EXCEPTIONS

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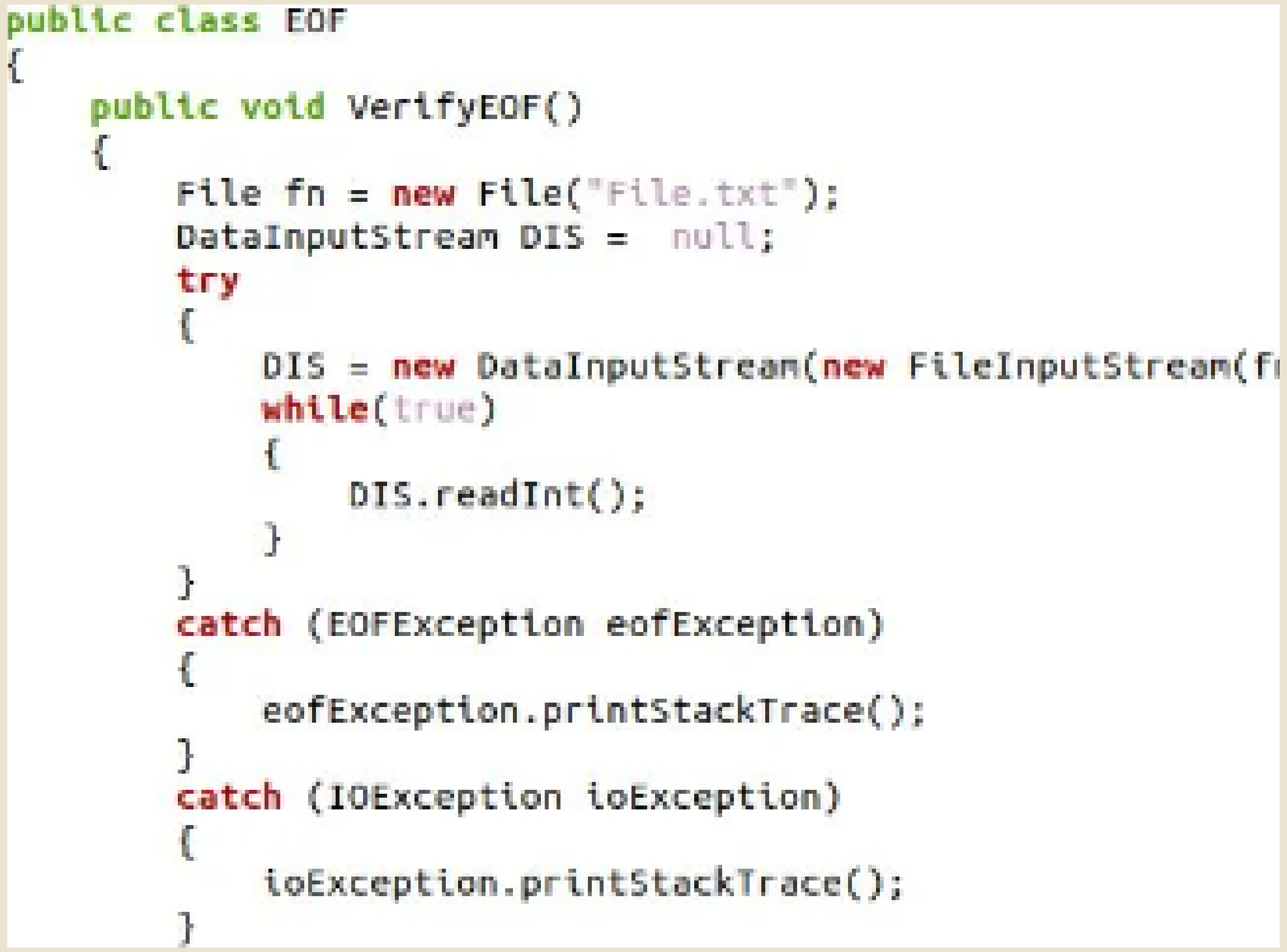
Definition

