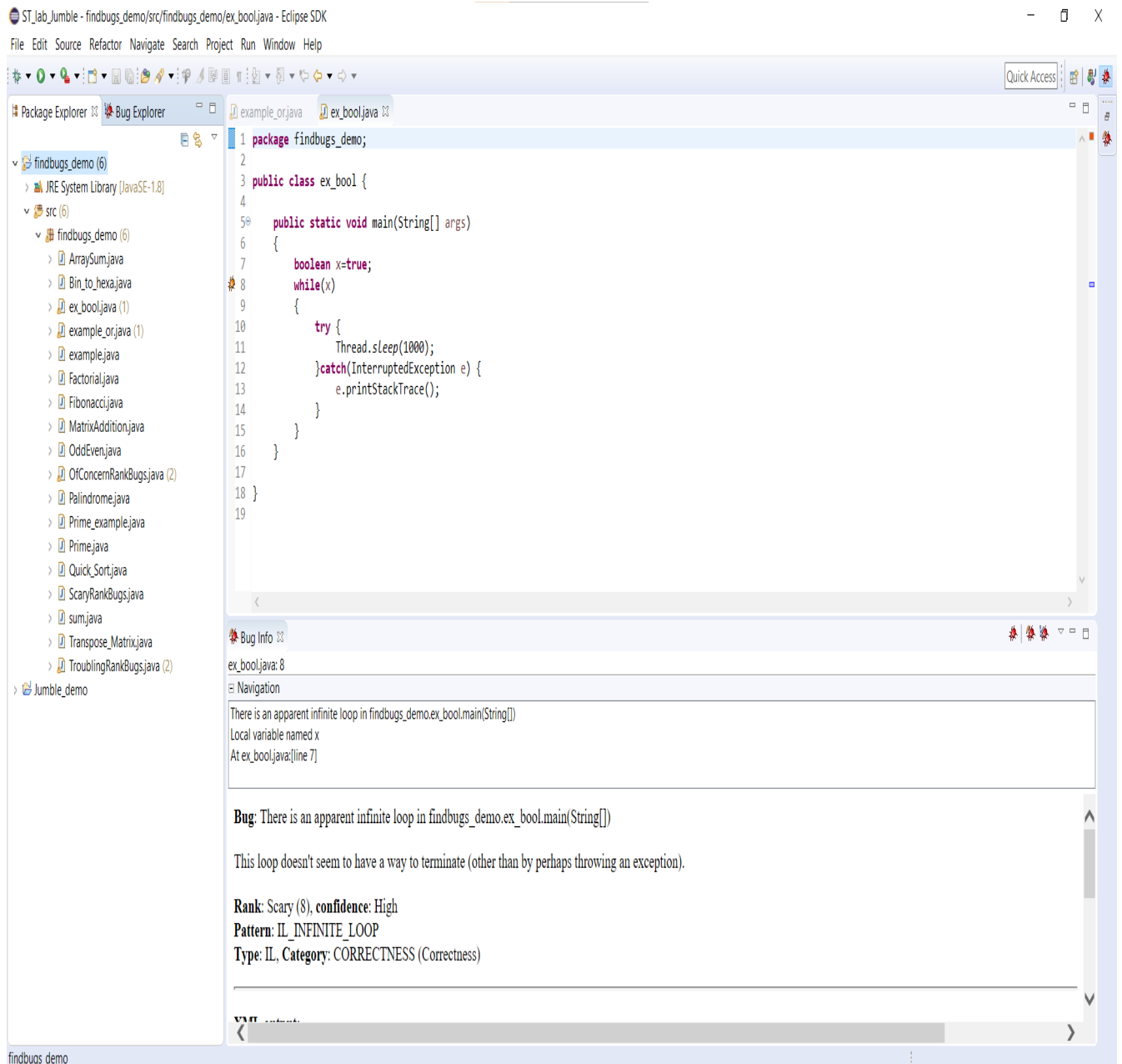# Assignment on FindBugs

Submitted by: -

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