

## Chapter 13 Exception Handling

1. See the section "Exceptions and Exception Types." The `Throwable` class is the root of Java exception classes. `Error` and `Exception` are subclasses of `Throwable`. `Error` describes fatal system errors, and `Exception` describes the errors that can be handled by Java programs. The subclasses of `Error` are `LinkageError`, `VirtualMachineError`, and `AWTError`. The subclasses of `Exception` include `RuntimeException`, `IOException`, `AWTException`, and `InstantiationException`.
2. The purpose of claiming exceptions is to tell the Java runtime system what can go wrong. You claim an exception using the `throws` keyword in the method declaration. You can claim multiple exceptions, separated by commas.
3. You use the `throw` statement in the method to throw an exception. You cannot throw multiple exceptions in a single `throw` statement.
4. `throw` is for throwing exceptions and `throws` is for claiming exceptions.
5. When an exception occurs, the Java runtime system creates an object for the exception, and the catch process starts.
6. Use a `try-catch` block to catch exceptions.
7. No.
8. Will `statement3` be executed?  
**Answer:** No.

If the exception is not caught, will `statement4` be executed?

**Answer:** No.

If the exception is caught in the `catch` clause, will `statement4` be executed?

**Answer:** Yes.

If the exception is passed to the caller, will `statement4` be executed?

**Answer:** No.

9. Will `statement5` be executed if the exception is not caught?  
**Answer:** No.

If the exception is of type `Exception3`, will `statement4` be executed? Will `statement5` be executed?

**Answer:** This exception is caught by the `catch (Exception3 e3)` clause and `statement4` will be executed, but `statement5` will not be executed because it is rethrown to its caller.

10. It does not have a catch clause.
11. Welcome to Java  
The finally clause is executed
12. Welcome to Java  
The finally clause is executed  
Note: the finally clause is always executed!
13. Welcome to Java  
The finally clause is executed
14. Welcome to Java  
Welcome to HTML  
The finally clause is executed
15. Welcome to Java  
RuntimeException caught  
The finally clause is executed
16. Welcome to Java  
Welcome to HTML  
The finally clause is executed  
End of Block
17. Welcome to Java  
End of Block  
followed by some exception message.
18. RuntimeException is a subclass of Exception. Therefore, RuntimeException should be caught before Exception.
19. Rational operation error
20. Rational operation error
21. Rational operation error  
After the method call
22. Rational operation error  
Rational operation error

23. If an exception were not caught in a non-GUI application, the program would terminate. If an exception were not caught in a GUI application, the program would continue and the error message would be reported on the console.
24. To print trace information to the console.