

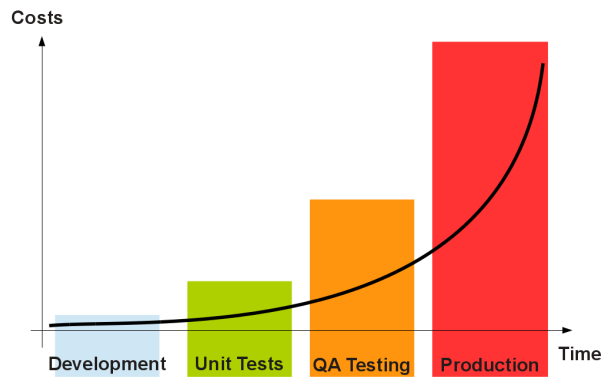
WASP

WALLENBERG AI,
AUTONOMOUS SYSTEMS
AND SOFTWARE PROGRAM

Idriss Riouak



- *Idriss Riouak, 28 Years*
- BCs @ Parma University
- MSc @ University of Udine (Automatic Software Verification and Formal Methods)
- 3rd Year WASP PhD Student @ Lund University with focus on Program Analysis



Remember the Mars Climate Orbiter incident from 1999?

- My research interests are:
 - Dataflow Analysis
 - On-demand evaluation
 - Compiler construction
 - Reference Attribute Grammars

Bad 👎

Write code

Commit &
Push

Work on
something
else

Notification
with static
errors.

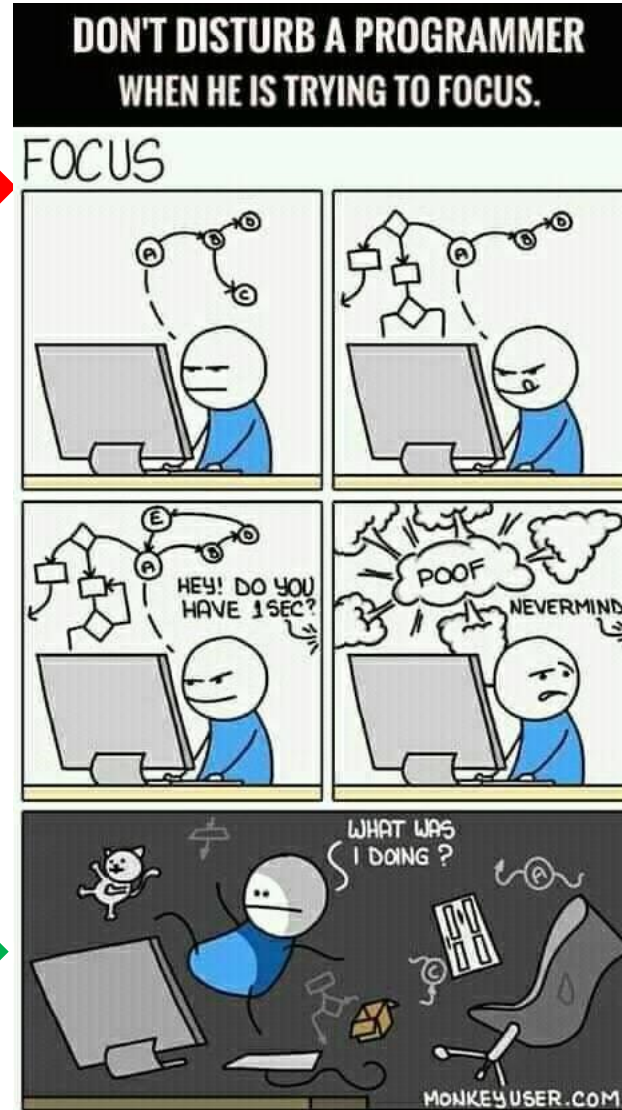
Good 👍

Write code

Errors in
your IDE

Commit &
Push

Work on
something
else



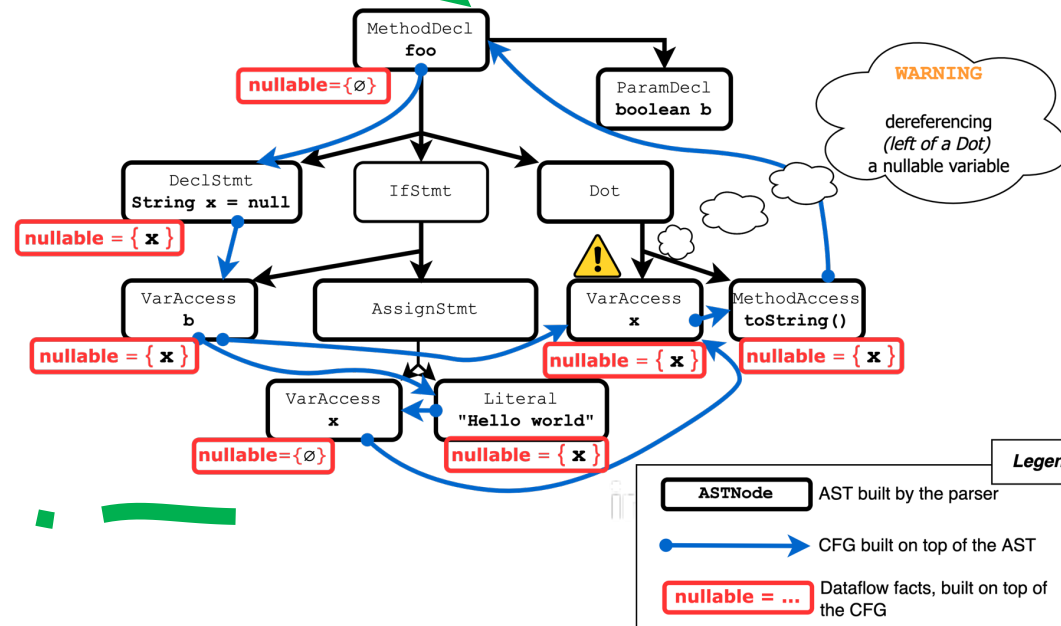
Yet another static analyser ?

- Clang static analyser
- Spotbugs
- Findbugs
- Éclair
- Astreè



- IntraJ: Static Analyzer for Java 8
- Source code control-flow analysis
- No need to generate bytecode
- On-demand evaluation
- Easy IDE integration
- Quick Fixes and bug Explanation

```
1 void foo(boolean b){  
2   String x = null;  
3   if (b) x = "Hello world!";  
4   x.toString();  
5 }
```



```
1 void foo(boolean b){  
2   String x = null;  
3   if (b) x = "Hello world!";  
4   if (x != null) x.toString();  
5 }
```