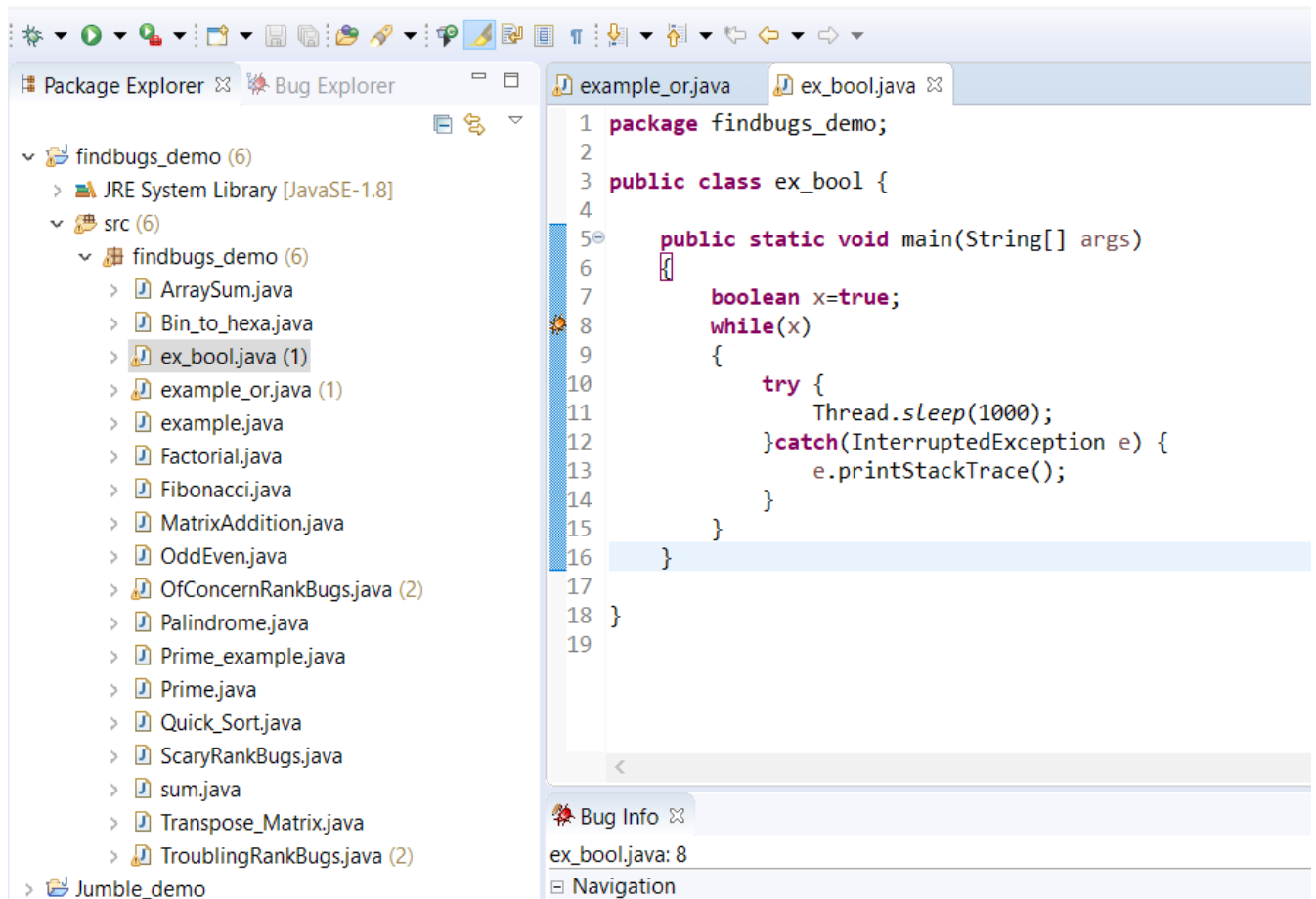
After executing FindBugs on the package, total 6 bugs were found.

