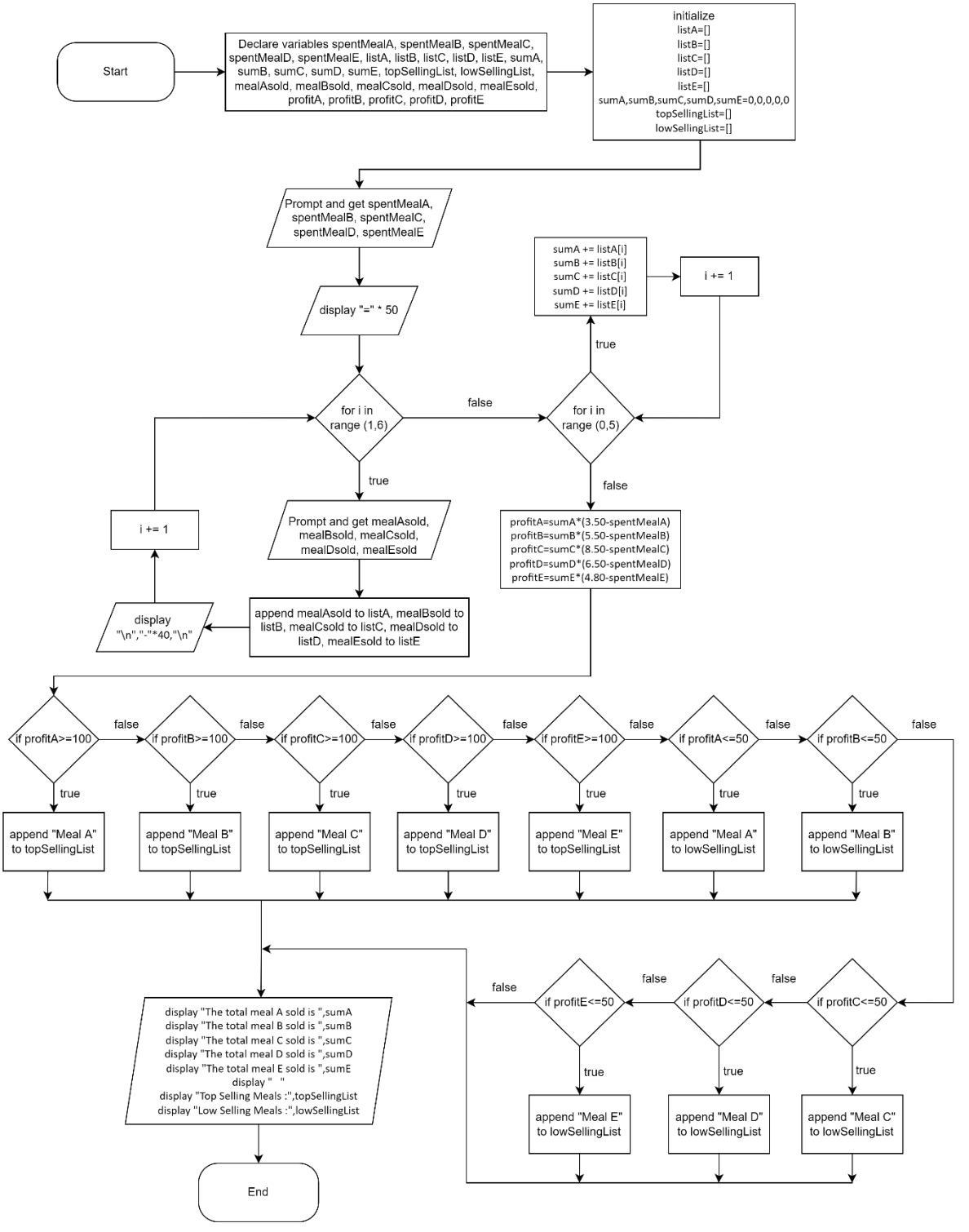
QUESTION 1 (a)

