

Databases and Information Systems – Exercise Courses

Annotations on Debugging

Simple System.out.println()

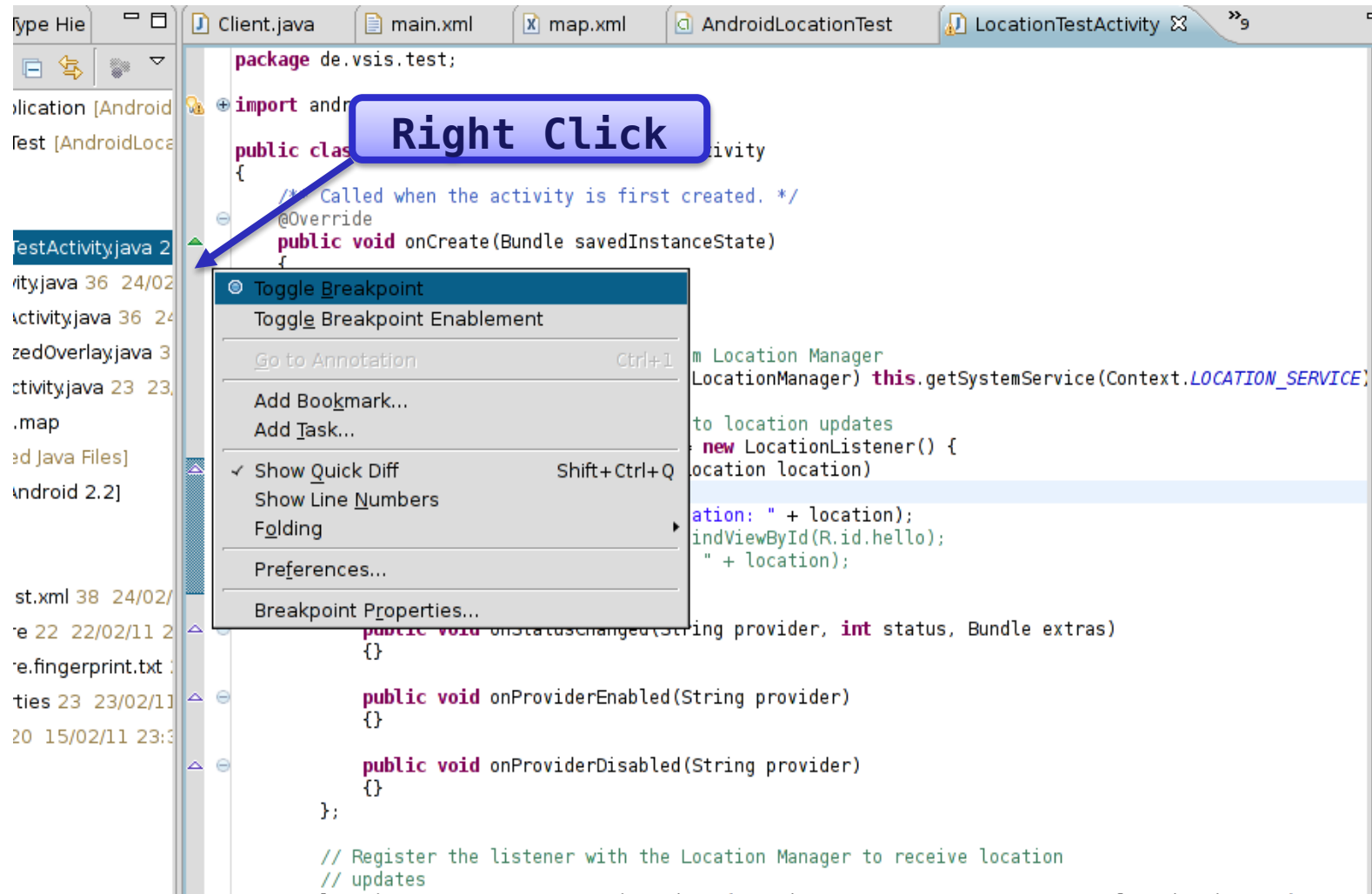
- ◆ Inserting print statements:

```
int foo = getFancySensorValue();  
System.out.println(„Sensor value is: "+foo);
```
- ◆ Time-consuming

