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# Checker Framework Tutorial

## Getting Started

This page walks you through a simple example to show how to use a type-checker from the command line. It shows how the Nullness Checker can be used to prevent null pointer exceptions.

### Outline

1. [Manually spot the null pointer exception](#)
2. [Run the Nullness Checker to see how it can catch this error](#)
3. [Correct the error](#)
4. [Run the Nullness Checker to verify that there are no more errors](#)

### 1. Spot the null pointer exception

Begin by **viewing `NullnessExample.java`** (If you have not already, download [the source files](#) for the tutorial.) It is a simple Java program with an obvious null pointer exception.

```
public class NullnessExample {
    public static void main(String[] args) {
        Object myObject = null;
        System.out.println(myObject.toString());
    }
}
```

### 2. Run the Nullness Checker

**Run the Nullness Checker** to see how it can warn you about this error at compile time.

To run the Nullness Checker, run javac with command-line arguments `-processor org.checkerframework.checker.nullness.NullnessChecker`, as follows.

(Note: In this tutorial, the commands that you cut-and-paste to run on the command line appear in bold after a \$ prompt.)

(Note: You should have already made javac check [an alias](#) to the Checker Framework compiler.)

```
$ javac -processor org.checkerframework.checker.nullness.NullnessChecker
NullnessExample.java
```

The following error will be produced.

```
NullnessExample.java:9: error: [dereference.of.nullable] dereference of possibly-
null reference myObject
```

```
System.out.println(myObject.toString());
                        ^
```

1 error

### 3. Correct the error

Edit the code to **initialize the myObject variable** to some non-null value.

```
public class NullnessExample {
    public static void main(String[] args) {
        Object myObject = new Object();
        System.out.println(myObject.toString());
    }
}
```

### 4. Re-run the Nullness Checker

```
$ javacheck -processor org.checkerframework.checker.nullness.NullnessChecker
NullnessExample.java
```

No errors should be produced.

This was a very simple example to show how to use the Checker Framework from the command line. The next example is a little more complex.

Next, try [Validating User Input](#), an example using the Regex Checker.

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