

CISC 3115

Exception and Call Stack

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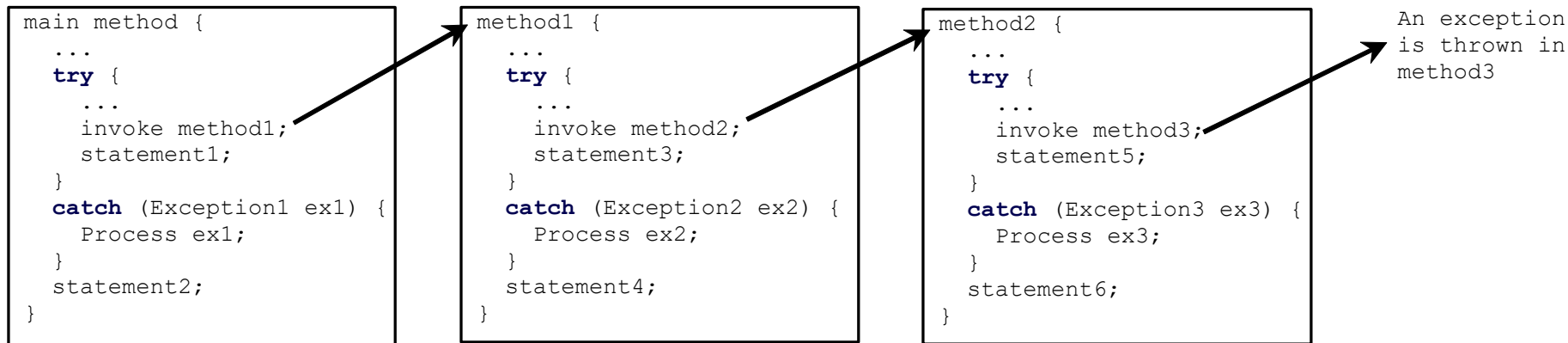
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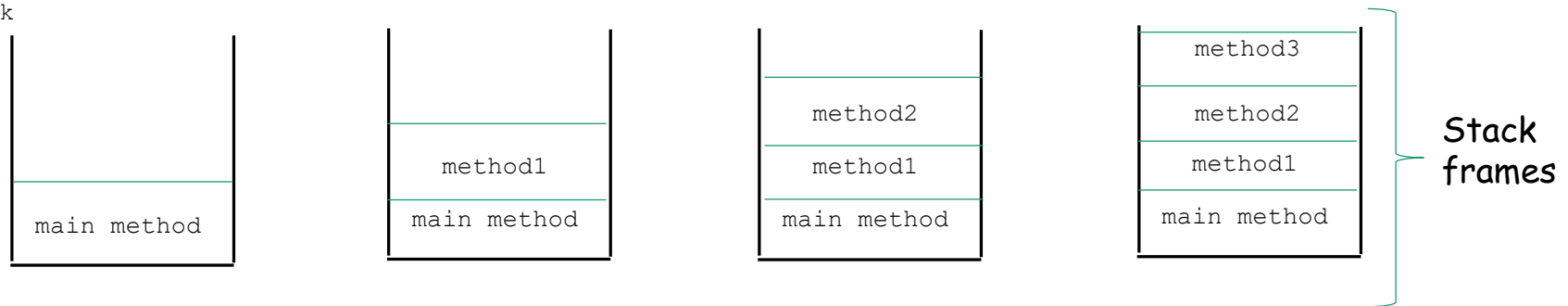
Outline

- Discussed
 - Approaches to handle errors (what-if and exceptions)
 - Concept of Exception
 - The Java throwable class hierarchy
 - system errors, runtime exceptions, checked errors, unchecked errors
 - Methods of declaring, throwing, catching exception, and rethrowing exceptions
- Exception, call stack, stack frame, and stack trace

Exception and Call Stack



Call Stack



Example: Call Stack and Stack Trace

```
MINGW64:/c/Users/hui/work/course/CISC3115/SamplePrograms/C14aException/stacktrace
hui@ThinkpadE450 MINGW64 ~/work/course/CISC3115/SamplePrograms/C14aException/stacktrace (master)
$ javac StackTraceDemo.java

hui@ThinkpadE450 MINGW64 ~/work/course/CISC3115/SamplePrograms/C14aException/stacktrace (master)
$ ls
Course.class  StackTraceDemo.class  Student.class
Course.java   StackTraceDemo.java   Student.java

hui@ThinkpadE450 MINGW64 ~/work/course/CISC3115/SamplePrograms/C14aException/stacktrace (master)
$ java StackTraceDemo
Exception in thread "main" java.lang.IllegalStateException: No way to compute GPA if no courses.
    at Student.getGPA(Student.java:3)
    at Course.addStudent(Course.java:12)
    at StackTraceDemo.doSth(StackTraceDemo.java:10)
    at StackTraceDemo.main(StackTraceDemo.java:4)

hui@ThinkpadE450 MINGW64 ~/work/course/CISC3115/SamplePrograms/C14aException/stacktrace (master)
$
```

Questions

- Concept of call stack and stack frame?
- Exception and stack trace?
- Local variables, method parameters, and call stack?