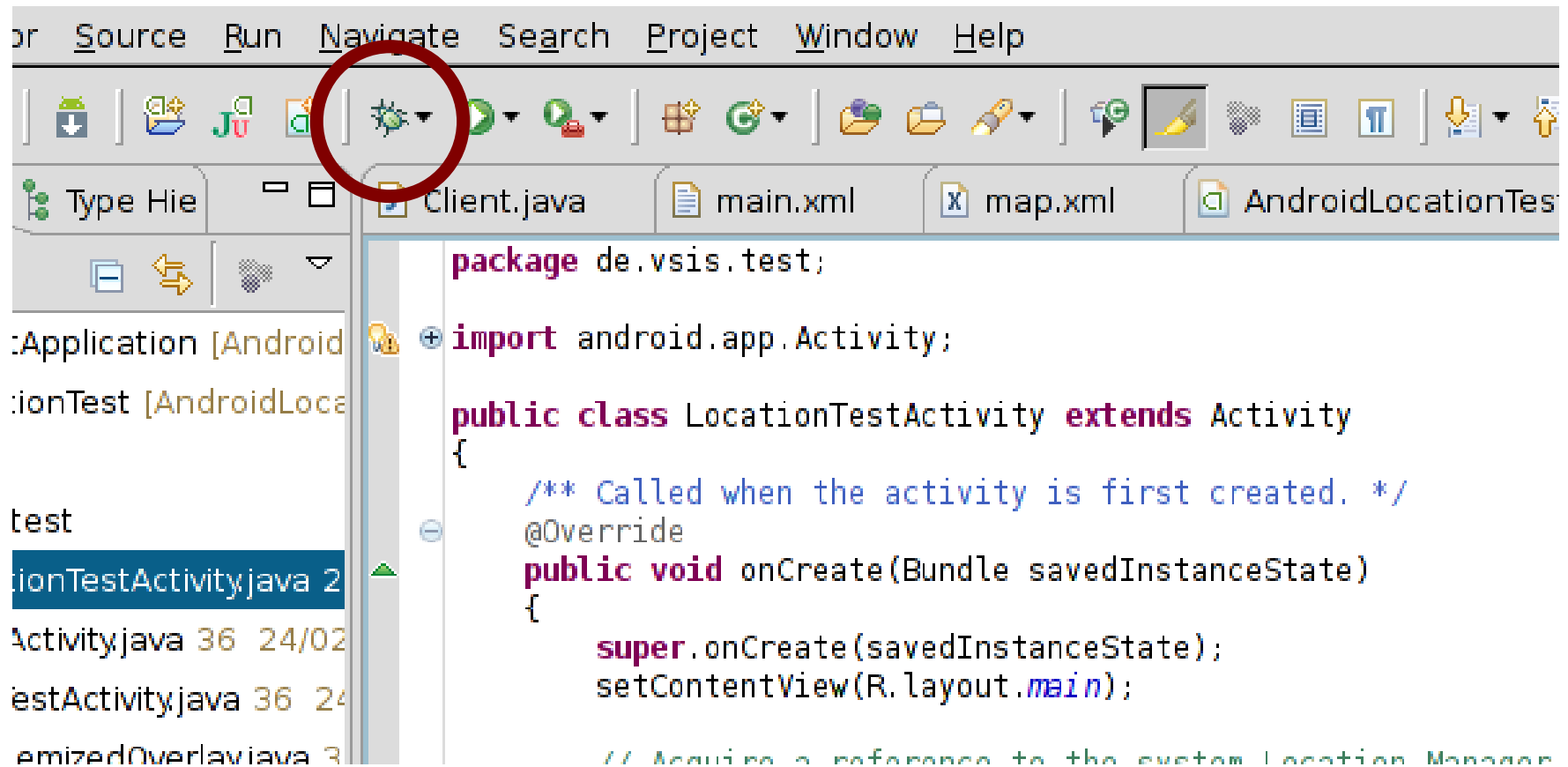
The Eclipse Debugger

- ◆ Code remains unchanged
- ◆ Variable inspection
- ◆ Breakpoints



Setting Breakpoints



Starting the Debugger



Running the Debugger



```
URLConnection conn = (URLConnection)new URL("http://www.google.de/").c
conn.setRequestMethod("GET");