INPUT	PROCESS	OUTPUT

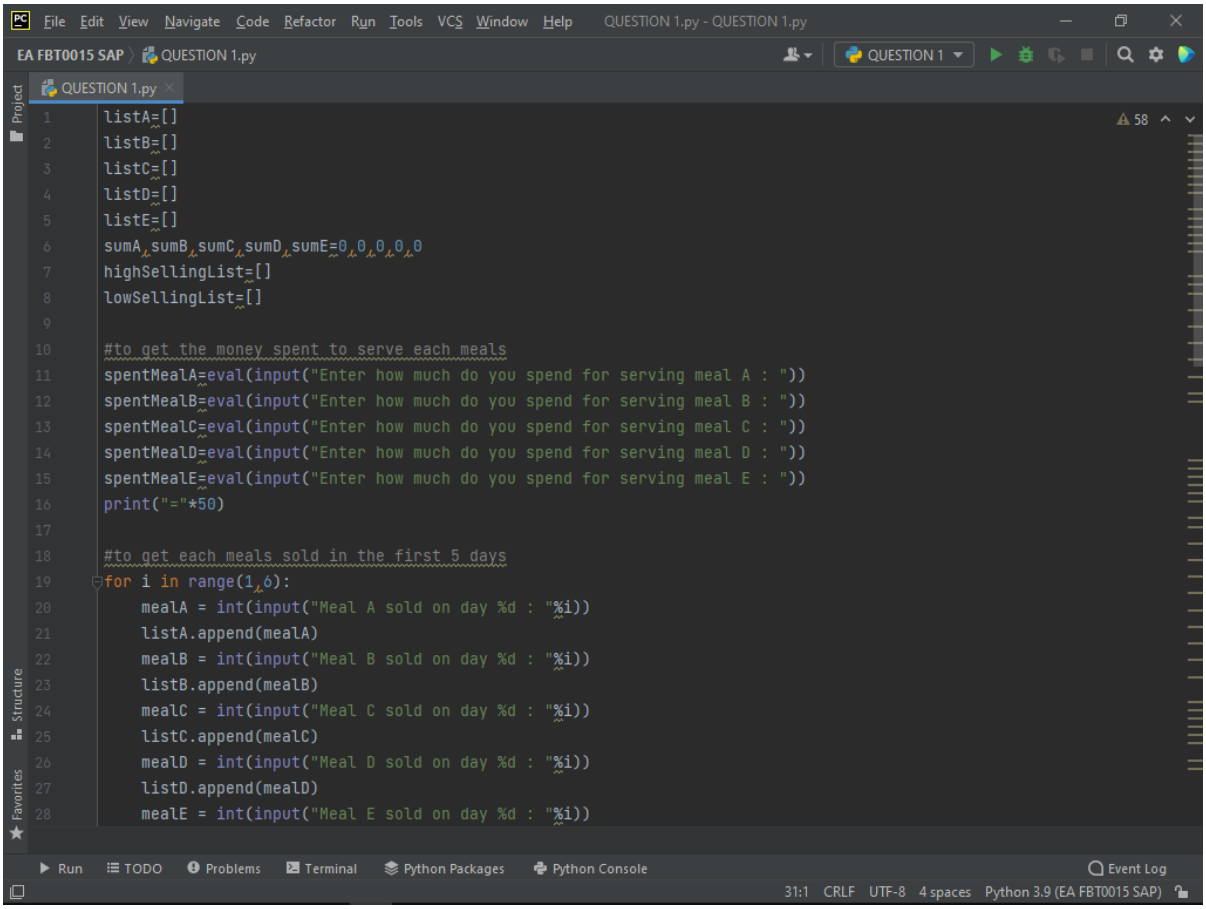
mealAsold
mealBsold
mealCsold
mealDsold
mealEsold
spentMealA
spentMealB
spentMealC
spentMealD
spentMealA
	Declare variables spentMealA, spentMealB, spentMealC, spentMealD, spentMealE, listA, listB, listC, listD, listE, sumA, sumB, sumC, sumD, sumE, topSellingList, lowSellingList, mealAsold, mealBsold, mealCsold, mealDsold, mealEsold, profitA, profitB, profitC, profitD, profitE
	
	Initialize listA=[], listB=[], listC=[], listD=[], listE=[], sumA=0, sumB=0, sumC=0, sumD=0, sumE=0, topSellingList=[], lowSellingList=[]
	
	Prompt and get spentMealA, spentMealB, spentMealC, spentMealD, spentMealE
	
	display “=”*50
	
	for i in range(1,6):
	  Prompt and get mealAsold, mealBsold , mealCsold, mealDsold, mealEsold
	
	  append mealAsold to listA, mealBsold to listB, mealCsold to listC, mealDsold to listD, mealEsold to listE
	
	  display "\n" , "-" * 40 , "\n"
	
	for i in range(0,5):
	  sumA += listA[i]
	  sumB += listB[i]
	  sumC += listC[i]
	  sumD += listD[i]
	  sumE += listE[i]
	
	profitA=sumA*(3.50-spentMealA)
	profitB=sumB*(5.50-spentMealB)
	profitC=sumC*(8.50-spentMealC)
	profitD=sumD*(6.50-spentMealD)
	profitE=sumE*(4.80-spentMealE)
		"The total meal A sold is ",sumA
		
