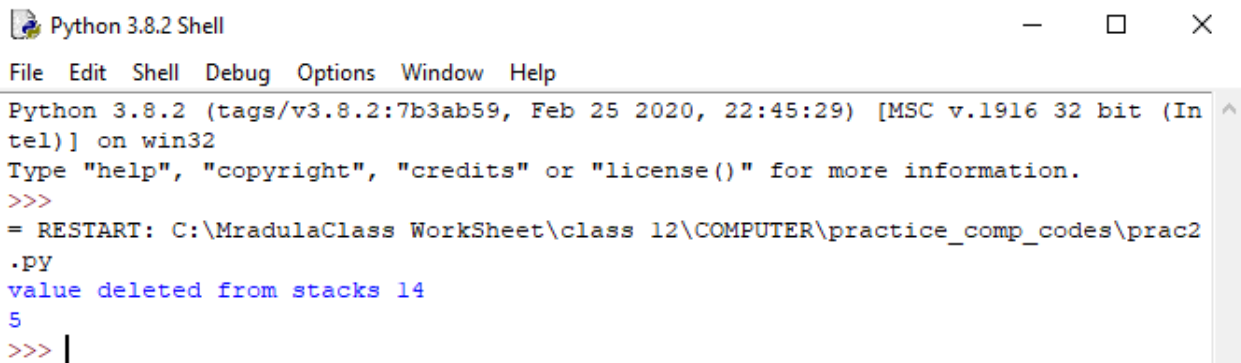# STACK

1. Declaration for list implemented stack.

```python
def pop(stack,top):
    if not stack:
        print("stack is empty")
    else:
        num=stack.pop()
        top=top-1
        print("value deleted from stacks",num)
        print(top)
        return top
t=[1,2,5,9,10,14]
r=len(t)
pop(t,r)
```

```
Python 3.8.2 Shell                                    —    ☐    ✕

File  Edit  Shell  Debug  Options  Window  Help

Python 3.8.2 (tags/v3.8.2:7b3ab59, Feb 25 2020, 22:45:29) [MSC v.1916 32 bit (In
tel)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:\MradulaClass WorkSheet\class 12\COMPUTER\practice_comp_codes\prac2
.py
value deleted from stacks 14
5
>>>
```

2. Implementation of list as stack

```python
s=[]
c='y'
while (c=='y'):
    print("1.PUSH")
    print("2.POP")
    ch=int(input("enter your choice"))
    if ch==1:
        a=input("enter any number :")
        s.append(a)
    elif ch==2:
        if s==[]:
            print("stack empty")
        else:
            print("deleted element is :",s.pop())
    elif ch==3:
        l=len(s)
        for i in range(l-1,-1,-1):
            print(s[i])
    else:
        print("wrong input")
    c=input("do u want to continue?")
```

```
Python 3.8.2 Shell                                              —     □     ×

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Python 3.8.2 (tags/v3.8.2:7b3ab59, Feb 25 2020, 22:45:29) [MSC v.1916 32 bit (In
tel)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:\MradulaClass WorkSheet\class 12\COMPUTER\practice_comp_codes\prac2
.py
1.PUSH
2.POP
enter your choice1
enter any number :2
do u want to continue?y
1.PUSH
2.POP
enter your choice1
enter any number :7
do u want to continue?y
1.PUSH
2.POP
enter your choice1
enter any number :9
do u want to continue?y
1.PUSH
2.POP
enter your choice2
deleted element is : 9
do u want to continue?3
>>> |
```

