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Div :B

Batch: B3

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# Function for accepting the percentage of the Students

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 percentage of Student {0} : ".format(i+1))))

return perc

# Function for printing the percentage of the Students

def print\_percentage(perc):

for i in range(len(perc)):

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

# Function for performing partition of the Data

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

# Function for performing Quick Sort on the Data

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

# Function for Displaying Top Five Percentages of Students

def display\_top\_five(perc):

print("Top Five Percentages 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--------------------MENU--------------------")

print("1. Accept the Percentage of Students")

print("2. Display the Percentages 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("Percentages 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 Percentages of Students (yes/no) : ")

if a == 'yes':

display\_top\_five(sorted\_percentage)

elif ch == 4:

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

flag = 0

else:

print("Invalid Choice!!")