack = []

def push(self):

s1 = int(input("Enter the NO to push"))

self.stack.append(s1)

def pop(self):

if (self.isEmpty()):

print("Stack is empty")

else:

s2 = self.stack.pop()

print(f'{s2} is popped')

def peek(self):

(("if self.isEmpty()"))

print("Stack is empty")

else:

s3 = self.stack[-1]

print(f'{s3} is peek element')

def isEmpty(self):

if (self.stack == []):

return (True)

else:

(return False)

```
def display(self):
    if (self.isEmpty()):
        print("Stack is empty")
    else:
        print("Element in stack are:")
        for i in self.stack:
            print(i)
```

```
s = Stack()
if __name__ == "__main__":
    while (True):
        print("1: PUSH")
        print("2: POP")
        print("3: PEEK")
        print("4: DISPLAY")
        OP = int(input("Enter your choice"))
        if (OP == 1):
            s.push()
        elif (OP == 2):
            s.pop()
        elif (OP == 3):
            s.peek()
        elif (OP == 4):
            s.display()
        else:
            print("Wrong input")
```

```
print("Press q to quit and c to continue")
ch = ""
while (ch != "c" and ch != "q"):
    ch = input()
    if ch == 'q':
        exit()
    elif ch == 'c':
        continue
```

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untitled > college\_prac > ass1\_4.py

ass1\_1.py ass1\_2.py ass1\_4.py

Run: ass1\_1 ass1\_4

```
C:\python38\python.exe C:/Users/Harsh/PycharmProjects/untitled/college_prac/ass1_4.py
***** MENU *****
1: PUSH
2: POP
3: PEEK
4: DISPLAY
ENTER YOUR CHOICE:1
entre the number to push:10
Press q to quit and c to continue: c
***** MENU *****
1: PUSH
2: POP
3: PEEK
4: DISPLAY
ENTER YOUR CHOICE:1
entre the number to push:20
Press q to quit and c to continue: c
***** MENU *****
1: PUSH
2: POP
3: PEEK
4: DISPLAY
ENTER YOUR CHOICE:1
entre the number to push:30
Press q to quit and c to continue: c
```

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untitled > college\_prac > ass1\_4.py

ass1\_1.py x ass1\_2.py x ass1\_4.py x

Run: ass1\_1 x ass1\_4 x

1: PUSH  
2: POP  
3: PEEK  
4: DISPLAY  
ENTER YOUR CHOICE:2  
30 is poped  
Press q to quit and c to continue: c  
\*\*\*\*\* MENU \*\*\*\*\*  
1: PUSH  
2: POP  
3: PEEK  
4: DISPLAY  
ENTER YOUR CHOICE:3  
20 is peek element  
Press q to quit and c to continue: c  
\*\*\*\*\* MENU \*\*\*\*\*  
1: PUSH  
2: POP  
3: PEEK  
4: DISPLAY  
ENTER YOUR CHOICE:4  
element of stack are:  
10  
20  
Press q to quit and c to continue:

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1: TODO 2: Terminal 3: Python Console

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51:36 CRLF UTF-8 4 spaces Python 3.8

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