conn.setDoOutput(true);
conn.setDoInput(true);
conn.connect();

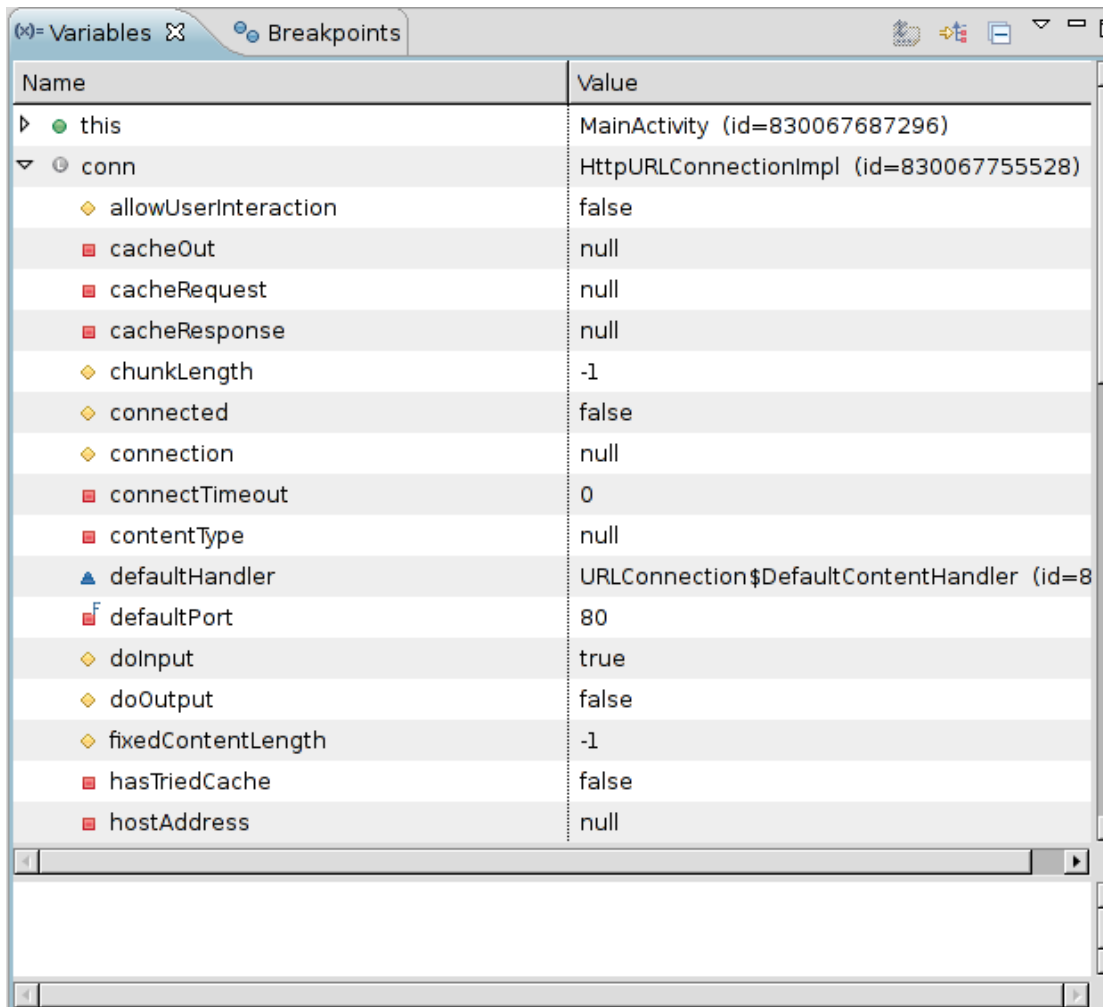
InputStream in = conn.getInputStream();

bl.setText(""+conn.getContentLength()+" @ "+conn.getContentType());

} catch (MalformedURLException e) {
    e.printStackTrace();
}
```

