**PRACTICALS TERM 2 – PYTHON QUESTIONS**

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| **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:  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  >>> |

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| **QUESTION**  **NO.** | **OBJECTIVE & SOLUTIONS** |
| **2.** | Write a program to display unique vowels present in the given word using stack. |
| **SOURCE**  **CODE:** | 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 |

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| **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:** | 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  >>> |