PRACTICALS TERM 2 – PYTHON QUESTIONS

QUESTION NO.	OBJECTIVE & SOLUTIONS
1.	Write a program to implement all basic operations of stack , such as adding element (PUSH), removing element(POP) and displaying the stack elements(TRAVERSAL) using list.

SOURCE CODE:	stack=[]
	n=int(input('Enter the limit : '))
	
	def PUSH():
	  if isFull():
	    print('Stack overflow.')
	  else:
	    x=eval(input('Enter the element : '))
	    stack.append(x)
	def POP():
	  if isEmpty():
	    print('Stack underflow.')
	  else:
	    stack.pop()
	def TRAVERSAL():
	  if isEmpty():
	    print('Stack underflow')
	  else:
	    for i in stack[::-1]:
	      print(i)
	def PEEK():
	  if isEmpty():
	    print('Stack underflow')
	  else:
	    print(stack[-1])
	def isFull():
	  if len(stack)==n:
	    return True
	  else:

```python
      return False
def isEmpty():
  if len(stack)==0:
    return True
  else:
    return False

while True:
  print('1.Push\n2.Pop\n3.Peek\n4.Traversal\n5.Exit')
  c=int(input('Enter your choice : '))
  if c==1:
    print()
    x=int(input('Enter the limit (max=%s): '%(n-len(stack))))
    for i in range(x):
      PUSH()
  elif c==2:
    POP()
  elif c==3:
    print('The last element is :',end=' ')
    PEEK()
  elif c==4:
    print('The elements are :')
    TRAVERSAL()
  elif c==5:
    break
  else:
    print('Invalid entry.')
  print()
```

OUTPUT:	Enter the limit : 3 1.Push 2.Pop 3.Peek 4.Traversal 5.Exit Enter your choice : 1 Enter the limit (max=3): 3 Enter the element : 1 Enter the element : 2 Enter the element : 3 1.Push 2.Pop 3.Peek 4.Traversal 5.Exit Enter your choice : 2 1.Push 2.Pop 3.Peek 4.Traversal 5.Exit Enter your choice : 3 The last element is : 2 1.Push 2.Pop 3.Peek 4.Traversal 5.Exit Enter your choice : 4 The elements are : 2 1 1.Push 2.Pop 3.Peek 4.Traversal

	5.Exit Enter your choice : 5 >>>

QUESTION NO.	OBJECTIVE & SOLUTIONS
2.	Write a program to display unique vowels present in the given word using stack.
| **SOURCE CODE:** | ```python
def PUSH(x):
    stack.append(x)
def TRAVERSAL(x):
    for i in stack[::-1]:
        print(i)
x=input('Enter the word : ')
v='aeiou'
stack=[]
for i in x:
    if i.lower() in v and i not in stack:
        PUSH(i)
TRAVERSAL(stack)
``` |
| **OUTPUT:** | 1)Enter the word : Computer
  e
  u
  o

2)Enter the word : Source
  e
  u
  o

3)Enter the word : Output
  u
  u |

QUESTION NO.	OBJECTIVE & SOLUTIONS
3.	Write a menu based program to perform push and pop operations on a Stack. Each node of the Stack contains the following Member's details as given below: Member id integer Member Name string Age integer
SOURCE CODE:	(see code below)

```python
stack=[]
n=int(input('Enter the limit : '))

def PUSH():
  if isFull():
    print('Stack overflow.')
  else:
    l=[]
    l.append(int(input('Enter the Member Id : ')))
    l.append(input('Enter the Member name : '))
    l.append(int(input('Enter the age : ')))
    stack.append(l)
def POP():
  if isEmpty():
    print('Stack underflow.')
  else:
    stack.pop()
def TRAVERSAL():
  if isEmpty():
    print('Stack underflow')
  else:
    for i in stack[::-1]:
      print('Member Id : %s\nMember Name : %s\nAge : %s\n'%(i[0],i[1],i[2]))

def PEEK():
  if isEmpty():
    print('Stack underflow')
  else:
```

```
        print('Member Id : %s\nMember Name : %s\nAge :
%s\n'%(stack[-1][0],stack[-1][1],stack[-1][2]))
def isFull():
  if len(stack)==n:
    return True
  else:
    return False
def isEmpty():
  if len(stack)==0:
    return True
  else:
    return False


while True:
  print('1.Push\n2.Pop\n3.Peek\n4.Traversal\n5.Exit')
  c=int(input('Enter your choice : '))
  print()
  if c==1:
    print()
    if isFull():
      print('Stack overflow.')
      continue
    x=int(input('Enter the limit (max=%s): '%(n-len(stack))))
    for i in range(x):
      if isFull():
        print('Stack overflow.')
        continue
      PUSH()
  elif c==2:
    POP()
  elif c==3:
    print('The last element is :')
    PEEK()
  elif c==4:
    print('The elements are :')
    TRAVERSAL()
  elif c==5:
```

	break
	  else:
	    print('Invalid entry.')
	  print()

OUTPUT:	Enter the limit : 2 1.Push 2.Pop 3.Peek 4.Traversal 5.Exit Enter your choice : 1 Enter the limit (max=2): 2 Enter the Member Id : 1 Enter the Member name : a Enter the age : 2 Enter the Member Id : 2 Enter the Member name : b Enter the age : 2 1.Push 2.Pop 3.Peek 4.Traversal 5.Exit Enter your choice : 1 Stack overflow. 1.Push 2.Pop 3.Peek 4.Traversal 5.Exit Enter your choice : 2 1.Push 2.Pop 3.Peek 4.Traversal 5.Exit Enter your choice : 1

Enter the limit (max=1): 1
Enter the Member Id : 2
Enter the Member name : b
Enter the age : 3

1.Push
2.Pop
3.Peek
4.Traversal
5.Exit
Enter your choice : 3
The last element is :
Member Id : 2
Member Name : b
Age : 3

1.Push
2.Pop
3.Peek
4.Traversal
5.Exit
Enter your choice : 4
The elements are :
Member Id : 2
Member Name : b
Age : 3

Member Id : 1
Member Name : a
Age : 2

1.Push
2.Pop
3.Peek
4.Traversal
5.Exit
Enter your choice : 5
>>>