CS50's Introduction to Programming with Python

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Guessing Game

I'm thinking of a number between 1 and 100...

▶ **What is it?**

In a file called `game.py`, implement a program that:

- Prompts the user for a level, n. If the user does not input a positive integer, the program should prompt again.
- Randomly generates an integer between 1 and n, inclusive, using the `random` module.
- Prompts the user to guess that integer. If the guess is not a positive integer, the program should prompt the user again.
  - If the guess is smaller than that integer, the program should output `Too small!` and prompt the user again.
  - If the guess is larger than that integer, the program should output `Too large!` and prompt the user again.
  - If the guess is the same as that integer, the program should output `Just right!` and exit.

▶ **Hints**

Demo

```
$ python game.py
Level: cat
Level: 10
Guess: cat
Guess: dog
Guess: 5
Too large!
Guess: 2
Too small!
Guess: 3
Just right!
$
```

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Before You Begin

Log into cs50.dev (https://cs50.dev/), click on your terminal window, and execute `cd` by itself. You should find that your terminal window's prompt resembles the below:

```
$
```

Next execute

```
mkdir game
```

to make a folder called `game` in your codespace.

Then execute

```
cd game
```

to change directories into that folder. You should now see your terminal prompt as `game/ $`. You can now execute

```
code game.py
```

to make a file called `game.py` where you'll write your program.

How to Test

Here's how to test your code manually:

- Run your program with `python game.py`. Type `cat` at a prompt that says `Level:` and press Enter. Your program should reprompt you:

```
Level:
```

- Run your program with `python game.py`. Type `-1` at a prompt that says `Level:` and press Enter. Your program should reprompt you:

```
Level:
```

- Run your program with `python game.py`. Type `10` at a prompt that says `Level:` and press Enter. Your program should now be ready to accept guesses:

```
Guess:
```

- Run your program with `python game.py`. Type `10` at a prompt that says `Level:` and press Enter. Then type `cat`. Your program should reprompt you:

```
Guess:
```

- Run your program with `python game.py`. Type `10` at a prompt that says `Level:` and press Enter. Then type `-1`. Your program should reprompt you:

```
Guess:
```

- Run your program with `python game.py`. Type `1` at a prompt that says `Level:` and press Enter. Then type `1`. Your program should output:

```
Just right!
```

  There's only one possible number the answer could be!

- Run your program with `python game.py`. Type `10` at a prompt that says `Level:` and press Enter. Then type `100`. Your program should output:

```
Too large!
```

  Looks like you're guessing outside the range you specified.

- Run your program with `python game.py`. Type `10000` at a prompt that says `Level:` and press Enter. Then type `1`. Your program should output:

```
Too small!
```

  Most likely, anyways: you might get lucky and see `Just right!`. But it would certainly be odd for you to see `Just right!` every time. And certainly you shouldn't see `Too large!`.

You can execute the below to check your code using `check50`, a program that CS50 will use to test your code when you submit. But be sure to test it yourself as well!

```
check50 cs50/problems/2022/python/game
```

Green smilies mean your program has passed a test! Red frownies will indicate your program output something unexpected. Visit the URL that `check50` outputs to see the input `check50` handed to your program, what output it expected, and what output your program actually gave.

How to Submit

In your terminal, execute the below to submit your work.

```
submit50 cs50/problems/2022/python/game
```