File Handling

Agenda:

- File Handling Basics
- Create a File
- Write into a File
- Read From a File
- Delete a file

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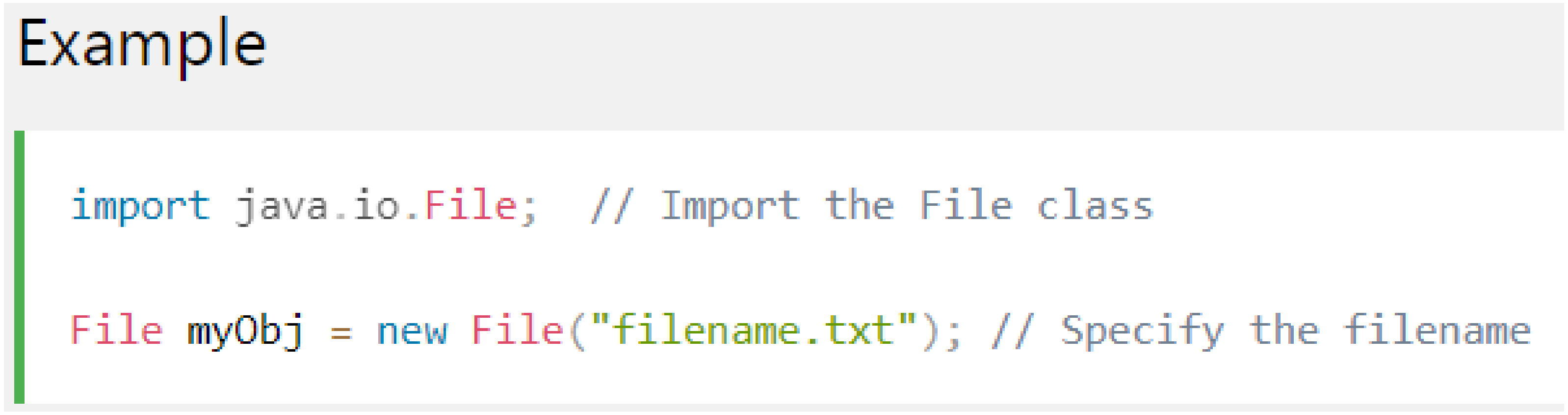
The File class from the java.io package, allows us to work with files.

Java File Handling

- The File class from the java.io package, allows us to work with files.
- To use the File class, create an object of the class, and specify the filename or directory name:



Example

```
import java.io.File;  // Import the File class

File myObj = new File("filename.txt"); // Specify the filename
```

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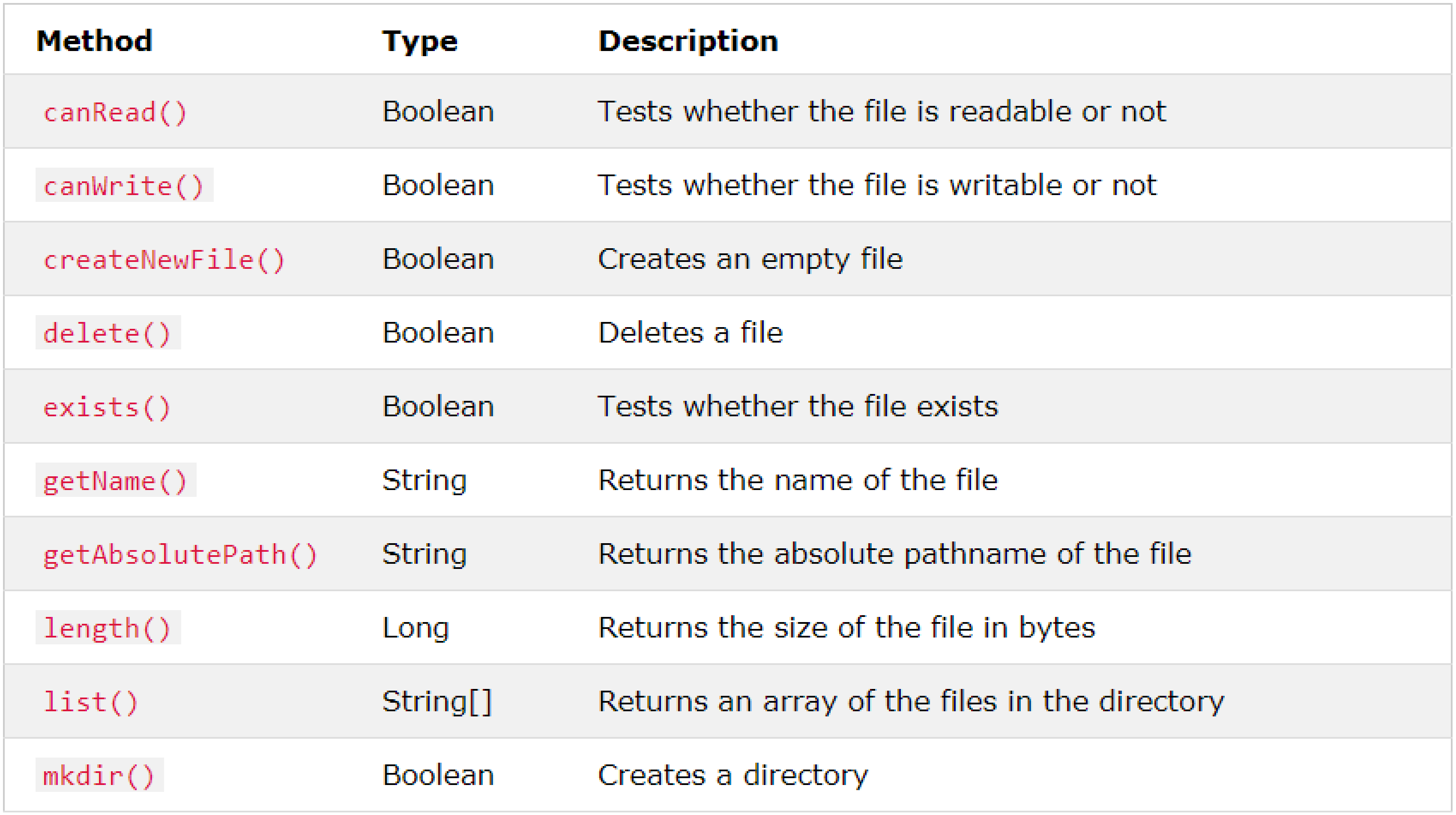
File Methods

