File Input

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Before we begin

- Make sure you have Java & Java JDK downloaded on your computer
  - can run **`java -version`** in terminal to check
- Make sure you have IntelliJ downloaded on your computer

- *Suggested:* Watch previous Java tutorials

Files

In order to read from a file you will need to create a file object to read from:

```
import java.io.File;
...
File f = new File("<file name>");
```

File Name “Paths”

absolute path: specifies a drive or a top "/" folder

- ex: C:/Documents/test/hello/examples/helloWorld.txt

relative path: does not specify any top-level folder

- ex: helloWord.txt

Figuring out your working directory

Your working directory is where all your relative paths will be start from

```
public static void printWorkingDirectory() {
     System.out.println(
          "Working Directory = " + System.getProperty("user.dir")
     );
}
```

File methods

Method name	Description
`canRead()`	returns whether file is able to be read
`delete()`	removes file from disk
`exists()`	whether this file exists on disk
`getName()`	returns file's name
`length()`	returns number of bytes in file

Reading from a file

You need a Scanner to read from a file, after you create the Scanner you read from the file the same way you would from System.in (nextInt(), next() etc)

```
File file = new File("example.txt");
Scanner input = new Scanner(file);

Scanner input2 = new Scanner(new File("example2.txt"));
```

Review: Scanner Methods

nextInt() - reads an int from the input and returns it

nextDouble() - reads a double from the input

nextLine() - reads a one line String from the input

next() - reads a one word String from the input

hasNext(), hasNextInt(), hasNextDouble(), hasNextLine() - check to see if the next whatever is available on the Scanner, if true have something else to grab

Look out for...

FileNotFoundExceptions

These show up whenever you try to create a Scanner to read from a file object for a file that does not exist on the computer.

Can happen if the file exists but you use the wrong path

Exercise

File Input Exercise #1

Time Limit: 10 minutes

Write a method that takes in a file and then just prints all of its contents to the screen, just like the cat command line command.

Practice for Later

Write a program that takes in a file as input, reads its contents, and counts how many times each letter in the alphabet and each number (0-9) occurs in the file. These stats should be printed at the end of the program. They can be printed in whatever format you like that makes sense.

The End