		"The total meal B sold is ",sumB
		
		"The total meal C sold is ",sumC
		
		"The total meal D sold is ",sumD
		
		"The total meal E sold is ",sumE
		
		"Top Selling Meals :",topSellingList
		
		"Low Selling Meals :",lowSellingList

	if profitA>=100:
	  append "Meal A" to topSellingList
	if profitB>=100:
	  append "Meal B" to topSellingList
	if profitC>=100:
	  append "Meal C" to topSellingList
	if profitD>=100:
	  append "Meal D" to topSellingList
	if profitE>=100:
	  append "Meal E" to topSellingList
	if profitA <=50:
	  append "Meal A" to lowSellingList
	if profitB <=50:
	  append "Meal B" to lowSellingList
	if profitC <=50:
	  append "Meal C" to lowSellingList
	if profitD <=50:
	  append "Meal D" to lowSellingList
	if profitE <=50:
	  append "Meal E" to lowSellingList
	
	display "The total meal A sold is ",sumA
	display "The total meal B sold is ",sumB
	display "The total meal C sold is ",sumC
	display "The total meal D sold is ",sumD
	display "The total meal E sold is ",sumE
	display “ ”
	display "Top Selling Meals :",topSellingList
	display "Low Selling Meals :",lowSellingList	

QUESTION 1 (b)


Start
Declare variables spentMealA, spentMealB, spentMealC, spentMealD, spentMealE, listA, listB, listC, listD, listE, sumA, sumB, sumC, sumD, sumE, topSellingList, lowSellingList, mealAsold, mealBsold, mealCsold, mealDsold, mealEsold, profitA, profitB, profitC, profitD, profitE
initialize
listA=[]
listB=[]
listC=[]
listD=[]
listE=[]
sumA,sumB,sumC,sumD,sumE=0,0,0,0,0
topSellingList=[]
lowSellingList=[]
Prompt and get spentMealA, spentMealB, spentMealC, spentMealD, spentMealE
display "=" * 50
for i in range (1,6)
true
Prompt and get mealAsold, mealBsold, mealCsold, mealDsold, mealEsold
append mealAsold to listA, mealBsold to listB, mealCsold to listC, mealDsold to listD, mealEsold to listE
display "\n","-"*40,"\n"
i += 1
false
for i in range (0,5)
true
sumA += listA[i]
sumB += listB[i]
sumC += listC[i]
sumD += listD[i]
sumE += listE[i]
i += 1
false
profitA=sumA*(3.50-spentMealA)
profitB=sumB*(5.50-spentMealB)
profitC=sumC*(8.50-spentMealC)
profitD=sumD*(6.50-spentMealD)
profitE=sumE*(4.80-spentMealE)
if profitA>=100
true
append "Meal A" to topSellingList
false
if profitB>=100
true
append "Meal B" to topSellingList
false
if profitC>=100
true
append "Meal C" to topSellingList
false
if profitD>=100
true
append "Meal D" to topSellingList
false
if profitE>=100
true
append "Meal E" to topSellingList
false
if profitA<=50
true
append "Meal A" to lowSellingList
false
if profitB<=50
true
append "Meal B" to lowSellingList
false
if profitC<=50
true
append "Meal C" to lowSellingList
false
if profitD<=50
true
append "Meal D" to lowSellingList
false
if profitE<=50
true
append "Meal E" to lowSellingList
display "The total meal A sold is ",sumA
display "The total meal B sold is ",sumB
display "The total meal C sold is ",sumC
display "The total meal D sold is ",sumD
display "The total meal E sold is ",sumE
display " "
display "Top Selling Meals :",topSellingList
display "Low Selling Meals :",lowSellingList
End

