import simplegui

import random

import math

lower = 0

upper = 100

guess = 0

lower\_not = 0

upper\_not = 100

guess\_not = 0

secret\_number = -1

remaining\_number = 0

guess\_lower = lower

guess\_upper = upper

#設定猜數字的下界

def lower\_bound\_input(lower\_bound\_input):

global lower, lower\_not

try:

int(lower\_bound\_input) - 0

except:

lower\_not = lower\_bound\_input

else:

if int(lower\_bound\_input) < 0 :

lower\_not = lower\_bound\_input

else:

lower = int(lower\_bound\_input)

lower\_not = int(lower\_bound\_input)

star\_the\_game()

#設定猜數字的上界

def upper\_bound\_input(upper\_bound\_input):

global upper, upper\_not

try:

int(upper\_bound\_input) - 0

except:

upper\_not = upper\_bound\_input

else:

if int(upper\_bound\_input) < 0 :

upper\_not = upper\_bound\_input

elif int(upper\_bound\_input) <= int(lower):

upper\_not = upper\_bound\_input

else:

upper = int(upper\_bound\_input)

upper\_not = int(upper\_bound\_input)

star\_the\_game()

#玩家輸入猜測數字

def guess\_input(guess\_input):

global guess, guess\_not , remaining\_number

try:

int(guess\_input) - 0

except:

guess\_not = guess\_input

else:

if int(guess\_input) < 0:

guess\_not = guess\_input

elif int(guess\_input) > int(upper) or int(guess\_input) < int(lower):

guess\_not = guess\_input

else:

guess = int(guess\_input)

guess\_not = int(guess\_input)

remaining\_number = remaining\_number -1

guess\_path()

#警告語：排除輸入錯誤值，包含非數字，非正整數，而且上界一定要大於下界，排出猜測的數字超出上下界

def warning():

global lower\_not, upper\_not, guess\_not

try:

int(lower\_not) - 0 or int(upper\_not) - 0 or int(guess\_not) - 0

except:

return "Your lower and upper bound and guess number must be an positive integer."

try:

int(lower\_not) < 0 or int(upper\_not) < 0 or int(guess\_not) < 0

except ValueError:

return "Your lower and upper bound and guess number must be an positive integer."

else:

if int(lower\_not) < 0 or int(upper\_not) < 0 or int(guess\_not) < 0:

return "Your lower and upper bound and guess number must be an positive integer."

elif int(upper\_not) <= int(lower\_not):

return "Your upper bound must greater than lower bound."

elif (int(guess\_not) > int(upper\_not) and int(guess\_not) !=0) or (int(guess\_not) < int(lower\_not) and int(guess\_not) !=0):

return "Out of guesses."

else:

return ""

#遊戲開始前，要按下star，其中依照二分法，計算了猜測次數的限制，並設定了要猜的數字

def star\_the\_game():

global lower,upper,secret\_number,remaining\_number

global guess\_upper, guess\_lower

try:

int(lower) - 0 or int(upper) - 0 or int(guess) - 0

except:

return warning()

else:

guess = 0

guess\_lower = lower

guess\_upper = upper

remaining\_number = int(math.ceil(math.log(float(upper)-float(lower)+1,10)/math.log(2,10)))

secret\_number = random.randrange(float(lower),float(upper))

#提醒玩家猜的區間

def guess\_path():

global guess\_upper, guess\_lower, guess, upper, lower, secret\_number

if guess < secret\_number:

guess\_lower = guess

elif guess > secret\_number:

guess\_upper = guess

def draw(canvas):

global guess, lower, upper, guess\_lower, guess\_upper

global secret\_number,remaining\_number

global guess\_upper, guess\_lower

#螢幕上的字幕

canvas.draw\_text("Your can change lower bound and upper bound. Press 'Start' to start.",[5,30],16,"white")

canvas.draw\_text("Your lower bound is " ,[5,60],20,"white")

canvas.draw\_text("Your upper bound is " ,[250,60],20,"white")

canvas.draw\_text(str(lower),[190,60],20,"white")

canvas.draw\_text(str(upper),[430,60],20,"white")

if guess != 0:

canvas.draw\_text("lowest number is " ,[5,90],20,"white")

canvas.draw\_text("highest number is " ,[250,90],20,"white")

canvas.draw\_text(str(guess\_lower),[190,90],20,"white")

canvas.draw\_text(str(guess\_upper),[430,90],20,"white")

canvas.draw\_text("Guess number was " ,[5,120],20,"white")

#canvas.draw\_text(guess\_hint(guess) ,[200,120],20,"white")

#遊戲主體

#猜測次數超過前面算出的限制次數，則失敗，遊戲立即重來

if secret\_number < 0 or guess == 0:

canvas.draw\_text("",[200,120],20,"white")

elif remaining\_number == 0 and int(guess) != secret\_number:

canvas.draw\_text("Ran out.It was "+str(secret\_number)+".Press 'Start' to start new game.",[200,120],15,"white")

else:

if int(guess) == secret\_number:

canvas.draw\_text("Correct!Press 'Start' to start new game.",[200,120],10,"white")

elif int(guess) < secret\_number:

canvas.draw\_text("Higher!",[200,120],20,"white")

else:

canvas.draw\_text("Lower!",[200,120],20,"white")

canvas.draw\_text("Remaining number was " ,[5,150],20,"white")

if remaining\_number != 0:

canvas.draw\_text(str(remaining\_number) ,[220,150],20,"white")

if guess != 0 :

canvas.draw\_text(str(guess) ,[170,120],20,"white")

canvas.draw\_text(warning(),[5,190],16,"white")

frame = simplegui.create\_frame("Guess the Number!", 500, 200)

frame.set\_draw\_handler(draw)

frame.add\_input("lower bound", lower\_bound\_input, 100)

frame.add\_input("upper bound", upper\_bound\_input, 100)

frame.add\_button("Start", star\_the\_game, 100)

frame.add\_label(' ')

frame.add\_input("Enter a guess", guess\_input, 100)

frame.start()

star\_the\_game()