3. A program to display unique vowels present in the given word
   vowels=['a','e','i','o','u']
   w=input("enter the word to search for vowel:")
   s=[]
   for i in w:
      if i in vowels:
         if i not in s:
            s.append(i)
   print(s)
   print("the number of different vowels present in",w,"is",len(s))

```
Python 3.8.2 Shell                                    —    □    ☓

File  Edit  Shell  Debug  Options  Window  Help
Python 3.8.2 (tags/v3.8.2:7b3ab59, Feb 25 2020, 22:45:29) [MSC v.1916 32 bit (In
tel)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:\MradulaClass WorkSheet\class 12\COMPUTER\practice_comp_codes\prac2
.py
enter the word to search for vowel:mradula pandey
['a', 'u', 'e']
the number of different vowels present in mradula pandey is 3
>>> |
```
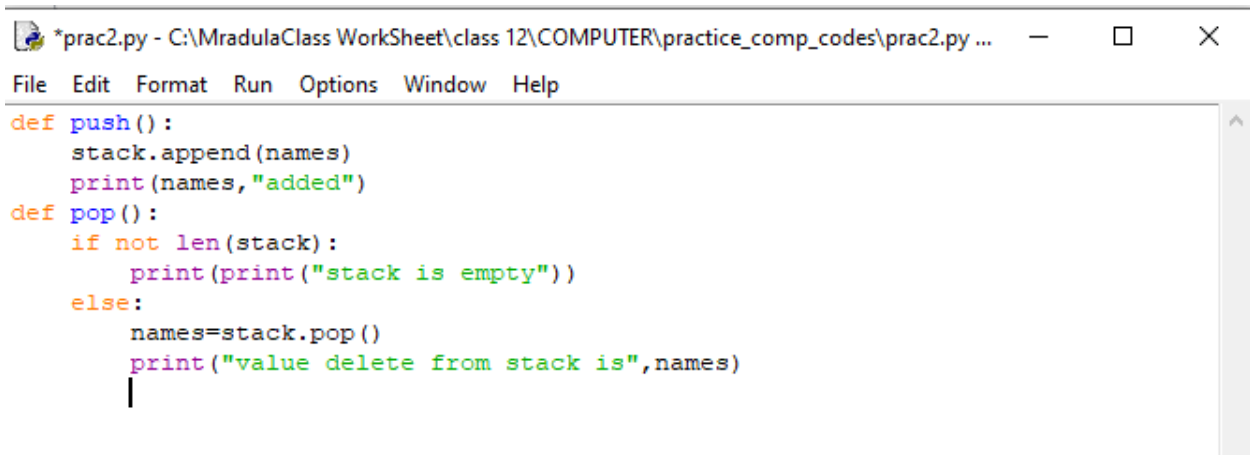
4. Write push(names) and pop(names) method in python to add names and remove names considering them to act as push and pop operation in stack.

```
*prac2.py - C:\MradulaClass WorkSheet\class 12\COMPUTER\practice_comp_codes\prac2.py ...    —    □    ✕

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def push():
    stack.append(names)
    print(names,"added")
def pop():
    if not len(stack):
        print(print("stack is empty"))
    else:
        names=stack.pop()
        print("value delete from stack is",names)
```

5. Implementing list as a queue using function pop()

```python
a=[]
c='y'
while c=='y':
    print("1.insert")
    print("2.delete")
    print("3.display")
    c=int(input("enter your choice:"))
    if c==1:
        b=int(input("enter a new number "))
        a.append(b)
    elif c==2:
        if a==[]:
            print("queue empty")
        else:
            print("deleted element is :" ,a[0])
            a.pop(0)
    elif c==3:
        l=len(a)
        for i in range(0,l):
            print(a[i])
    else:
        print("wrong answer")
    c=input("do u want to continue or not")
```

```
= RESTART: C:\MradulaClass WorkSheet\class 12\COMPUTER\practice_comp_codes\prac2.py
1.insert
2.delete
3.display
enter your choice:1
enter a new number 1
do u want to continue or noty
1.insert
2.delete
3.display
enter your choice:1
enter a new number 2
do u want to continue or noty
1.insert
2.delete
3.display
enter your choice:1
enter a new number 3
do u want to continue or noty
1.insert
2.delete
3.display
enter your choice:3
1
2
3
do u want to continue or noty
1.insert
2.delete
3.display
enter your choice:2
deleted element is : 1
do u want to continue or noty
1.insert
2.delete
3.display
enter your choice:3
2
3
do u want to continue or not
>>>
```

