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## Exercise: guess my number

Finger Exercises due Aug 5, 2020 20:30 -03 *Completo*

### Exercise: guess my number

10.0/10.0 points (graded)

**ESTIMATED TIME TO COMPLETE: 15 minutes**

In this problem, you'll create a program that guesses a secret number!

The program works as follows: you (the user) thinks of an integer between 0 (inclusive) and 100 (not inclusive). The computer makes guesses, and you give it input - is its guess too high or too low? Using bisection search, the computer will guess the user's secret number!

Here is a transcript of an example session:



```
Please think of a number between 0 and 100!
Is your secret number 50?
Enter 'h' to indicate the guess is too high. Enter 'l' to indicate the guess is
too low. Enter 'c' to indicate I guessed correctly. l
Is your secret number 75?
Enter 'h' to indicate the guess is too high. Enter 'l' to indicate the guess is
too low. Enter 'c' to indicate I guessed correctly. l
Is your secret number 87?
Enter 'h' to indicate the guess is too high. Enter 'l' to indicate the guess is
too low. Enter 'c' to indicate I guessed correctly. h
Is your secret number 81?
Enter 'h' to indicate the guess is too high. Enter 'l' to indicate the guess is
too low. Enter 'c' to indicate I guessed correctly. l
Is your secret number 84?
Enter 'h' to indicate the guess is too high. Enter 'l' to indicate the guess is
too low. Enter 'c' to indicate I guessed correctly. h
Is your secret number 82?
Enter 'h' to indicate the guess is too high. Enter 'l' to indicate the guess is
too low. Enter 'c' to indicate I guessed correctly. l
Is your secret number 83?
Enter 'h' to indicate the guess is too high. Enter 'l' to indicate the guess is
too low. Enter 'c' to indicate I guessed correctly. c
Game over. Your secret number was: 83
```

## Important

### Hint: Endpoints

**\*\*** Your program should use bisection search. So think carefully what that means. What will the first guess always be? How should you calculate subsequent guesses?

**\*\*** Your initial endpoints should be 0 and 100. Do not optimize your subsequent endpoints by making them be the halfway point plus or minus 1. Rather, just make them be the halfway point.

### Python Trick: Printing on the same line

Try the following in your console:



```
# Notice how if we have two print statements
print("Hi")
print("there")

# The output will have each string on a separate line:
Hi
there

# Now try adding the following:
print("Hi",end='')
print("there")
print("Hi",end='*')
print("there")

# The output will place the subsequent string on the same line
# and will connect the two prints with the character given by end
Hithere
Hi*there
```

[Click to See Test Cases](#)

Test Cases to Test Your Code With. Be sure to test these on your own machine - and that you get the same output! - before running your code on this webpage!

Test case 1. Secret guess = 42

```
Please think of a number between 0 and 100!
Is your secret number 50?
Enter 'h' to indicate the guess is too high. Enter 'l' to indicate the guess is
too low. Enter 'c' to indicate I guessed correctly. h
Is your secret number 25?
Enter 'h' to indicate the guess is too high. Enter 'l' to indicate the guess is
too low. Enter 'c' to indicate I guessed correctly. l
Is your secret number 37?
Enter 'h' to indicate the guess is too high. Enter 'l' to indicate the guess is
too low. Enter 'c' to indicate I guessed correctly. l
Is your secret number 43?
Enter 'h' to indicate the guess is too high. Enter 'l' to indicate the guess is
too low. Enter 'c' to indicate I guessed correctly. h
Is your secret number 40?
Enter 'h' to indicate the guess is too high. Enter 'l' to indicate the guess is
too low. Enter 'c' to indicate I guessed correctly. l
Is your secret number 41?
Enter 'h' to indicate the guess is too high. Enter 'l' to indicate the guess is
too low. Enter 'c' to indicate I guessed correctly. l
Is your secret number 42?
Enter 'h' to indicate the guess is too high. Enter 'l' to indicate the guess is
too low. Enter 'c' to indicate I guessed correctly. c
Game over. Your secret number was: 42
```



## Test case 2. Secret guess = 91

```

Please think of a number between 0 and 100!
Is your secret number 50?
Enter 'h' to indicate the guess is too high. Enter 'l' to indicate the guess is
too low. Enter 'c' to indicate I guessed correctly. l
Is your secret number 75?
Enter 'h' to indicate the guess is too high. Enter 'l' to indicate the guess is
too low. Enter 'c' to indicate I guessed correctly. l
Is your secret number 87?
Enter 'h' to indicate the guess is too high. Enter 'l' to indicate the guess is
too low. Enter 'c' to indicate I guessed correctly. l
Is your secret number 93?
Enter 'h' to indicate the guess is too high. Enter 'l' to indicate the guess is
too low. Enter 'c' to indicate I guessed correctly. h
Is your secret number 90?
Enter 'h' to indicate the guess is too high. Enter 'l' to indicate the guess is
too low. Enter 'c' to indicate I guessed correctly. l
Is your secret number 91?
Enter 'h' to indicate the guess is too high. Enter 'l' to indicate the guess is
too low. Enter 'c' to indicate I guessed correctly. y
Sorry, I did not understand your input.
Is your secret number 91?
Enter 'h' to indicate the guess is too high. Enter 'l' to indicate the guess is
too low. Enter 'c' to indicate I guessed correctly. c
Game over. Your secret number was: 91

```

**Note:** your program should use `input` to obtain the user's input! Be sure to handle the case when the user's input is not one of `h`, `l`, or `c`.

When the user enters something invalid, you should print out a message to the user explaining you did not understand their input. Then, you should re-ask the question, and prompt again for input. For example:

```

Is your secret number 91?
Enter 'h' to indicate the guess is too high. Enter 'l' to indicate the guess is
too low. Enter 'c' to indicate I guessed correctly. y
Sorry, I did not understand your input.
Is your secret number 91?
Enter 'h' to indicate the guess is too high. Enter 'l' to indicate the guess is
too low. Enter 'c' to indicate I guessed correctly. c

```

```

1 # Paste your code into this box
2 print('Please think of a number between 0 and 100!')
3 max = 100
4 min = 0
5 resp = ''
6 while resp != 'c':
7     palpitate = int((max+min)/2)

```

```

8     print('Is your secret number', palpite, '?')
9     resp = input("Enter 'h' to indicate the guess is too high. Enter 'l' to indic
10    while resp not in ['h','l','c']:
11        print('Sorry, I did not understand your input.')
12        print('Is your secret number', palpite, '?')
13        resp = input("Enter 'h' to indicate the guess is too high. Enter 'l' to i
14    if resp == 'c': # Acertou!
15        print('Game over. Your secret number was: ' + str(palpite))
16

```

Press ESC then TAB or click outside of the code editor to exit

Correta

```

print("Please think of a number between 0 and 100!")

# Upper bound is 100 (but will never reach) and the lowest is 0.
hi = 100
lo = 0
guessed = False

# Loop until we guess it correctly
while not guessed:
    # Bisection search: guess the midpoint between our current high and low guesses
    guess = (hi + lo)//2
    print("Is your secret number " + str(guess)+ "?")
    user_inp = input("Enter 'h' to indicate the guess is too high. Enter 'l' to indicate the

    if user_inp == 'c':
        # We got it right!
        guessed = True
    elif user_inp == 'h':
        # Guess was too high. So make the current guess the highest possible guess.
        hi = guess
    elif user_inp == 'l':
        # Guess was too low. So make the current guess the lowest possible guess.
        lo = guess
    else:
        print("Sorry, I did not understand your input.")

print('Game over. Your secret number was: ' + str(guess))

```

## Test results

[Hide output](#)

CORRECT



Secret number is 83

**Output:**

```
Please think of a number between 0 and 100!
Is your secret number 50 ?
Enter 'h' to indicate the guess is too high. Enter 'l' to
indicate the guess is too low. Enter 'c' to indicate I guessed
correctly.l
Is your secret number 75 ?
Enter 'h' to indicate the guess is too high. Enter 'l' to
indicate the guess is too low. Enter 'c' to indicate I guessed
correctly.l
Is your secret number 87 ?
Enter 'h' to indicate the guess is too high. Enter 'l' to
indicate the guess is too low. Enter 'c' to indicate I guessed
correctly.h
Is your secret number 81 ?
Enter 'h' to indicate the guess is too high. Enter 'l' to
indicate the guess is too low. Enter 'c' to indicate I guessed
correctly.l
Is your secret number 84 ?
Enter 'h' to indicate the guess is too high. Enter 'l' to
indicate the guess is too low. Enter 'c' to indicate I guessed
correctly.h
Is your secret number 82 ?
Enter 'h' to indicate the guess is too high. Enter 'l' to
indicate the guess is too low. Enter 'c' to indicate I guessed
correctly.l
Is your secret number 83 ?
Enter 'h' to indicate the guess is too high. Enter 'l' to
indicate the guess is too low. Enter 'c' to indicate I guessed
correctly.c
Game over. Your secret number was: 83
```

Secret number is 42

**Output:**



```
Please think of a number between 0 and 100!  
Is your secret number 50 ?  
Enter 'h' to indicate the guess is too high. Enter 'l' to  
indicate the guess is too low. Enter 'c' to indicate I guessed  
correctly.h  
Is your secret number 25 ?  
Enter 'h' to indicate the guess is too high. Enter 'l' to  
indicate the guess is too low. Enter 'c' to indicate I guessed  
correctly.l  
Is your secret number 37 ?  
Enter 'h' to indicate the guess is too high. Enter 'l' to  
indicate the guess is too low. Enter 'c' to indicate I guessed  
correctly.l  
Is your secret number 43 ?  
Enter 'h' to indicate the guess is too high. Enter 'l' to  
indicate the guess is too low. Enter 'c' to indicate I guessed  
correctly.h  
Is your secret number 40 ?  
Enter 'h' to indicate the guess is too high. Enter 'l' to  
indicate the guess is too low. Enter 'c' to indicate I guessed  
correctly.l  
Is your secret number 41 ?  
Enter 'h' to indicate the guess is too high. Enter 'l' to  
indicate the guess is too low. Enter 'c' to indicate I guessed  
correctly.l  
Is your secret number 42 ?  
Enter 'h' to indicate the guess is too high. Enter 'l' to  
indicate the guess is too low. Enter 'c' to indicate I guessed  
correctly.c  
Game over. Your secret number was: 42
```

Secret number is 91

**Output:**



```
Please think of a number between 0 and 100!  
Is your secret number 50 ?  
Enter 'h' to indicate the guess is too high. Enter 'l' to  
indicate the guess is too low. Enter 'c' to indicate I guessed  
correctly.l  
Is your secret number 75 ?  
Enter 'h' to indicate the guess is too high. Enter 'l' to  
indicate the guess is too low. Enter 'c' to indicate I guessed  
correctly.l  
Is your secret number 87 ?  
Enter 'h' to indicate the guess is too high. Enter 'l' to  
indicate the guess is too low. Enter 'c' to indicate I guessed  
correctly.l  
Is your secret number 93 ?  
Enter 'h' to indicate the guess is too high. Enter 'l' to  
indicate the guess is too low. Enter 'c' to indicate I guessed  
correctly.h  
Is your secret number 90 ?  
Enter 'h' to indicate the guess is too high. Enter 'l' to  
indicate the guess is too low. Enter 'c' to indicate I guessed  
correctly.l  
Is your secret number 91 ?  
Enter 'h' to indicate the guess is too high. Enter 'l' to  
indicate the guess is too low. Enter 'c' to indicate I guessed  
correctly.y  
Sorry, I did not understand your input.  
Is your secret number 91 ?  
Enter 'h' to indicate the guess is too high. Enter 'l' to  
indicate the guess is too low. Enter 'c' to indicate I guessed  
correctly.c  
Game over. Your secret number was: 91
```

Secret number is 8

**Output:**





```
Please think of a number between 0 and 100!  
Is your secret number 50 ?  
Enter 'h' to indicate the guess is too high. Enter 'l' to  
indicate the guess is too low. Enter 'c' to indicate I guessed  
correctly.h  
Is your secret number 25 ?  
Enter 'h' to indicate the guess is too high. Enter 'l' to  
indicate the guess is too low. Enter 'c' to indicate I guessed  
correctly.h  
Is your secret number 12 ?  
Enter 'h' to indicate the guess is too high. Enter 'l' to  
indicate the guess is too low. Enter 'c' to indicate I guessed  
correctly.h  
Is your secret number 6 ?  
Enter 'h' to indicate the guess is too high. Enter 'l' to  
indicate the guess is too low. Enter 'c' to indicate I guessed  
correctly.l  
Is your secret number 9 ?  
Enter 'h' to indicate the guess is too high. Enter 'l' to  
indicate the guess is too low. Enter 'c' to indicate I guessed  
correctly.h  
Is your secret number 7 ?  
Enter 'h' to indicate the guess is too high. Enter 'l' to  
indicate the guess is too low. Enter 'c' to indicate I guessed  
correctly.l  
Is your secret number 8 ?  
Enter 'h' to indicate the guess is too high. Enter 'l' to  
indicate the guess is too low. Enter 'c' to indicate I guessed  
correctly.c  
Game over. Your secret number was: 8
```

Secret number is 68

**Output:**



```
Please think of a number between 0 and 100!
Is your secret number 50 ?
Enter 'h' to indicate the guess is too high. Enter 'l' to
indicate the guess is too low. Enter 'c' to indicate I guessed
correctly.l
Is your secret number 75 ?
Enter 'h' to indicate the guess is too high. Enter 'l' to
indicate the guess is too low. Enter 'c' to indicate I guessed
correctly.h
Is your secret number 62 ?
Enter 'h' to indicate the guess is too high. Enter 'l' to
indicate the guess is too low. Enter 'c' to indicate I guessed
correctly.l
Is your secret number 68 ?
Enter 'h' to indicate the guess is too high. Enter 'l' to
indicate the guess is too low. Enter 'c' to indicate I guessed
correctly.right
Sorry, I did not understand your input.
Is your secret number 68 ?
Enter 'h' to indicate the guess is too high. Enter 'l' to
indicate the guess is too low. Enter 'c' to indicate I guessed
correctly.correct
Sorry, I did not understand your input.
Is your secret number 68 ?
Enter 'h' to indicate the guess is too high. Enter 'l' to
indicate the guess is too low. Enter 'c' to indicate I guessed
correctly.yes
Sorry, I did not understand your input.
Is your secret number 68 ?
Enter 'h' to indicate the guess is too high. Enter 'l' to
indicate the guess is too low. Enter 'c' to indicate I guessed
correctly.okay
Sorry, I did not understand your input.
Is your secret number 68 ?
Enter 'h' to indicate the guess is too high. Enter 'l' to
indicate the guess is too low. Enter 'c' to indicate I guessed
correctly.yes that is my guess
Sorry, I did not understand your input.
Is your secret number 68 ?
Enter 'h' to indicate the guess is too high. Enter 'l' to
indicate the guess is too low. Enter 'c' to indicate I guessed
correctly.c
Game over. Your secret number was: 68
```

[Hide output](#)

If you believe you have correct code but it is marked incorrect after clicking "Check"...



After you submit your code, you can see every test case the graders runs on your code. They compare what your code outputs with what our answer code is supposed to output. Click the small link titled "See Full Output" below the Test Results header.

Enviar

**i** Answers are displayed within the problem

## Exercise: guess my number

Ocultar discussão



**Topic:** Lecture 3 / Exercise: guess my number

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- |  |   |    |
|--|---|----|
|  | <u>Entirely Too Much</u><br>So I'm just wondering, if it's taking us a LOT more time to do these problems than what the poste...  | 12 |
|  | <u>Not sure why my code is receiving 6/10? **solved**</u><br>I'm at my wits end trying to figure this one out... In Spyder, my code works perfectly when checke...                  | 7  |
|  | <u>Grader program too fussy</u><br>Isn't there a way to check the solution of a program that doesn't involve the need to output exactl...   | 2  |
|  | <u>best solution?</u><br>my solution worked but i was wondering if its possible to see an optimum solution in terms of th...  | 4  |
|  | <u>(SPOILER) ValueError: invalid literal for int() with base 10: 'I'</u><br>I ran the test cases just fine in my IDE. x = int(input("Please think of a number between 0 and 100!... | 5  |
|  | <u>Got to love automatic marking</u><br>**Have no idea why I am not getting this right** print("Please think of a number between 0 and 1...   | 6  |
|  | <u>This is janky</u><br>My code is: print("Please think of a number between 0 and 100!") high=100 low=0 while True: gue...  | 2  |
|  | <u>In Anaconda when I run the correct answer it gives me a wrong output</u><br>No matter what, even if I use the correct answer code, it always thinks of everything as 'h'         | 1  |
|  | <u>SPOILER: What's wrong with this code?</u><br>Could someone let me know what' wrong with my code? It keeps outputting, 'is your secret numb...                                    | 2  |
|  | <u>Why is this code incorrect? (SPOILER)</u><br>My code works perfectly on my IDE, but I do not know why it is incorrect here. The code is the foll...                              | 5  |
|  | <u>all correct guesses but all marked wrong?</u><br>INCORRECT Hide outputHide output Secret number is 83 Your output: please think of a secret nu...                                | 3  |



-  Different method marked wrong 3  
I suppose they want us to use round. I used int. It is marked incorrect, though the outputs are cor...
-  IDE Question - How do I stop the program 1  
My solution works for the required test cases, but if I don't provide one of the expected answers ...

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