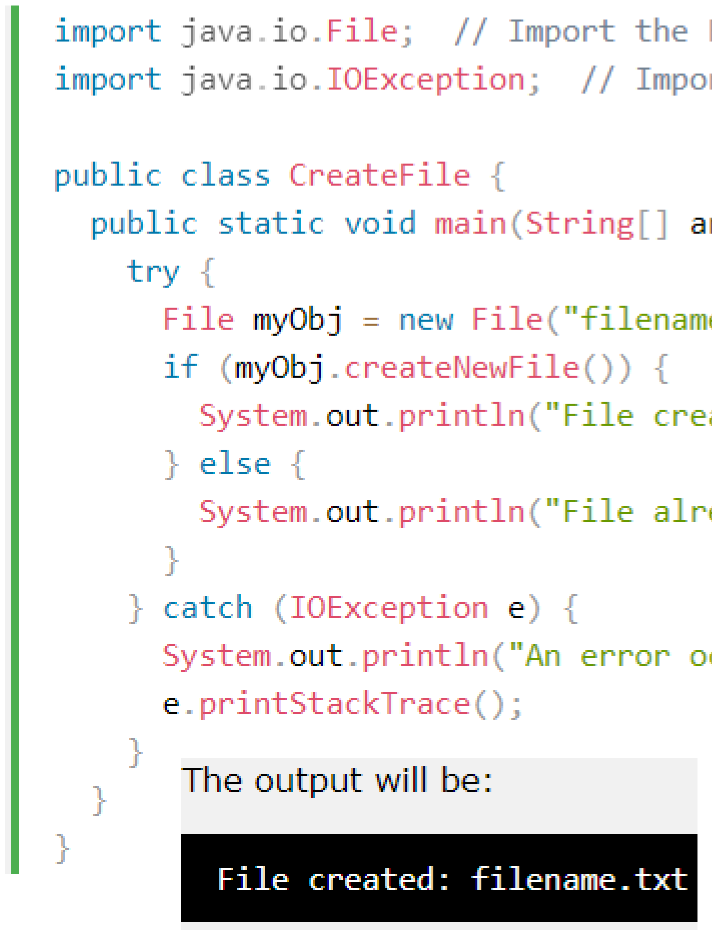
- The File class has many useful methods for creating and getting information about files. For example



Method	Type	Description
`canRead()`	Boolean	Tests whether the file is readable or not
`canWrite()`	Boolean	Tests whether the file is writable or not
`createNewFile()`	Boolean	Creates an empty file
`delete()`	Boolean	Deletes a file
`exists()`	Boolean	Tests whether the file exists
`getName()`	String	Returns the name of the file
`getAbsolutePath()`	String	Returns the absolute pathname of the file
`length()`	Long	Returns the size of the file in bytes
`list()`	String[]	Returns an array of the files in the directory
`mkdir()`	Boolean	Creates a directory