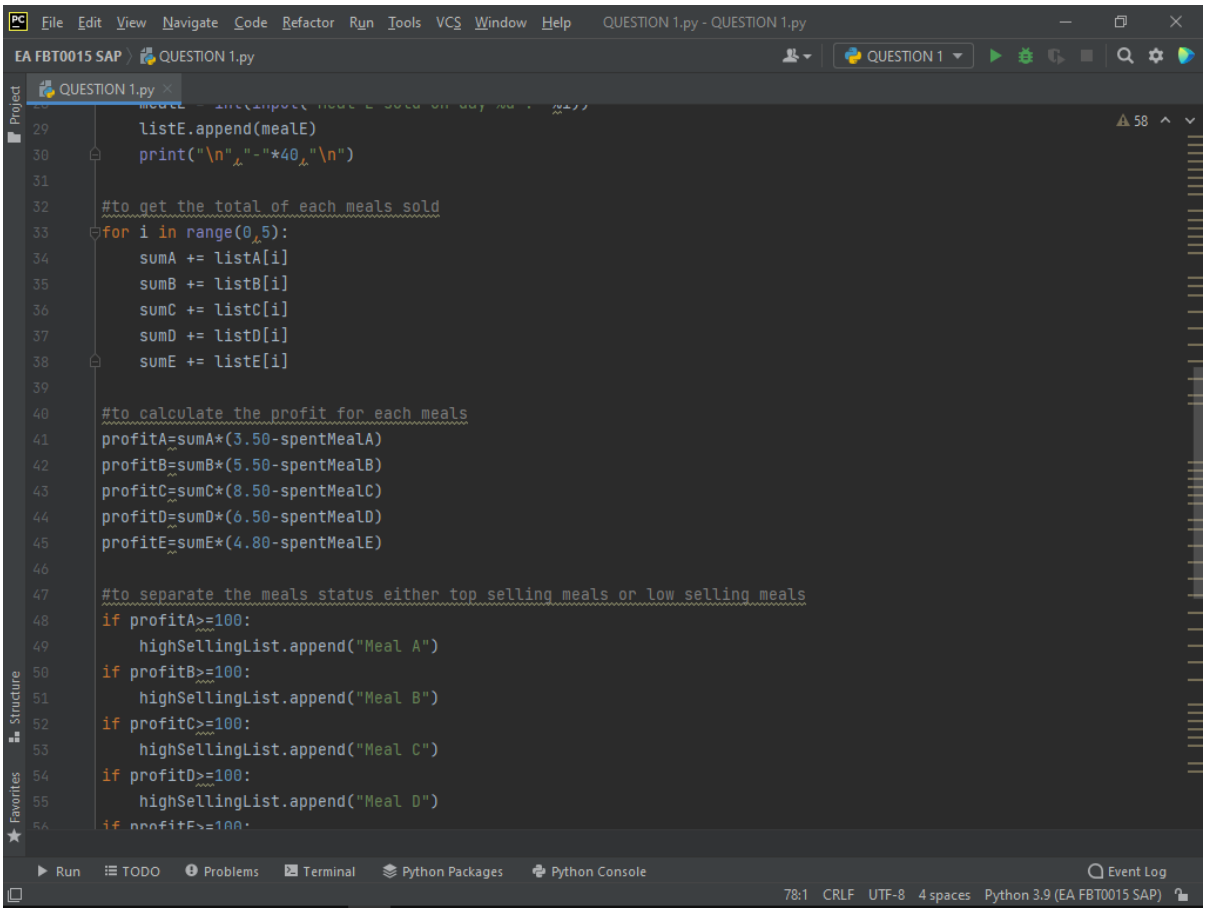
QUESTION 1 (c)




```python
listA=[]
listB=[]
listC=[]
listD=[]
listE=[]
sumA,sumB,sumC,sumD,sumE=0,0,0,0,0
highSellingList=[]
lowSellingList=[]

#to get the money spent to serve each meals
spentMealA=eval(input("Enter how much do you spend for serving meal A : "))
spentMealB=eval(input("Enter how much do you spend for serving meal B : "))
spentMealC=eval(input("Enter how much do you spend for serving meal C : "))
spentMealD=eval(input("Enter how much do you spend for serving meal D : "))
spentMealE=eval(input("Enter how much do you spend for serving meal E : "))
print("="*50)

#to get each meals sold in the first 5 days
for i in range(1,6):
    mealA = int(input("Meal A sold on day %d : "%i))
    listA.append(mealA)
    mealB = int(input("Meal B sold on day %d : "%i))
    listB.append(mealB)
    mealC = int(input("Meal C sold on day %d : "%i))
    listC.append(mealC)
    mealD = int(input("Meal D sold on day %d : "%i))
    listD.append(mealD)
    mealE = int(input("Meal E sold on day %d : "%i))
```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listE.append(mealE)