Note: -

I.   Default settings used for FindBugs in the preferences.

II.   Most of the program did not have any bugs.

III.   Some programs had bugs which were resolved.

IV.   Not all bugs could be resolved.

1. Boolean

Details of Bug found –

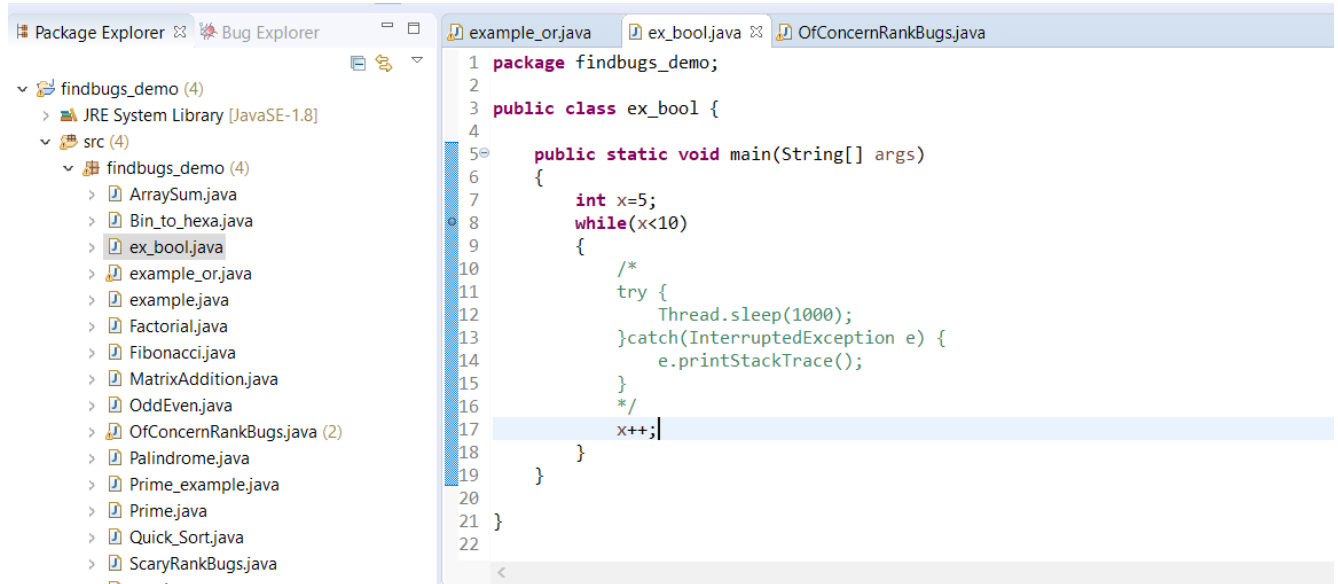**Bug**: There is an apparent infinite loop in findbugs_demo.ex_bool.main(String[])

This loop doesn't seem to have a way to terminate (other than by perhaps throwing an exception).