File: Create a File

- To create a file in Java, you can use the createNewFile() method. This method returns a boolean value: true if the file was successfully created, and false if the file already exists.



```java
import java.io.File;  // Import the File class
import java.io.IOException;  // Import the IOException class to handle errors

public class CreateFile {
  public static void main(String[] args) {
    try {
      File myObj = new File("filename.txt");
      if (myObj.createNewFile()) {
        System.out.println("File created: " + myObj.getName());
      } else {
        System.out.println("File already exists.");
      }
    } catch (IOException e) {
      System.out.println("An error occurred.");
      e.printStackTrace();
    }
  }
}
```

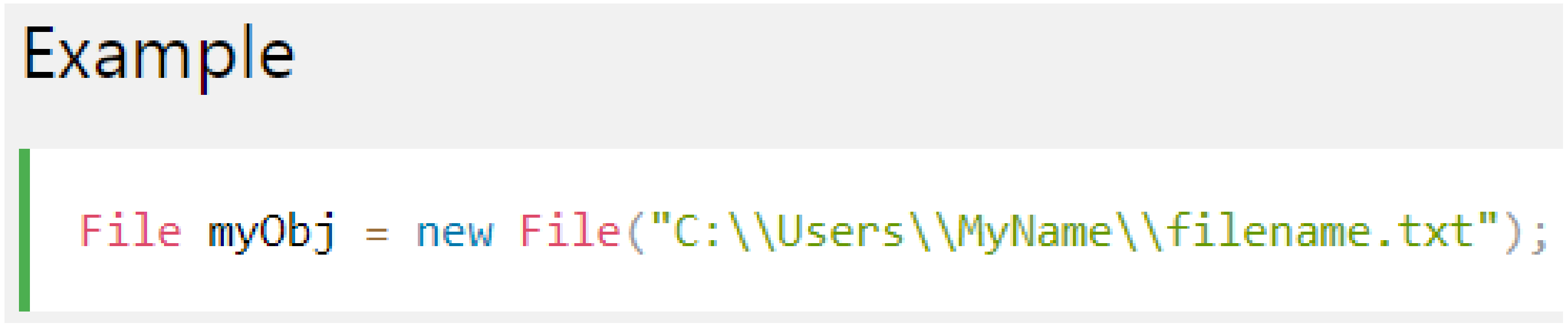
The output will be:

```
File created: filename.txt
```

Note that the method is enclosed in a try...catch block. This is necessary because it throws an IOException if an error occurs (if the file cannot be created for some reason):

Create a file in a specific directory

- To create a file in a specific directory (requires permission), specify the path of the file and use double backslashes to escape the "\" character (for Windows). On Mac and Linux you can just write the path, like: /Users/name/filename.txt