print("\n","-"*40,"\n")
#to get the total of each meals sold
for i in range(0,5):
sumA += listA[i]
sumB += listB[i]
sumC += listC[i]
sumD += listD[i]
sumE += listE[i]
#to calculate the profit for each meals
profitA=sumA*(3.50-spentMealA)
profitB=sumB*(5.50-spentMealB)
profitC=sumC*(8.50-spentMealC)
profitD=sumD*(6.50-spentMealD)
profitE=sumE*(4.80-spentMealE)
#to separate the meals status either top selling meals or low selling meals
if profitA>=100:
highSellingList.append("Meal A")
if profitB>=100:
highSellingList.append("Meal B")
if profitC>=100:
highSellingList.append("Meal C")
if profitD>=100:
highSellingList.append("Meal D")
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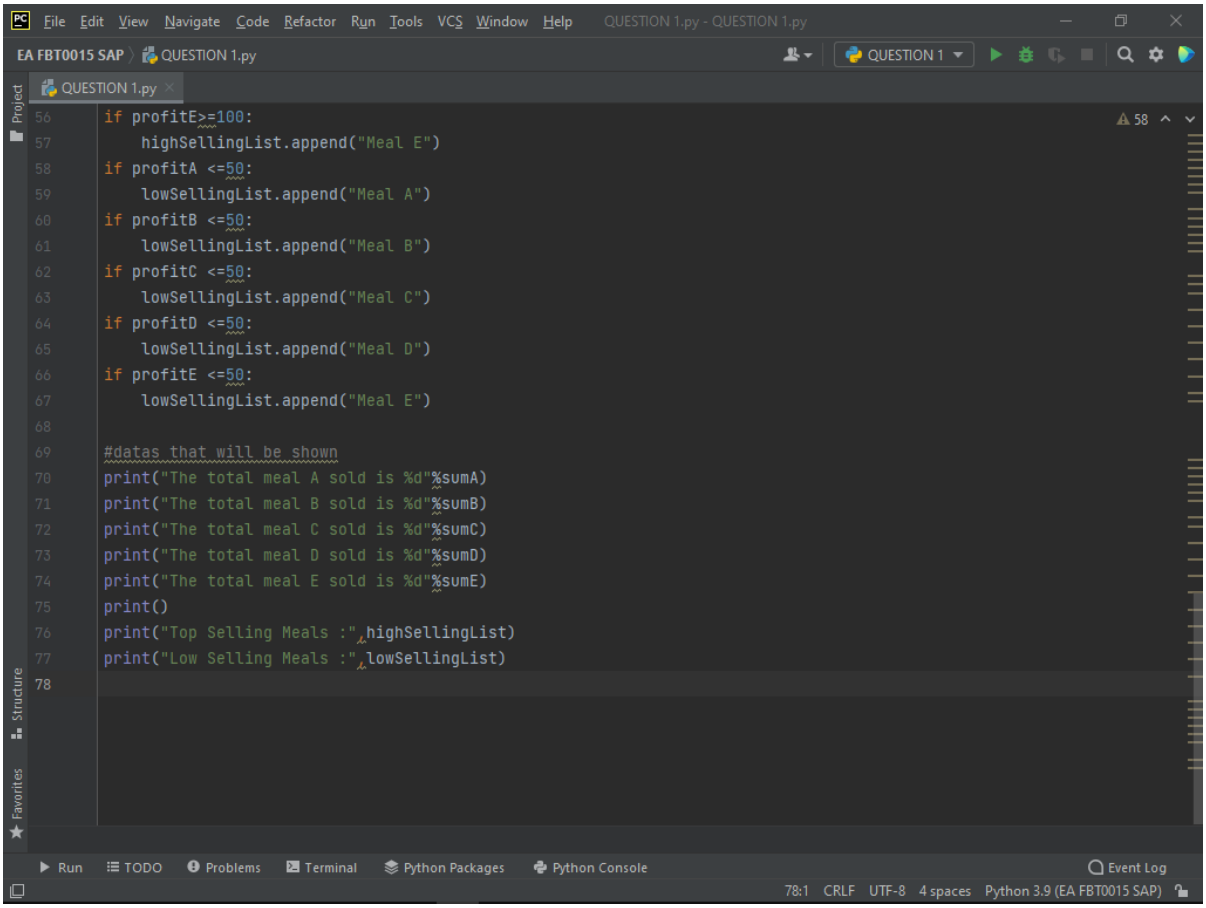
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if profitE>=100:
highSellingList.append("Meal E")
if profitA <=50:
lowSellingList.append("Meal A")
if profitB <=50:
lowSellingList.append("Meal B")
if profitC <=50:
lowSellingList.append("Meal C")
if profitD <=50:
lowSellingList.append("Meal D")
if profitE <=50:
lowSellingList.append("Meal E")
