**PRACTICAL NO:06**

**PROGRAM:**

def input\_percentage():

perc=[]

number\_of\_students=int(input("enter the number of students:"))

for i in range(number\_of\_students):

perc.append(float(input("enter the pecentage of students{0}:".format(i+1))))

return perc

def print\_percentage(perc):

for i in range(len(perc)):

print(perc[i],sep="\n")

def percentage\_partition(perc,start,end):

pivot=perc[start]

lower\_bound=start+1

upper\_bound=end

while True:

while lower\_bound<=upper\_bound and perc[lower\_bound]<=pivot:lower\_bound+=1

while lower\_bound<=upper\_bound and perc[upper\_bound]>=pivot:upper\_bound-=1

if lower\_bound<=upper\_bound:

perc[lower\_bound],perc[upper\_bound]=perc[upper\_bound],perc[lower\_bound]

else:

break

perc[start],perc[upper\_bound]=perc[upper\_bound],perc[start]

return upper\_bound

def Quick\_sort(perc,start,end):

while start<end:

partition =percentage\_partition(perc,start,end)

Quick\_sort(perc,start,partition-1)

Quick\_sort(perc,partition+1,end)

return perc

def display\_top\_five(perc):

print("top five percentage are:")

if len(perc)<5:

start,stop=len(perc)-1,-1

else:

start,stop=len(perc)-1,len(perc)-6

for i in range(start,stop,-1):

print(perc[i],sep="\n")

#main

unsorted\_percentage=[]

sorted\_percentage=[]

flag=1

while flag==1:

print("\n\n--------------MENU--------------------\n")

print("1.Accept the percentage of students")

print("2.display the percentage of students")

print("3.Perform Quick sort on the data")

print("4.Exit")

ch=int(input("enter your choice(from 1 to 4):"))

if ch==1:

unsorted\_percentage=input\_percentage()

elif ch==2:

print\_percentage(unsorted\_percentage)

elif ch==3:

print("Percentage of students after performing Quick sort:")

sorted\_percentage=Quick\_sort(unsorted\_percentage,0,len(unsorted\_percentage)-1)

print\_percentage(sorted\_percentage)

a=input("Do you want to display the top 5 percentage of students(yes/no):")

if a=="yes":

display\_top\_five(sorted\_percentage)

elif ch==4:

print("thanks for using this program!!")

else:

print("invalid choice")

**OUTPUT:**

--------------MENU--------------------

1.Accept the percentage of students

2.display the percentage of students

3.Perform Quick sort on the data

4.Exit

enter your choice(from 1 to 4):1

enter the number of students:4

enter the pecentage of students1:55

enter the pecentage of students2:80

enter the pecentage of students3:99

enter the pecentage of students4:40

--------------MENU--------------------

1.Accept the percentage of students

2.display the percentage of students

3.Perform Quick sort on the data

4.Exit

enter your choice(from 1 to 4):2

55.0

80.0

99.0

40.0

--------------MENU--------------------

1.Accept the percentage of students

2.display the percentage of students

3.Perform Quick sort on the data

4.Exit

enter your choice(from 1 to 4):3

Percentage of students after performing Quick sort:

40.0

55.0

80.0

99.0

Do you want to display the top 5 percentage of students(yes/no):yes

top five percentage are:

99.0

80.0

55.0

40.0

--------------MENU--------------------

1.Accept the percentage of students

2.display the percentage of students

3.Perform Quick sort on the data

4.Exit

enter your choice(from 1 to 4):4

thanks for using this program!!