CS161: Introduction to Computer Science
Lab Assignment 6

In today's lab, you're going to implement a guessing game! The computer will pick a number between 1 and 50 (inclusive) and the user gets 10 chances to guess.

There are 2 Java classes for this assignment: `SecretNumber` and `GameController`. The `GameController` class is quite simple and has been implemented for you. *Take a look at the* `GameController` *class so you know what it does.* Your job is to finish implementing the `SecretNumber` class.

Rules of the Game

Inside the `SecretNumber` class, you should pick a random integer between 1 and 50 (inclusive). The user gets 10 chances to guess the number. Each time the user guesses, you should print out a message telling them how close they are to the correct number (see the table below), whether they should guess higher or lower, and the remaining number of guesses.

Distance Away	Message to Print
within 1	"scalding hot"
within 2	"extremely warm"
within 3	"very warm"
within 5	"warm"
within 8	"cold"
within 13	"very cold"
within 20	"extremely cold"
more than 20	"icy freezing miserable cold"

Other than the constructor, there are two methods in the `SecretNumber` class that you need to implement.

- The `oneRound` method is a private method. This method is responsible for implementing one round of the game.

- The `play` method is a public method. This is the method that the user calls. Inside this method, you should give the user 10 chances by calling the `oneRound` method 10 times. Somehow, you'll need to detect if the user has successfully guessed the correct number and end the game.

I recommend implementing the `oneRound` *method before implementing the* `play` *method.*

You and your partner are free to create whatever other private methods you want. The next page shows an example of me playing the guessing game.

```
●●●                BlueJ: Terminal Window - lab6

 ------------------------------------------------
 Welcome to the Guessing Game!
 I picked a number between 1 and 50.
 You have 10 chances to try and guess.
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 Enter a guess: 3
 Your guess is icy freezing miserable cold. Try a little higher.
 You have 9 guesses left!

 Enter a guess: 40
 Your guess is cold. Try a little higher.
 You have 8 guesses left!

 Enter a guess: 50
 Your guess is extremely warm. Try a little lower.
 You have 7 guesses left!

 Enter a guess: 47
 Your guess is scalding hot. Try a little higher.
 You have 6 guesses left!

 Enter a guess: 48

 You win!
```

Extensions

- At the end of the game, print a custom message based on how many guesses it took the user:

Num. Guesses	Message to Print
1	"That was lucky!"
2-4	"That was amazing!"
5-6	"That was okay."
7	"Meh."
8-10	"This is not your game."
didn't guess in 10	"You are the worst I've ever seen."

- Create a second constructor that allows the user to input the upper bound. This will require you to modify the `GameController` class to ask the user for an upper bound and then pass this to `SecretNumber` via the constructor.

Submitting your lab assignment

Your `lab6` folder should have both the `GameController` and the `SecretNumber` class inside. Rename your folder *before* zipping. Submit your zipped folder to Moodle.