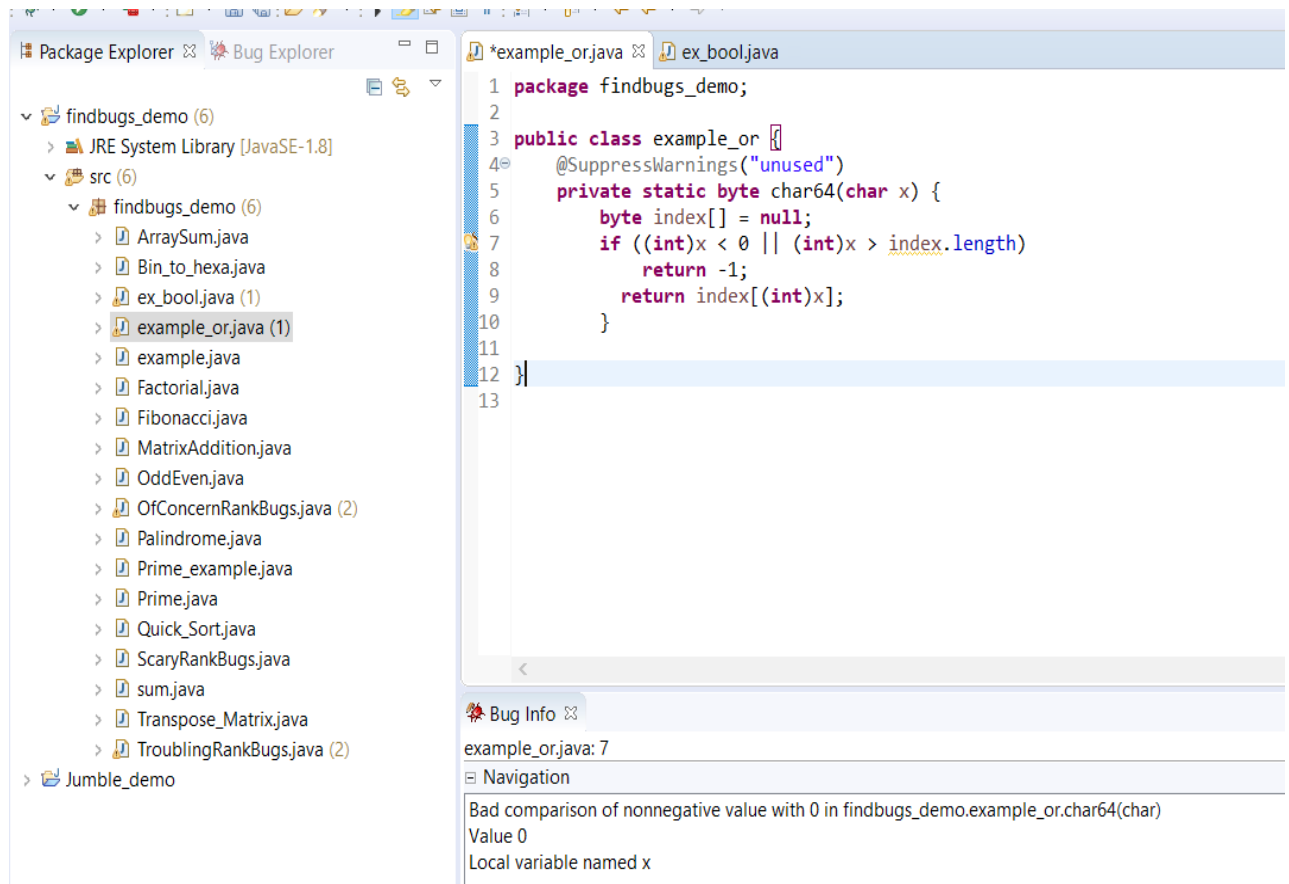**Rank**: Scary (8), **confidence**: High
Pattern: IL_INFINITE_LOOP
Type: IL, **Category**: CORRECTNESS (Correctness)

This bug was resolved by changing loop condition.


```java
1  package findbugs_demo;
2
3  public class ex_bool {
4
5      public static void main(String[] args)
6      {
7          int x=5;
8          while(x<10)
9          {
10             /*
11             try {
12                 Thread.sleep(1000);
13             }catch(InterruptedException e) {
14                 e.printStackTrace();
15             }
16             */
17             x++;
18         }
19     }
20
21 }
22
```

Package Explorer / Bug Explorer

findbugs_demo (4)
  JRE System Library [JavaSE-1.8]
  src (4)
    findbugs_demo (4)
      ArraySum.java
      Bin_to_hexa.java
      ex_bool.java
      example_or.java
      example.java
      Factorial.java
      Fibonacci.java
      MatrixAddition.java
      OddEven.java
      OfConcernRankBugs.java (2)
      Palindrome.java
      Prime_example.java
      Prime.java
      Quick_Sort.java
      ScaryRankBugs.java