#datas that will be shown
print("The total meal A sold is %d"%sumA)
print("The total meal B sold is %d"%sumB)
print("The total meal C sold is %d"%sumC)
print("The total meal D sold is %d"%sumD)
print("The total meal E sold is %d"%sumE)
print()
print("Top Selling Meals :",highSellingList)
print("Low Selling Meals :",lowSellingList)
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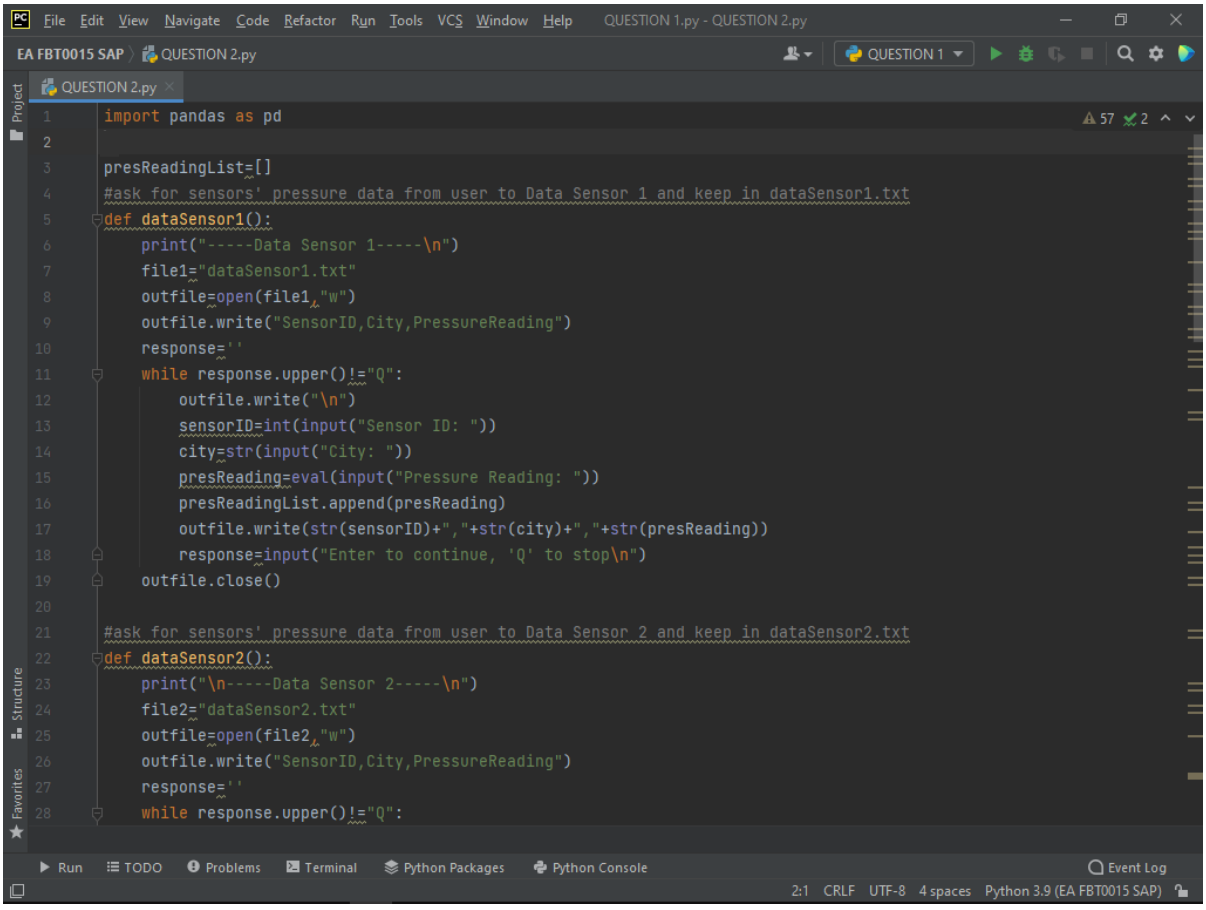
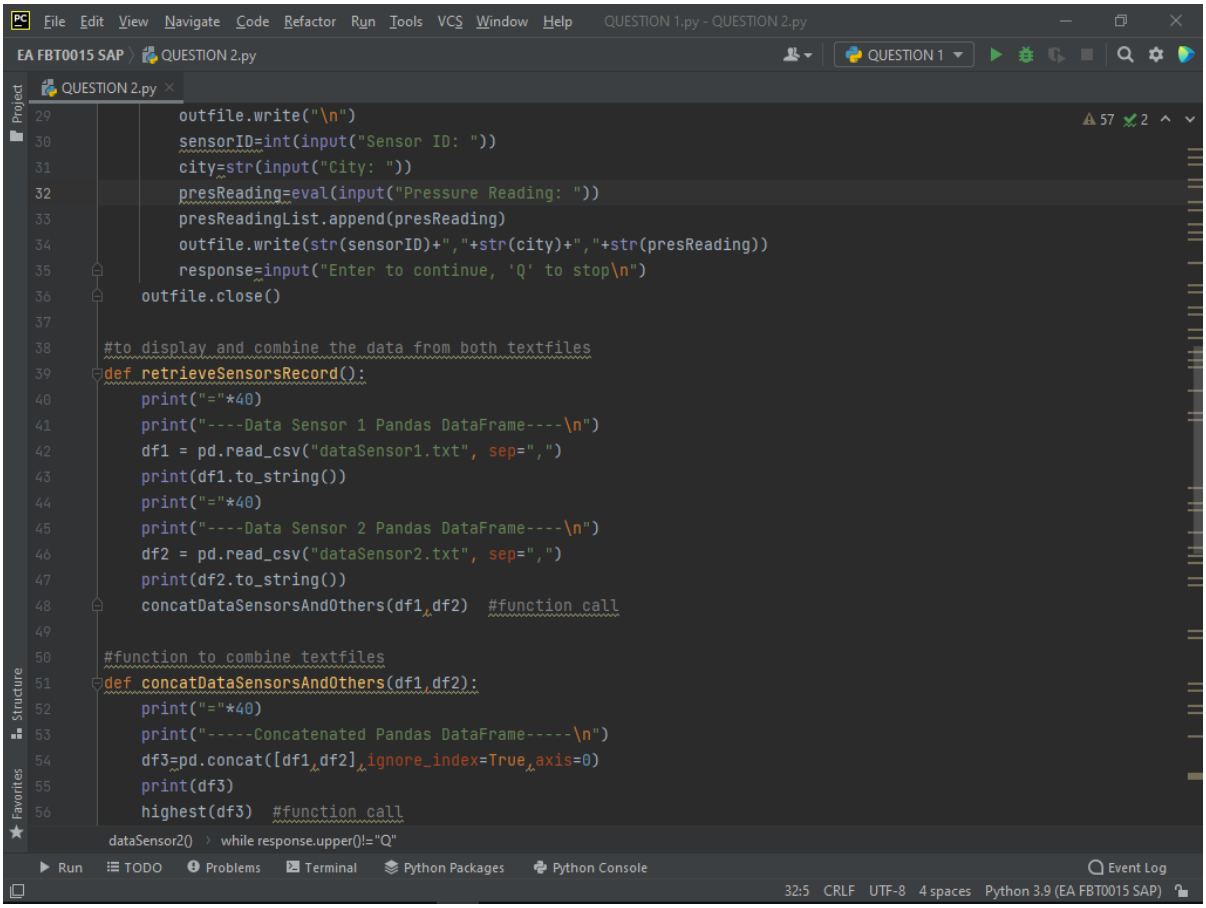
QUESTION 2




```python
import pandas as pd

presReadingList=[]
#ask for sensors' pressure data from user to Data Sensor 1 and keep in dataSensor1.txt
def dataSensor1():
    print("-----Data Sensor 1-----\n")
    file1="dataSensor1.txt"
    outfile=open(file1,"w")
    outfile.write("SensorID,City,PressureReading")
    response=''
    while response.upper()!="Q":
        outfile.write("\n")
        sensorID=int(input("Sensor ID: "))
        city=str(input("City: "))
        presReading=eval(input("Pressure Reading: "))
        presReadingList.append(presReading)
        outfile.write(str(sensorID)+","+str(city)+","+str(presReading))
        response=input("Enter to continue, 'Q' to stop\n")
    outfile.close()

#ask for sensors' pressure data from user to Data Sensor 2 and keep in dataSensor2.txt
def dataSensor2():
    print("\n-----Data Sensor 2-----\n")
    file2="dataSensor2.txt"
    outfile=open(file2,"w")
    outfile.write("SensorID,City,PressureReading")
    response=''
    while response.upper()!="Q":
```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outfile.write("\n")
sensorID=int(input("Sensor ID: "))
city=str(input("City: "))
presReading=eval(input("Pressure Reading: "))
presReadingList.append(presReading)
outfile.write(str(sensorID)+","+str(city)+","+str(presReading))
response=input("Enter to continue, 'Q' to stop\n")
outfile.close()
#to display and combine the data from both textfiles
def retrieveSensorsRecord():
print("="*40)
print("----Data Sensor 1 Pandas DataFrame----\n")
df1 = pd.read_csv("dataSensor1.txt", sep=",")
print(df1.to_string())
print("="*40)
print("----Data Sensor 2 Pandas DataFrame----\n")
df2 = pd.read_csv("dataSensor2.txt", sep=",")
print(df2.to_string())
concatDataSensorsAndOthers(df1,df2) #function call
#function to combine textfiles
def concatDataSensorsAndOthers(df1,df2):
print("="*40)
print("-----Concatenated Pandas DataFrame-----\n")
df3=pd.concat([df1,df2],ignore_index=True,axis=0)
print(df3)
highest(df3) #function call
dataSensor2() › while response.upper()!="Q"
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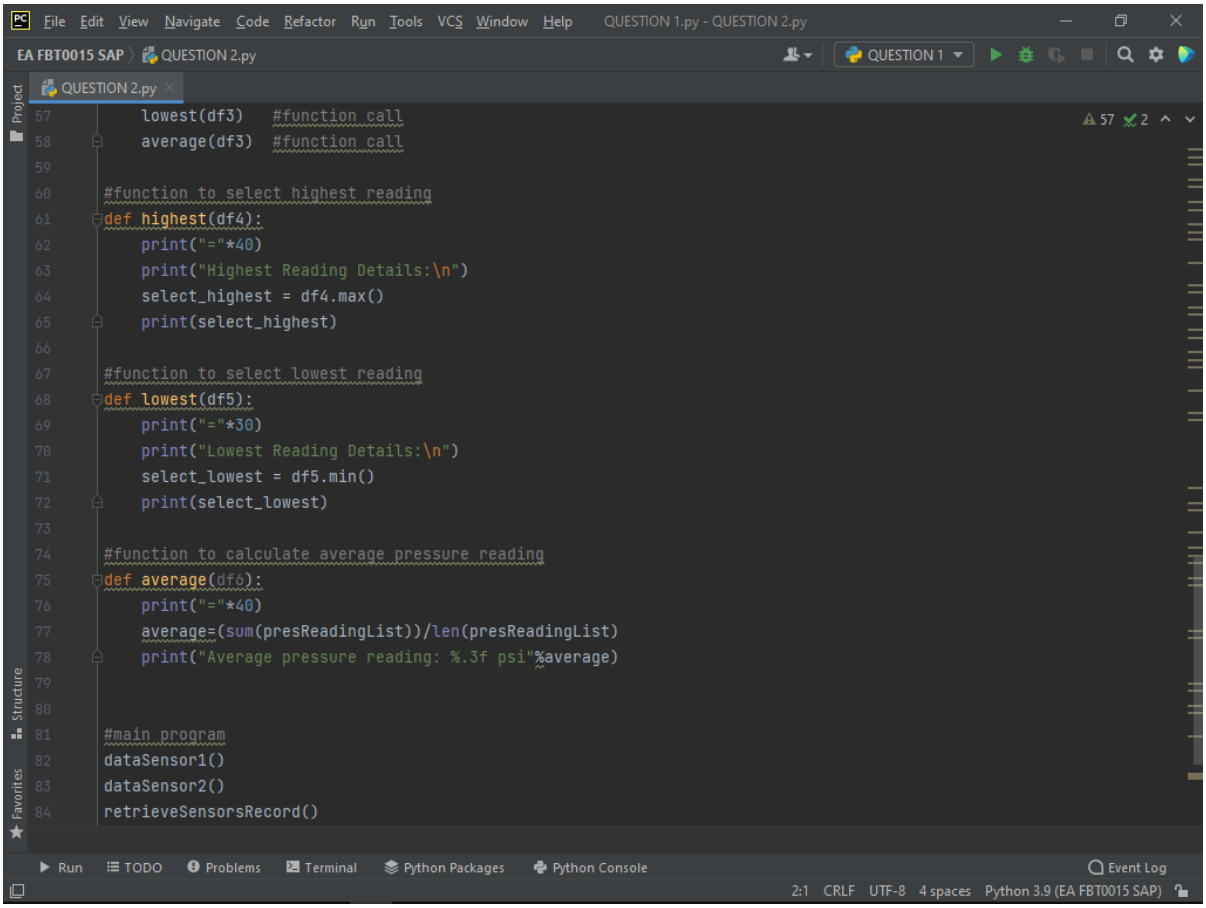
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lowest(df3) #function call
average(df3) #function call
#function to select highest reading
def highest(df4):
print("="*40)
print("Highest Reading Details:\n")
select_highest = df4.max()
print(select_highest)
#function to select lowest reading
def lowest(df5):
print("="*30)
print("Lowest Reading Details:\n")
select_lowest = df5.min()
print(select_lowest)
#function to calculate average pressure reading
def average(df6):
print("="*40)
average=(sum(presReadingList))/len(presReadingList)
print("Average pressure reading: %.3f psi"%average)
#main program
dataSensor1()
dataSensor2()
retrieveSensorsRecord()
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