Create new module: File, New, PyDevproject, key in project name, file, new, Pydev module, key in name, click ok

*'''*

*Basic string operations*

*'''*

s1 = *"ABCDE12345"*

print(len(s1))

print(s1[0], s1[-1]) #indexing

print(s1[0:5])

#\*and +

s2 = s1 + str(10)

print(s2)

s3 = s1 \* 2

print(s3)

#Some useful functions to be used with string

s4 = s1.lower()

print(s4)

s5 = s1 + *" "* + *"XYZ"* + *" "*

print(s5)

print(len(s5))

s6 = s5.rstrip()

print(s6)

print(len(s6))

s7 = *" ABCDE"*

s8 = s7.lstrip()

print(s8)

# using string to format output

mName = *"ICT133"*

mCre = 5

mHour = 18

#Creating a string and use it to format the output

mesg = *"Module is {} Credit is {} Hours = {}"*.format(mName, mCre, mHour)

print(mesg)

mesg = *"Module is {:20} Credit is {} Hours = {}"*.format(mName, mCre, mHour)

print(mesg)

10

A 5

ABCDE

ABCDE1234510

ABCDE12345ABCDE12345

abcde12345

ABCDE12345 XYZ

20

ABCDE12345 XYZ

17

ABCDE

Module is ICT133 Credit is 5 Hours = 18

Module is ICT133 Credit is 5 Hours = 18

*'''*

*Ask the user to enter a string in the form of*

*L.d.dd C.3.04 A.5.20*

*The program will print:*

*Block C level 3 Room 4*

*'''*

loc = input(*"Enter location"*)

print(loc)

block = loc [0]

level = loc [2]

room = loc[4:]

#Alternatively, use the split function

block, level, room = loc.split(*"."*)

print(*"Block is"*, block , *"Level is"*, level, *"Room is"*, room)

Enter location A.2.12

A.2.12

Block is A Level is 2 Room is 12

*'''*

*Ask the user to enter a string which has the following:*

*dddd dddd.dd d.dd*

*The first is the quantity*

*Second is the unit price*

*The last is the discount*

*Compute the total, discount and the final total*

*'''*

inputValue = input(*"Enter a string"*)

qty, unitPrice, discount = inputValue.split()

print(qty \* 10)

print(qty, unitPrice, discount)

#Convert values into numbers

qtyValue = int(qty)

priceValue = float(unitPrice)

discountValue = float(discount)

total = qtyValue \* priceValue

dis = total \* discountValue

grand = total - dis

#Print the results

print(*"Total is"*, total)

print(*"Discount is"*, dis)

print(*"Grand total is"*, grand)

Enter a string 10 12.5 0.01

10101010101010101010

10 12.5 0.01

Total is 125.0

Discount is 1.25

Grand total is 123.75

Boolean operators

num1 = 10

num2 = 20

num3 = 30

print(num1 == num2)

print(num1 <= num2)

print(num1 != num2)

print(num1 < num2 and num2 < num3)

print(num1 < num2 and num2 > num3)

print(num1 < num2 or num2 > num3)

False

True

True

True

False

True

*'''*

*Ask the user to enter 2 numbers*

*If the 2 numbers are the same, print the message "Same numbers"*

*Print the smaller number*

*'''*

num1 = int(input(*"Enter the first number"*))

num2 = int(input(*"Enter the second number"*))

if num1 < num2 :

print(*"Smaller number is"*, num1)

else :

print(*"Smaller number is"*, num2)

#to handle the third case: both numbers are the same, we use

#if...elif...

if num1 < num2 :

print(num1)

elif num2 < num1 :

print (num2)

else :

print(*"They are the same"*)

Enter the first number 10

Enter the second number 10

Smaller number is 10

They are the same

*'''*

*Ask the user to enter 3 different numbers*

*Print the number whose value is the middle value*

*E.g.*

*100 500 300 - output is 300*

*'''*

num1 = int(input(*"Enter the first number"*))

num2 = int(input(*"Enter the second number"*))

num3 = int(input(*"Enter the third number"*))

if num2 < num1 and num1 < num3 or num3 < num1 and num1 < num2:

print(num1)

elif num1 < num2 and num2 < num3 or num3 < num2 and num2 < num1:

print(num2)

else:

print(num3)

Enter the first number 10

Enter the second number100

Enter the third number1

10

ForLoop

for idx in [1,2,3,4,5,6,7,8,9,10]:

print(idx,*"x 5"*, *"="*, idx\*5)

1 x 5 = 5

2 x 5 = 10

3 x 5 = 15

4 x 5 = 20

5 x 5 = 25

6 x 5 = 30

7 x 5 = 35

8 x 5 = 40

9 x 5 = 45

10 x 5 = 50

for idx in range(1,11):

print(idx,*"x 5"*, *"="*, idx\*5)

for idx in range(1,100,9):

print(idx,*"x 5"*, *"="*, idx\*5)

1 x 5 = 5

2 x 5 = 10

3 x 5 = 15

4 x 5 = 20

5 x 5 = 25

6 x 5 = 30

7 x 5 = 35

8 x 5 = 40

9 x 5 = 45

10 x 5 = 50

1 x 5 = 5

10 x 5 = 50

19 x 5 = 95

28 x 5 = 140

37 x 5 = 185

46 x 5 = 230

55 x 5 = 275

64 x 5 = 320

73 x 5 = 365

82 x 5 = 410

91 x 5 = 455

for idx in range(100,-1,-5):

print(idx)

100

95

90

85

80

75

70

65

60

55

50

45

40

35

30

25

20

15

10

5

0

s99 = *"ABCABC"*

s100 = s99.replace(*"A"*, *"XXX"*)

print(s100)

XXXBCXXXBC

*'''*

*Ask user to enter 3 different integers*

*Sum and print the numbers following the rules below:*

*if all different, add them all*

*if any 2 are the same, add the other alone*

*if all same, the sum is 0*

*'''*

#Use eval to read 3 numbers in one statement

num1, num2, num3 = eval(input(*"Enter 3 different numbers"*))

#Test before doing more

#Remember to use, when entering numbers

print(num1, num2 , num3)

#Next, use if..elif.. to figure out what to add

#There are many ways to write, this is just one example

if num1 == num2 and num2 == num3:

print(0)

elif num1 != num2 and num2 != num3 and num3 != num1:

print(num1 + num2 + num3)

elif num1 == num2: #Don't need check num3

print(num3)

elif num2 == num3:

print(num1)

else:

print(num2)

# eval() is able to break the input into 3 numbers, and assign them

# to num1, num2, and num3 at the same time.

# If you use int() , you have to do 3 input statements, and convert

# the input to integer one by one.

# be careful with the syntax: the : at the end and the identation

Enter 3 different numbers 5,5,5

5 5 5

0

*'''*

*Here is the question*

*Ask user to enter 3 integer scores (0 ~ 100)*

*The program will print the result based on the following*

*all scores >= 50 --> Pass*

*1 score (anyone) < 50 --> Retest*

*2 or more scores <50 --> Fail*

*'''*

#Use eval or int to get 3 numbers, whichever u like

score1, score2, score3 = eval(input(*"Enter 3 scores"*))

#Use if...

if score1 >= 50 and score2 >= 50 and score3 >= 50:

print (*"Pass"*)

elif (score1 >= 50 and score2 >= 50) or\

(score2 >= 50 and score3 >= 50) or\

(score1 >=50 and score3 >=50):

print (*"Retest"*)

else:

print(*"Fail"*)

# line17: I need to check 2 scores in pair instead of just 1 score

# e.g if score1 < 50 or score2 < 50 or score3 < 50

# Imagine both score 1 and 2 are < 50, it won't give the right answer

# The key thing to note is line 17, the logic to check only 1 score < 50

# line 17 is very long, you can use \ to break into multiple lines

# to make it easy to read

# This approach is fine if the number of scores are not too many

# If the qn is changed to: 4 score or 5 scores, if..elif.. will become very lengthly

# Next excercise will use a different approach

Enter 3 scores 10, 56, 70

Retest

*'''*

*Ask user to enter 4 test scores, and print the result as follows*

*all scores >= 50 --> Pass*

*1 score (anyone) < 50 --> Retest*

*2 or more scores < 50 --> Fail*

*'''*

score1, score2, score3, score4 = eval(input(*"Enter 4 scores"*))

failCount = 0

#We are not going to use the if .... because the combinations to

#check will be too many, and if is easy to make mistake.

# Instead, we check each score individually, and count how many< 50

# Use 4 separate if statements ....

if score1 < 50:

failCount = failCount + 1 # Update this count for each score < 50

if score2 < 50:

failCount = failCount + 1

if score3 < 50:

failCount = failCount + 1

if score4 < 50:

failCount = failCount + 1

#Determine result based on the checks done above

if failCount == 0:

print (*"Pass"*)

elif failCount == 1:

print(*"Retest"*)

elif failCount ==2:

print(*"Supp paper"*)

else:

print(*"Fail"*)

# Different ways of solving the problem.

# This is easier and more flexible when the number of stores are too many.

# Imagine the question changed to:

# 1 score < 50 --> retest

# 2 scores < 50 --> supp paper

# 3 or more scores < 50 --> fail

# We don't need to change the if statements, just modify the last if statement.

Enter 4 scores 10,20,40,60

Fail

#We could have use 2 input statements but the question require us to use

# string, split, ....

inputValue = input(*"Enter plan and age"*) #This input ha 2 parts:

plan, age = inputValue.split() #Divide the 2 values and save to variables

ageValue = int(age) #Now it is changed to integer

#Again, you may have done it differently, as long as you get it to work, it's ok

#Determine the rate based on the plan selected

if plan == *"C"* or plan == *"c"*: #Must handle both upper and lower case

monthlyFee = 15

else:

monthlyFee = 25

# Determine discount based on age

if ageValue <= 16:

discount = 0.25 #This is 25%

else:

discount = 0

#Calculate the final feee

finalFee = monthlyFee - (monthlyFee \* discount)

print (finalFee)

Enter plan and age C 29

15

*'''*

*Lab2 Question 7*

*I will modify the question slight: we will not use file, list, etc.*

*Will do that next week, Right now, focus on if.. else*

*Later on, will add a loop to that*

*Think about the part on checking if 3 numbers form a triangle*

*Ask the user to enter 3 numbers, and check if the 3 numbers*

*form a triangle*

*'''*

n = int(input(*"How many times to run?"*))

# Set up a loop to run n times

invTri = 0 #Count how many invalid triangles

equTri = 0 #Count equilateral triangle

isoTri = 0 #Count isoceles triangle

scaTri = 0 #Count scalene triangle

for index in range(0, n):

side1, side2, side3 = eval(input(*"Enter 3 sides:"*))

#First check: can the 3 sides form a triangle

if side1 + side2 <= side3 or side2 + side3 <= side1 or side1 + side3 <= side2:

print(*"Invalid triangle"*)

invTri = invTri + 1

elif side1 == side2 == side3: #Alternatively: side1 == side2 == side3

print(*"Equilateral"*)

equTri = equTri + 1

elif side1 != side2 and side2 != side3 and side3 != side1: # Yes, must check side 3 and side 1

print (*"Scalene"*)

scaTri = scaTri + 1

else:

print(*"Isoceles"*)

isoTri = isoTri + 1

#After the loop, print the counts

print(*"Invalid triangles:"*, invTri)

print(*"Equilateral triangles:"*, equTri)

print(*"Scalene triangles:"*, scaTri)

print(*"Isoceles triangles:"*, isoTri)

# Notice i check for different sides on line 15 so that i don't

# need to check ever 2 side after that?

# To summarise the logic in English:4

# 1. If all equal --> equilateral

# 2. else if all different --> Scalene

# 3. else: since they are the same and yet not all different, must

# be isosceles

# Last part, we add a loop to this.

# We want to be able to enter multiple sets of values.

# We need a for loop

#Introduce the last thing for this session: counting

#I want to count the number of triangles.

How many times to run? 3

Enter 3 sides: 4,4,4

Equilateral

Enter 3 sides: 3,3,3

Equilateral

Enter 3 sides: 5,6,7

Scalene

Invalid triangles: 0

Equilateral triangles: 2

Scalene triangles: 1

Isoceles triangles: 0