#Albert George

#12

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#Modified Fraction class to raise an error if Numerator and denominator are not Integers

>>> class Fraction:

def \_\_init\_\_(self,top,bottom):

IntTop=int(top)

IntBottom=int(bottom)

if top==IntTop:

self.num=top

else:

print("Numerator is not an integer")

if bottom==IntBottom:

self.den=bottom

else:

print("Denominator is not an integer")

def \_\_str\_\_(self):

return str(self.num)+"/"+str(self.den)

>>> Fraction(2.1,3)

Numerator is not an integer

<\_\_main\_\_.Fraction object at 0x106674a20>

>>> Fraction(2,3.1)

Denominator is not an integer

<\_\_main\_\_.Fraction object at 0x1012c9828>

>>>

>>>

>>>#13

>>>#Input a list of numbers and convert from decimal to binary

>>> from pythonds import Stack

>>> def GetNumbers():

L=[]

x=eval(input("Enter a number to convert to binary. Enter 0 to finish "))

L.append(x)

while x!=0:

x=eval(input("Enter a number to convert to binary. Enter 0 to finish "))

if x==0:

break

else:

L.append(x)

return L

>>> def ToBinary(Decimal):

remstack=Stack()

while Decimal>0:

rem=Decimal%2

remstack.push(rem)

Decimal=Decimal//2

binString=""

while not remstack.isEmpty():

binString=binString+str(remstack.pop())

return binString

>>> def PopFromList(List):

BinList=[]

for i in range(len(List)-1,0,-1):

convert=List.pop(i)

if convert!=0:

BinStr=ToBinary(convert)

BinList.append(BinStr)

elif convert==0:

continue

return BinList

>>> def main():

List = GetNumbers()

BinaryList=PopFromList(List)

print(BinaryList)

>>> main()

Enter a number to convert to binary. Enter 0 to finish 101

Enter a number to convert to binary. Enter 0 to finish 10

Enter a number to convert to binary. Enter 0 to finish 38

Enter a number to convert to binary. Enter 0 to finish 69

Enter a number to convert to binary. Enter 0 to finish 47

Enter a number to convert to binary. Enter 0 to finish 21

Enter a number to convert to binary. Enter 0 to finish 83

Enter a number to convert to binary. Enter 0 to finish 71

Enter a number to convert to binary. Enter 0 to finish 24

Enter a number to convert to binary. Enter 0 to finish 0

['11000', '1000111', '1010011', '10101', '101111', '1000101', '100110', '1010', ‘1100101’]

>>>