1. Problem Definition: Calculates and display the average quiz score for each student who takes a number of quizzes.
2. Problem Analysis: Create functions to be called by main(). One functions is going to collect the number of students and the amount of test taken. Another function is going collect the information from the input function and put the values into another function that will take the student number and for loop for each student score. The score will be accumulated and listed. The averages will be returned and added to a mega list for class average.
3. Program Algorithm:
   1. Gather input
   2. Loop to create average score and list
   3. Create loop to gather test scores
   4. Accumulate scores and divide average
   5. Output list and average of class list
4. Program Code and Test:

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# This program is designed to create a list for the students and calculate the total

def main():

try:

numStudents, numQuiz = getInput()

classlist = studentLoop(numStudents,numQuiz)

average = totalclassAVG(classlist)

classaverageOutput(average)

# General exemption

except:

print("Error somewhere in the program")

def getInput():

# Asks the user for students and quizzes taken

getStudents = int(input("How many students do you want to calculate? :"))

getQuiz = int(input("How many quizzes were taken for each student? :"))

# Returns student input and quiz input back to main()

return getStudents, getQuiz

def studentLoop(numStudents, numQuiz):

# Add blank list

classlist = []

for student in range(1, numStudents + 1): # Adding 1 because binary code sets 1 to 0

average, list = getQuiz(numQuiz) # Function to collect average test

classlist.append(average) # Add average to the "classlist" list

printOutput (list, average, student)

return classlist

def getQuiz(quiz):

# Add blank list

list = []

total = 0

for num in range(quiz):

score = float(input("What was the score of test number %d?" % (num + 1)))

list.append(score) # Add each input score into a list for further diplay

total = total + score # Base accumulator

average = total/quiz

return average, list

def getList(Quiz):

total = 0

for loop in range(Quiz):

score = float(input("What was the score of test number %d?" % (num + 1)))

list.append(score)

total = total + score # Base accumulator

average = total/Quiz # Calculation to find average

return list, average

def printOutput (list, average, student):

# Used python shortcuts to display which student and their average

print("The average for student %d is: %.2f." % (student, average))

print("Student test list:", list)

def totalclassAVG(classlist):

# Create base total

total = 0

for x in range(len(classlist)):

# Takes lenth of 'classlist' list and calculates the total

total = total + classlist[x]

# Divides the total by the amount numbers in the list

average = total/len(classlist)

return average

def classaverageOutput(average):

# Print class average

print("Average class total is %.2f" % average)

main()

Examples:



