Lesson 8: Number Guessing Game

This is a game you play against the computer. The computer chooses a number and the player has to guess what number it is.

Steps to make this game:

- "Think" of a random number between 0 and 10 and store that number (in a variable).
  - Make a program with:
    - A number variable to store the random number.
    - A way to set that variable to a random number between 0 and 10.
      - Run the program now to see the random number.
    - A number variable to store the guess.
      - Now set that number to 5 or some other number.
    - Show both numbers on the screen.
      - Run the program now.
    - Test to see if these two numbers are the same.
    - If the numbers are the same do something:
      - Show a message, change the background, etc.
- Let the player type numbers into the computer and show them on the screen.
  - Make additions so that your program shows what you type onto the screen using:
    - A `String` variable.
    - The `keyReleased` *{codeBlock}*.
    - A way to add the pressed key to the `String` variable.
    - A way to show the `String` variable on the screen.

But we have a String, rather than a number!

How to convert keys into numbers:

To convert keys into numbers, first we need to make sure that **ONLY** the keys between **0** and **9** are allowed. Remember how we checked that only letters `'a'` to `'z'` we used in the caesar cipher?

This is the condition (goes in the `keyReleased` *{codeBlock}*):

```
if (key >= '0' && key <= '9') {
}
```

&& – means **and** in a condition. So the above converts to: "*if the key is greater than '0' **and** less than '9'*".

So now we know we just have numbers - let's convert the pressed key into a number:

```
if (key >= '0' && key <= '9') {
    numberGuess=  Character.getNumericValue(key);
}
```

[the academy_of_code]

- Remember to stop setting the guess number variable at the start of the program!
- And to hide the number that the computer has thought of!

Extra tasks!
- Add a guess counter that counts the number of guesses the player makes.
- Add a message that tells you when your guess is wrong.
- Make a "hint" message that tells the player whether the number is higher or lower than their guess.
- Add a button that you press to see the hint message.
- Add a "Start again" button that:
  - Only appears when the game is over.
  - Makes a new number to guess.
  - sets the guess counter back to 0.
- Add a better "You won" screen, with a background image etc.