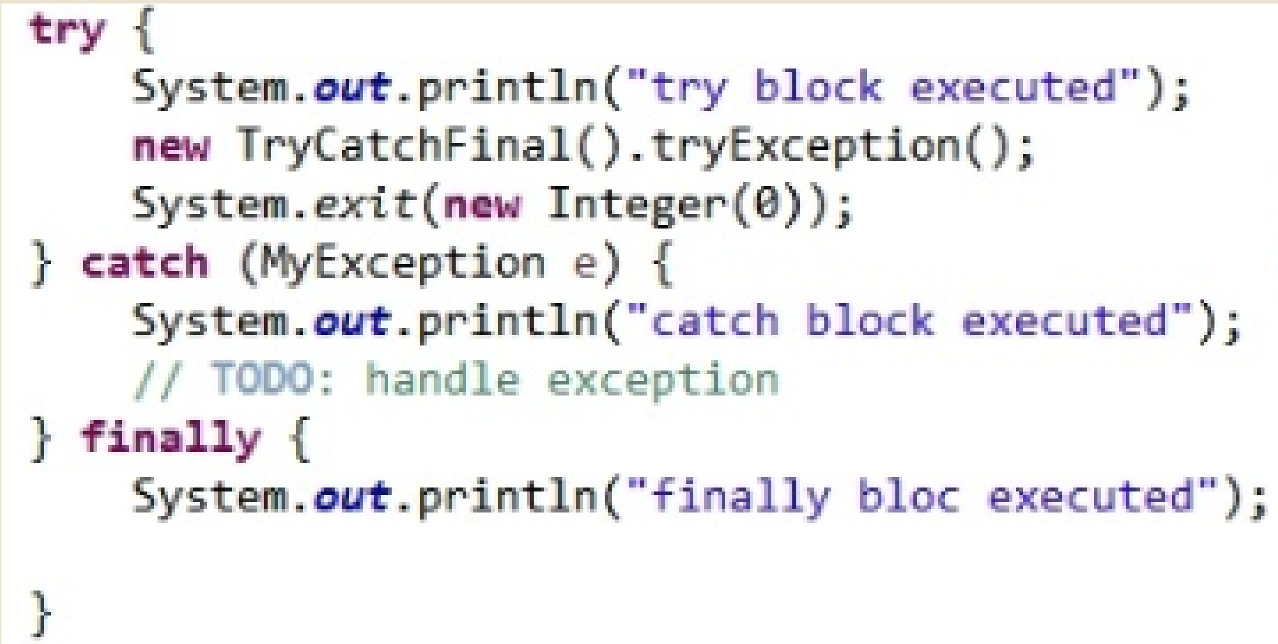
Exceptions in Java are a way to handle errors and exceptional conditions that can occur during the execution of a program. When an error occurs, Java will typically stop and generate an error message. The technical term for this is that Java will throw an exception

Exception classes

In programming, exception classes are code blocks designed to handle and respond to error or exceptional situations.



```
public class EOF
{
    public void VerifyEOF()
    {
        File fn = new File("File.txt");
        DataInputStream DIS =  null;
        try
        {
            DIS = new DataInputStream(new FileInputStream(f
            while(true)
            {
                DIS.readInt();
            }
        }
        catch (EOFException eofException)
        {
            eofException.printStackTrace();
        }
        catch (IOException ioException)
        {
            ioException.printStackTrace();
        }
```



```
try {
    System.out.println("try block executed");
    new TryCatchFinal().tryException();
    System.exit(new Integer(0));
} catch (MyException e) {
    System.out.println("catch block executed");
    // TODO: handle exception
} finally {
    System.out.println("finally bloc executed");

}
```

Photo 1

Exception classes act as 'containers' that hold information about errors in a program and provide methods to handle those situations in a controlled manner.