Example

```
File myObj = new File("C:\\Users\\MyName\\filename.txt");
```

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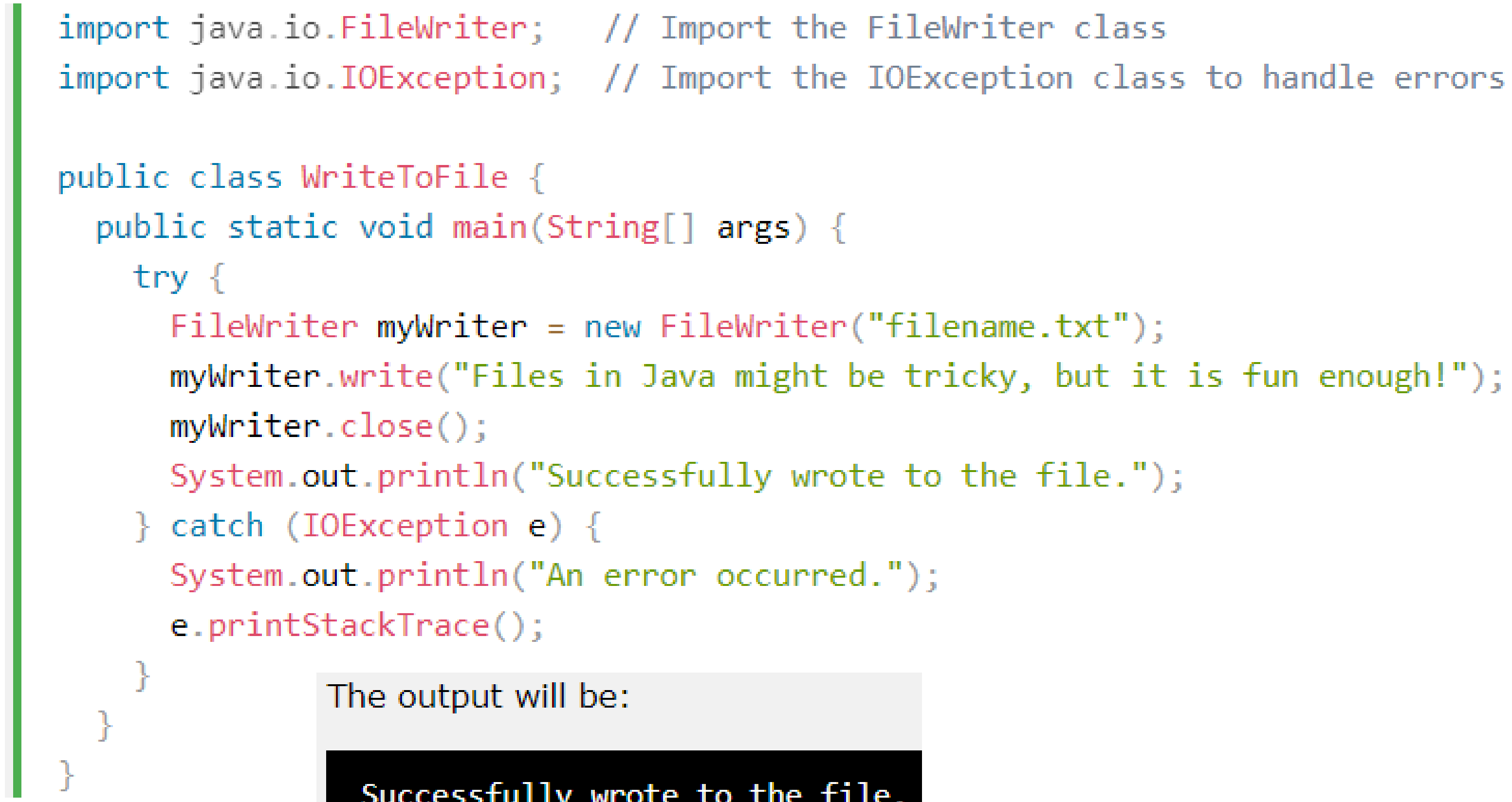
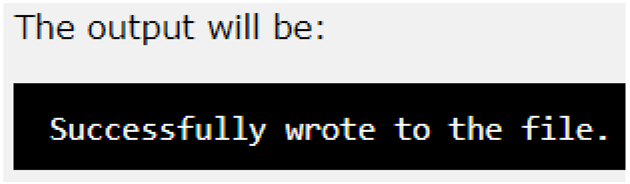
Write To a File

- In the following example, we use the FileWriter class together with its write() method to write some text to the file we created in the example above. Note that when you are done writing to the file, you should close it with the close() method:



```java
import java.io.FileWriter;   // Import the FileWriter class
import java.io.IOException;  // Import the IOException class to handle errors

public class WriteToFile {
  public static void main(String[] args) {
    try {
      FileWriter myWriter = new FileWriter("filename.txt");
      myWriter.write("Files in Java might be tricky, but it is fun enough!");
      myWriter.close();
      System.out.println("Successfully wrote to the file.");
    } catch (IOException e) {
      System.out.println("An error occurred.");
      e.printStackTrace();
    }
  }
}
```