6. A program to add , delete and display the records of an employee using list and its implementation through stack

```python
e=[]
c='y'
while c=='y':
    print("1.push")
    print("2.pop")
    print("3.display")
    t=int(input("enter your choice : "))
    if t==1:
        e_id=input("enter employee no. ")
        ename=input("enter the employee name:")
        emp=(e_id,ename)
        e.append(emp)
    elif t==2:
        if e==[]:
            print("stack empty")
        else:
            e_id,ename=e.pop()
            print("deleted element is : ",e_id,ename)
    elif t==3:
        i=len(e)
        while i>0:
            print(e[i-1])
            i=i-1
    else:
        print("wrong input")
    c=input("do you want to cantinue or not?")
```

```
Python 3.8.2 Shell                                        —    □    ✕

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Python 3.8.2 (tags/v3.8.2:7b3ab59, Feb 25 2020, 22:45:29) [MSC v.1916 32 bit (In
tel)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:\MradulaClass WorkSheet\class 12\COMPUTER\practice_comp_codes\prac2
.py
1.push
2.pop
3.display
enter your choice : 1
enter employee no. 12
enter the employee name:mradula
do you want to cantinue or not?y
1.push
2.pop
3.display
enter your choice : 1
enter employee no. 134
enter the employee name:shanaya
do you want to cantinue or not?y
1.push
2.pop
3.display
enter your choice : 2
deleted element is :   134 shanaya
do you want to cantinue or not?y
1.push
2.pop
3.display
enter your choice : 3
('12', 'mradula')
do you want to cantinue or not?n
>>> |
```

7. Implement stack in a list of books having book code,book name, price.

```python
book=[]
c='y'
while (c=='y'):
    print("1.ADD")
    print("2.REMOVE")
    print("3.DISPLAY")
    t=int(input("ENTER OPTION"))
    if t==1:
        bn=input("ENTER BOOK NAME")
        boc=input("ENTER BOOK CODE")
        bp=int(input("ENTER PRICE"))
        l=[boc,bn,bp]
        book.append(l)
        print("BOOK ADDED")
    elif t==2:
        if book==[]:
            print("NO BOOKS ADDED YET")
        else:
            k=book.pop()
            print("BOOK REMOVED :",k)
    elif t==3:
        for i in book[::-1]:
            print(i)
    else:
        print("WRONG CHOICE")
    c=input("ENTER OPTION")

    USING FUNCTION:
    def push():
        bn=input("ENTER BOOK NAME")
        boc=input("ENTER BOOK CODE")
        bp=int(input("ENTER PRICE"))
        l=[boc,bn,bp]
        book.append(l)
    def pop():
        if book==[]:
            print("NO BOOKS ADDED YET")
        else:
            k=book.pop()
            print("BOOK REMOVED :",k)
```

```python
book=[]
c='y'
while (c=='y'):
    print("1.ADD")
    print("2.REMOVE")
    print("3.DISPLAY")
    t=int(input("ENTER OPTION"))
    if t==1:
        push()
        print("BOOK ADDED")
    elif t==2:
        pop()
    elif t==3:
        for i in book[::-1]:
            print(i)
    else:
        print("WRONG CHOICE")
    c=input("ENTER OPTION")
```

```
====================== RESTART: /home/student/practice.py ======================
1.ADD
2.REMOVE
3.DISPLAY
ENTER OPTION1
ENTER BOOK NAMEabc
ENTER BOOK CODEa123
ENTER PRICE2000
BOOK ADDED
ENTER OPTIONy
1.ADD
2.REMOVE
3.DISPLAY
ENTER OPTION3
['a123', 'abc', 2000]
ENTER OPTIONy
1.ADD
2.REMOVE
3.DISPLAY
ENTER OPTION1
ENTER BOOK NAMExyz
ENTER BOOK CODEa234
ENTER PRICE500
BOOK ADDED
ENTER OPTIONy
1.ADD
2.REMOVE
3.DISPLAY
ENTER OPTION3
['a234', 'xyz', 500]
['a123', 'abc', 2000]
ENTER OPTIONy
1.ADD
2.REMOVE
3.DISPLAY
ENTER OPTION2
BOOK REMOVED : ['a234', 'xyz', 500]
ENTER OPTIONn
>>>
```