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**Task 8.1**

from numpy import array

def Push(arr , top, MAXSTK ,item):

if(top[0]==MAXSTK-1):

print("stack is full")

else:

top[0]+=1

arr[top[0]]=item

top=[-1]

MAXSTK=5

Arr = array([0 for i in range(MAXSTK)])

Item = int(input("Enter the value"))

Push(Arr,top,MAXSTK,Item)

Item = int(input("Enter the value"))

Push(Arr,top,MAXSTK,Item)

Item = int(input("Enter the value"))

Push(Arr,top,MAXSTK,Item)

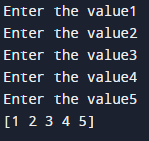
Item = int(input("Enter the value"))

Push(Arr,top,MAXSTK,Item)

Item = int(input("Enter the value"))

Push(Arr,top,MAXSTK,Item)

print(Arr)



**Task 8.2**

from numpy import array

def Push(arr , top, MAXSTK ,item):

if(top[0]==MAXSTK-1):

print("stack is full")

else:

top[0]+=1

arr[top[0]]=item

top=[-1]

MAXSTK=5

Arr = array([0 for i in range(MAXSTK)])

def Pop(arr , top):

if(top[0]== -1):

print("stack is full")

else:

item = arr[top[0]]

top[0] = top[0] - 1

return item

top=[-1]

MAXSTK=5

Item = int(input("Enter the value"))

Push(Arr,top,MAXSTK,Item)

Item = int(input("Enter the value"))

Push(Arr,top,MAXSTK,Item)

Item = int(input("Enter the value"))

Push(Arr,top,MAXSTK,Item)

Item = int(input("Enter the value"))

Push(Arr,top,MAXSTK,Item)

Item = int(input("Enter the value"))

Push(Arr,top,MAXSTK,Item)

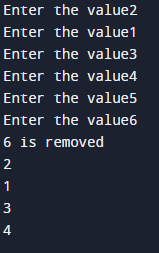
item = int(input("Enter the value"))

Pop(Arr,top)

print(str(item) + " is removed")

for i in range(top[0]+1):

print(Arr[i])



**Task 8.3**

from numpy import array

def Push(arr , top, MAXSTK ,item):

if(top[0]==MAXSTK-1):

print("stack is full")

else:

top[0]+=1

arr[top[0]]=item

top=[-1]

MAXSTK=5

Arr = array([0 for i in range(MAXSTK)])

def Peek(arr , top):

if(top[0]== -1):

print("stack is full")

else:

return arr[top[0]]

top=[-1]

MAXSTK=5

Item = int(input("Enter the value"))

Push(Arr,top,MAXSTK,Item)

Item = int(input("Enter the value"))

Push(Arr,top,MAXSTK,Item)

Item = int(input("Enter the value"))

Push(Arr,top,MAXSTK,Item)

Item = int(input("Enter the value"))

Push(Arr,top,MAXSTK,Item)

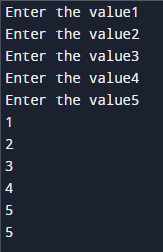
Item = int(input("Enter the value"))

Push(Arr,top,MAXSTK,Item)

for i in range(top[0]+1):

print(Arr[i])

print(Peek(Arr,top))



**Task 8.4**

def IsFull(top, MAXSTK):

if(top[0] == MAXSTK-1):

return True

else:

return False

top = [-1]

MAXSTK = 5

Arr = array ([0 for i in range(0, MAXSTK)])

Item = int(input("Enter value: "))

Push(Arr, top, MAXSTK, Item)

Item = int(input("Enter Value: "))

Push(Arr, top, MAXSTK, Item)

Item = int(input("Enter Value: "))

Push(Arr, top, MAXSTK, Item)

Item = int(input("Enter Value: "))

Push(Arr, top, MAXSTK, Item)

Item = int(input("Enter Value: "))

Push(Arr, top, MAXSTK, Item)

Item = int(input("Enter Value: "))

Push(Arr, top, MAXSTK, Item)

for i in range(0, top[0]+1):

print(Arr[i])

print(IsFull(top, MAXSTK))

**Task 8.5**

from numpy import array

def IsEmpty(top, maxstk):

if(top[0] == -1):

return True

else:

return False

top = [-1]

maxstk = 5

arr = array([0 for i in range(0, maxstk)])

print(IsEmpty(top))