Working with Strings in Java

String methods

By the end of this video you will be able to…

- Work with the String class's built-in methods to manipulate Strings

Strings can do lots of things!

https://docs.oracle.com/javase/8/docs/api/java/lang/String.html

length

toCharArray

indexOf

charAt

split

$$Flesch\ score = 206.858 - 1.015\left(\frac{\#\ words}{\#\ sentences}\right) - 84.6\left(\frac{\#\ syllables}{\#\ words}\right)$$

Counting the number of syllables will involve looking at the characters in a String.

```
public static boolean hasLetter(String word, char letter)
{
    for (int i = 0; i < word.length(); i++)
    {
        if (word.charAt(i) == letter)
        {
            return true;
        }
    }
    return false;
}
```

Loop over the indexes of character array in the string

```
public static boolean hasLetter(String word, char letter)
{
    for (int i = 0; i < word.length(); i++)
    {
        if (word.charAt(i) == letter)
        {
            return true;
        }
    }
    return false;
}
```

length() returns the number of characters in the String

```
public static boolean hasLetter(String word, char letter)
{
    for (int i = 0; i < word.length(); i++)
    {
        if (word.charAt(i) == letter)
        {
            return true;
        }
    }
    return false;
}
```

Get each letter and compare it to the char in question

```
public static boolean hasLetter(String word, char letter)
{
    for (int i = 0; i < word.length(); i++)
    {
        if (word.charAt(i) == letter)
        {
            return true;
        }
    }
    return false;
}
```

charAt(i) returns the char at index i in the String

```
public static boolean hasLetter(String word, char letter)
{
    for (int i = 0; i < word.length(); i++)
    {
        if (word.charAt(i) == letter)
        {
            return true;
        }
    }
    return false;
}
```

If no letters match, return false.

```
public static boolean hasLetter(String word, char letter)
{
    for (int i = 0; i < word.length(); i++)
    {
        if (word.charAt(i) == letter)
        {
            return true;
        }
    }
    return false;
}
```

```
public static boolean hasLetter(String word, char letter)
{
    for (char c : word.toCharArray())
    {
        if (c == letter)
        {
            return true;
        }
    }
    return false;
}
```

toCharArray returns the chars in a String, as a char[]

Same method, using a for-each loop

```
public static boolean hasLetter(String word, char letter)
{
    for (char c : word.toCharArray())
    {
        if (c == letter)
        {
            return true;
        }
    }
    return false;
}
```

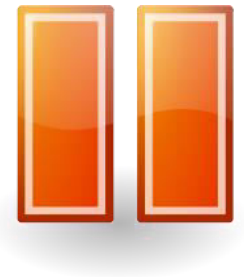
```
public static boolean hasLetter(String word, char letter)
{
    for (int i = 0; i < word.length(); i++)
    {
        if (word.charAt(i).equals(letter))
        {
            return true;
        }
    }
    return false;
}
```

<IVQ Placeholder (NOT PI)>
Is it OK to replace the == with .equals?

```
public static boolean hasLetter(String word, char letter)
{
    for (int i = 0; i < word.length(); i++)
    {
        if (word.charAt(i) == letter)
        {
            return true;
        }
        else {
            return false;
        }
    }
    return false;
}
```

<IVQ Placeholder (NOT PI)>
Does this method work the same way? (SUPPORT VIDEO ON THIS)

```
public static boolean hasLetter(String word, char letter)
{
    for (int i = 0; i < word.length(); i++)
    {
        if (word.charAt(i) == letter)
        {
            return true;
        }
    }
    return false;
}
```



Change this method so that it returns the index where it first finds letter (or -1 if it doesn't find it)?

```
public static boolean hasLetter(String word, char letter)
{
    for (int i = 0; i < word.length(); i++)
    {
        if (word.charAt(i) == letter)
        {
            return true;
        }
    }
    return false;
}
```

i

-1

built-in String method indexOf(String str) does exactly this, but with a String to match.

String method indexOf(String str)

index position 8 in the character array

```
String text = "Can you hear me? Hello, hello?"
int index = text.indexOf("he");  // index is 8
```

String method indexOf(String str)

index position 17 in the character array

```
String text = "Can you hear me? Hello, hello?"
int index = text.indexOf("he");  // index is 8
index = text.indexOf("He");      // index is 17
```

For dealing with case, check out String methods:
equalsIgnoreCase, toLowerCase, toUpperCase

String method indexOf(String str)

```
String text = "Can you hear me? Hello, hello?"
int index = text.indexOf("he");  // index is 8
index = text.indexOf("He");      // index is 17
index = text.indexOf("Help");    // index is -1
```

$$Flesch\ score = 206.858 - 1.015\left(\frac{\#\ words}{\#\ sentences}\right) - 84.6\left(\frac{\#\ syllables}{\#\ words}\right)$$

Counting the number of words will involve splitting apart the String.

String method split(String pattern)

```
String text = "Can you hear me? Hello, hello?"
String[] words = text.split(" ");
```

String method split(String pattern)

What if we add an extra space here

```
String text = "Can you hear me?  Hello, hello?"
String[] words = text.split(" ");
```

String method split(String pattern)

What if we add an extra space here

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String text = "Can you hear me?  Hello, hello?"
String[] words = text.split(" ");
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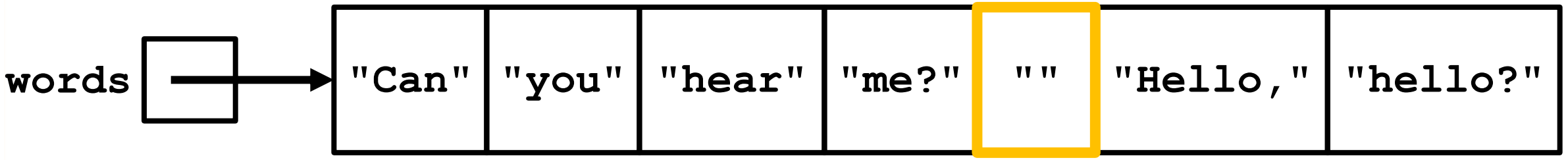

String method split(String pattern)

```
String text = "Can you hear me?  Hello, hello?"
String[] words = text.split(" ");
```

split(String regex)

Splits this string around matches of the given **regular expression**.