2. Or example

The details of the Bug found is –

Bug: Bad comparison of nonnegative value with 0 in findbugs_demo.example_or.char64(char)
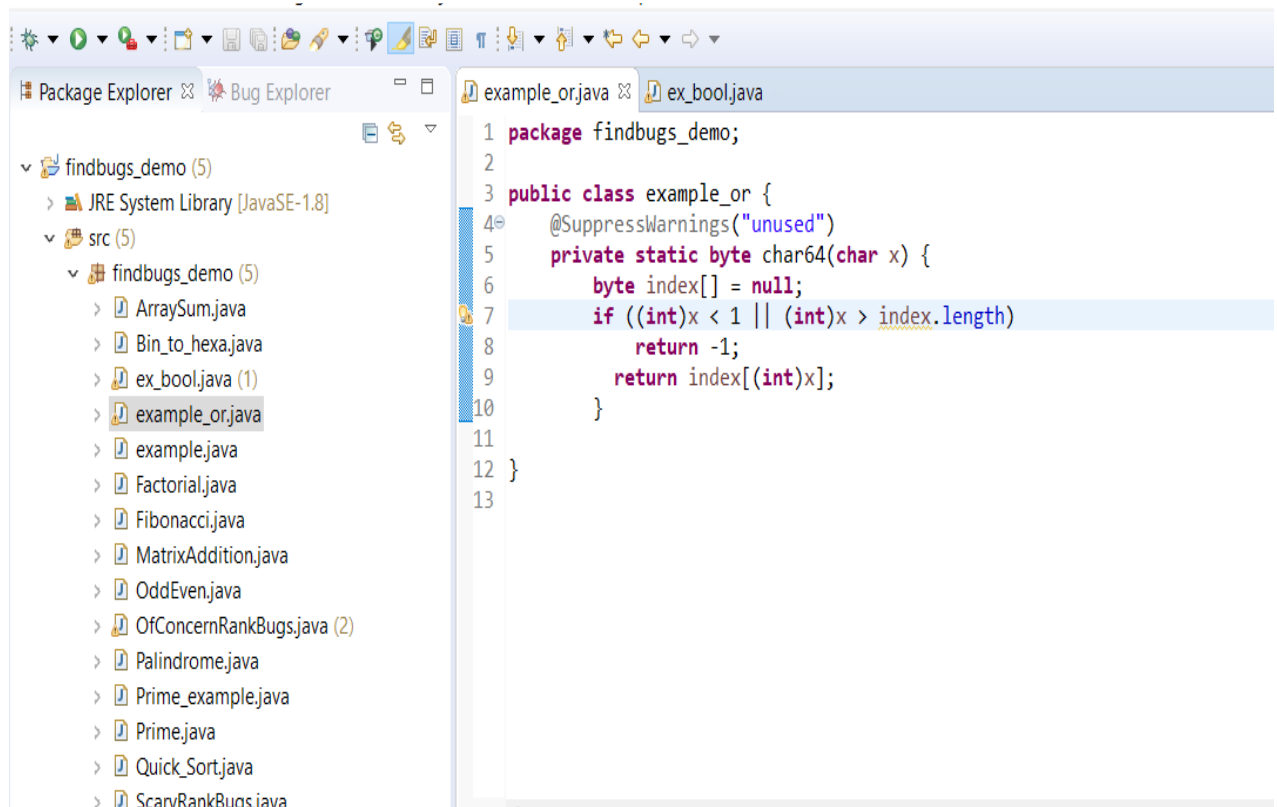
This code compares a value that is guaranteed to be non-negative with a negative constant or zero.

Rank: Scary (7), **confidence**: Normal
Pattern: INT_BAD_COMPARISON_WITH_NONNEGATIVE_VALUE
Type: INT, **Category**: CORRECTNESS (Correctness)

The bug was resolved –

```java
package findbugs_demo;

public class example_or {
    @SuppressWarnings("unused")
    private static byte char64(char x) {
        byte index[] = null;
        if ((int)x < 1 || (int)x > index.length)
            return -1;
          return index[(int)x];
    }
}
```

After resolving all the bugs and executing FindBugs –