The debugger pauses the application at the breakpoint

Variable Inspection

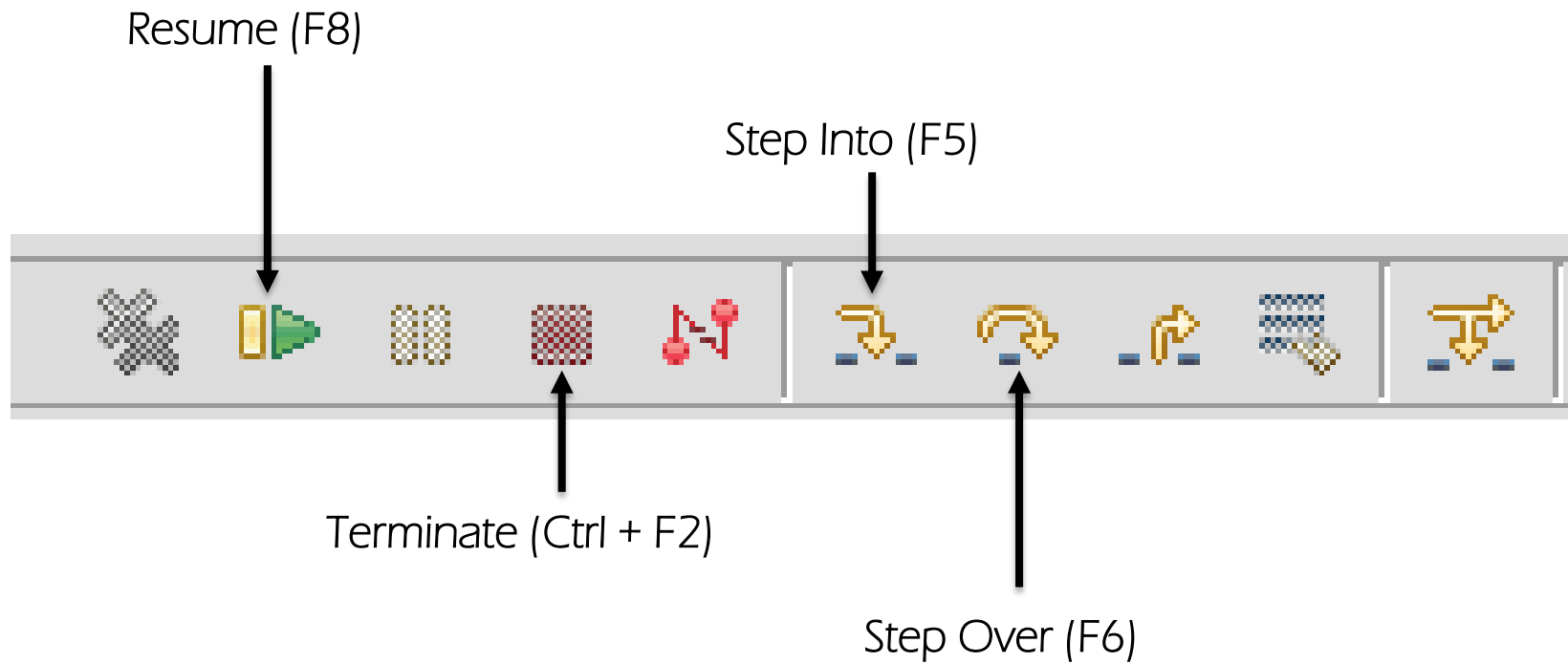


The screenshot shows the 'Variables' window in Visual Studio. The 'this' variable is of type MainActivity (id=830067687296). The 'conn' variable is of type HttpURLConnectionImpl (id=830067755528) and is expanded to show its properties. The properties include allowUserInteraction (false), cacheOut (null), cacheRequest (null), cacheResponse (null), chunkLength (-1), connected (false), connection (null), connectTimeout (0), contentType (null), defaultHandler (URLConnection\$DefaultContentHandler (id=8...)), defaultPort (80), doInput (true), doOutput (false), fixedContentLength (-1), hasTriedCache (false), and hostAddress (null).

Name	Value
this	MainActivity (id=830067687296)
conn	HttpURLConnectionImpl (id=830067755528)
allowUserInteraction	false
cacheOut	null
cacheRequest	null
cacheResponse	null
chunkLength	-1
connected	false
connection	null
connectTimeout	0
contentType	null
defaultHandler	URLConnection\$DefaultContentHandler (id=8...
defaultPort	80
doInput	true
doOutput	false
fixedContentLength	-1
hasTriedCache	false
hostAddress	null

Variables can be inspected and further breakpoints can be set.


Stepping



- ♦ Very comfortable tool
- ♦ Provides good insights into run-time behaviour
- ♦ When a problem occurs:
 1. Debugging might reveal the cause or
 2. at least narrows down possible causes

Debugging is cool, no matter what the others say!

I will use Google before asking dumb questions. I will use Google before asking dumb questions. I will use Google before asking dumb questions. I will use Google before asking dumb questions. I will use Google before asking dumb questions. I will use Google before asking dumb questions. I will use Google before asking dumb questions. I will use Google before asking dumb questions. I will use Google before asking dumb questions. I will use Google before asking dumb questions. I will use Google before asking dumb questions. I will use Google before asking dumb questions.

A cartoon illustration of Bart Simpson, wearing his signature red shirt and yellow skin, standing at the bottom right corner of the green chalkboard. He has a mischievous expression, looking towards the viewer while holding a small object in his hand. The background behind him is the dark green surface of the chalkboard, which is covered in white text.