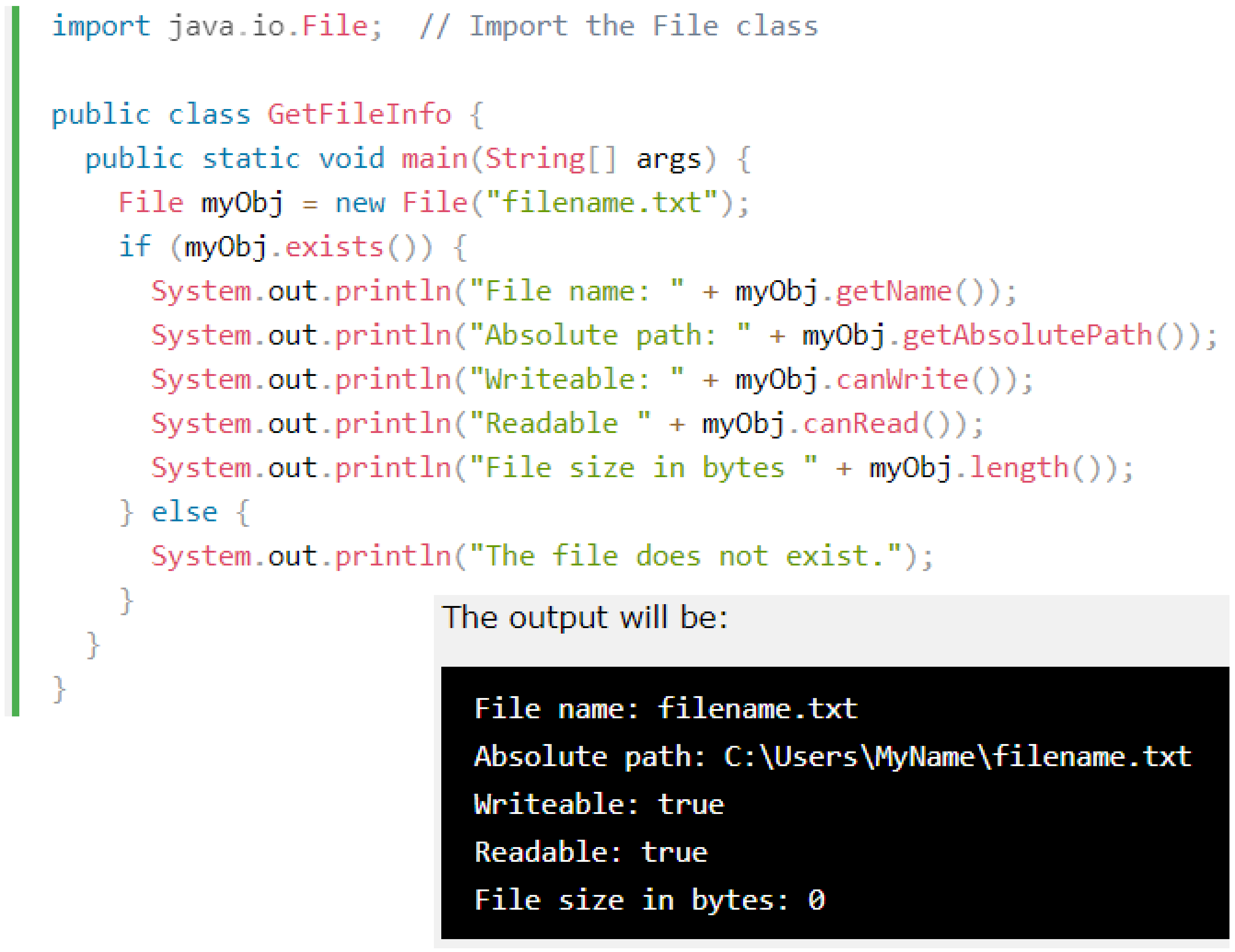


The output will be:

```
Successfully wrote to the file.
```

File: Get File Information

- To get more information about a file, use any of the File methods:



```java
import java.io.File;  // Import the File class

public class GetFileInfo {
  public static void main(String[] args) {
    File myObj = new File("filename.txt");
    if (myObj.exists()) {
      System.out.println("File name: " + myObj.getName());
      System.out.println("Absolute path: " + myObj.getAbsolutePath());
      System.out.println("Writeable: " + myObj.canWrite());
      System.out.println("Readable " + myObj.canRead());
      System.out.println("File size in bytes " + myObj.length());
    } else {
      System.out.println("The file does not exist.");
    }
  }
}
```

The output will be:

```
File name: filename.txt
Absolute path: C:\Users\MyName\filename.txt
Writeable: true
Readable: true
File size in bytes: 0
```

File: Delete Files

- To delete a file in Java, use the delete() method

```java
import java.io.File;  // Import the File class

public class DeleteFile {
  public static void main(String[] args) {
    File myObj = new File("filename.txt");
    if (myObj.delete()) {
      System.out.println("Deleted the file: " + myObj.getName());
    } else {
      System.out.println("Failed to delete the file.");
    }
  }
}
```

The output will be:

```
Deleted the file: filename.txt
```

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File: Delete a Folder

- You can also delete a folder. However, it must be empty

```java
import java.io.File;

public class DeleteFolder {
  public static void main(String[] args) {
    File myObj = new File("C:\\Users\\MyName\\Test");
    if (myObj.delete()) {
      System.out.println("Deleted the folder: " + myObj.getName());
    } else {
      System.out.println("Failed to delete the folder.");
    }
  }
}
```

The output will be:

```
Deleted the folder: Test
```

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File: Create a File

- The File class has many useful methods for creating and getting information about files. For example

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