Photo 2

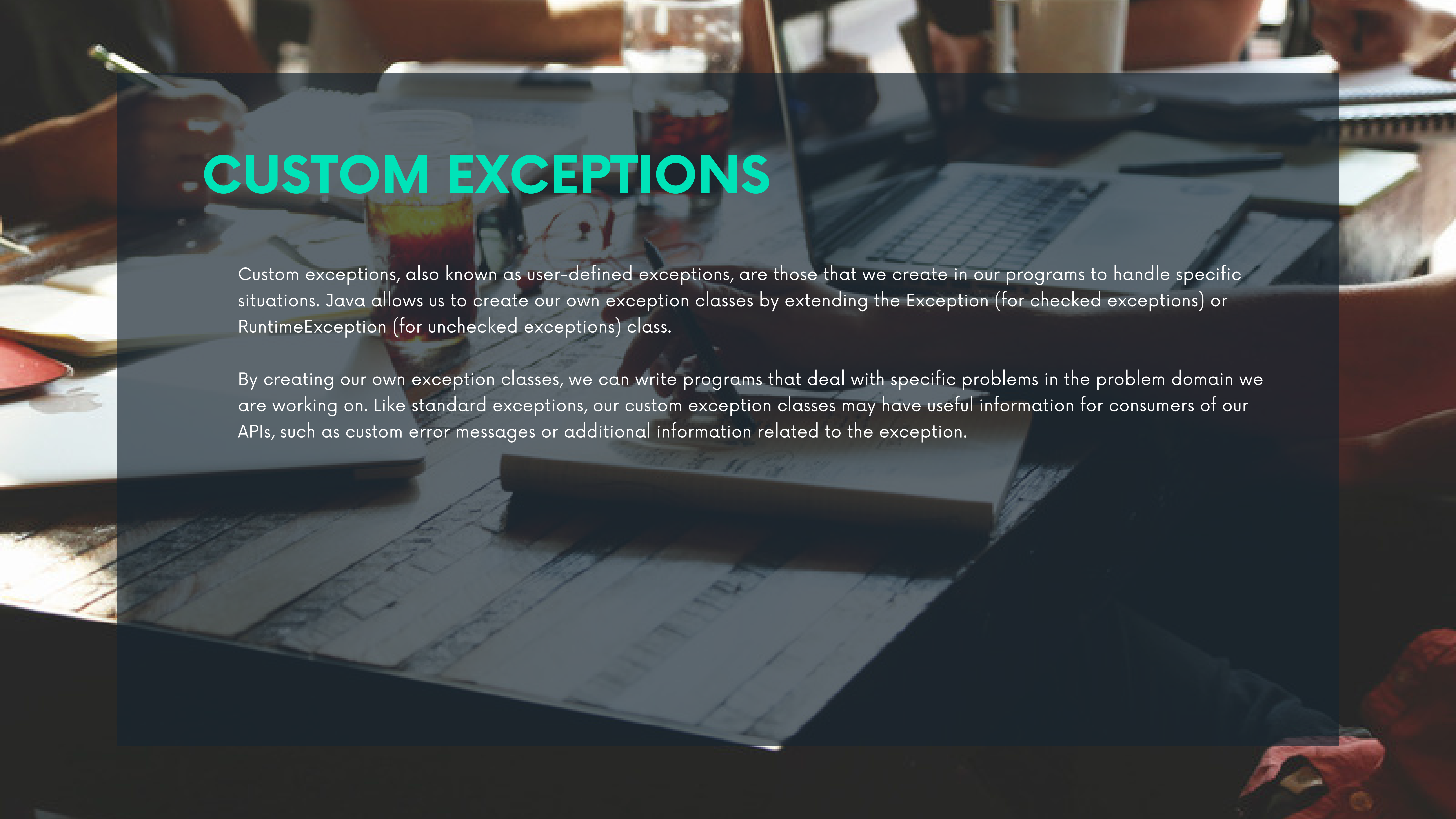
Exception classes are organized in a hierarchy, with a general base class called 'Exception' and more specialized classes like 'IOException' or 'NullPointerException'

Photo 3

When an exception is thrown in a program, it interrupts the normal execution and searches for an appropriate code block to handle it, using the 'try-catch' structure

‘try-catch‘ structure.

- The ’try’ block contains the code that might generate an exception, while the ’catch’ block captures and handles that exception, providing specific instructions to deal with the error.
- In addition to the ’catch’ block, ’finally’ blocks can also be used to execute code that should run regardless of whether an exception occurred or not.
- In summary, exception classes are essential tools in programming that allow us to control and manage errors efficiently, improving the reliability and robustness of our programs.



CUSTOM EXCEPTIONS

Custom exceptions, also known as user-defined exceptions, are those that we create in our programs to handle specific situations. Java allows us to create our own exception classes by extending the Exception (for checked exceptions) or RuntimeException (for unchecked exceptions) class.

By creating our own exception classes, we can write programs that deal with specific problems in the problem domain we are working on. Like standard exceptions, our custom exception classes may have useful information for consumers of our APIs, such as custom error messages or additional information related to the exception.