CMPT 473
Software Quality Assurance

Managing Bugs

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    - *Bug Advocacy*

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These perspectives are not independent!
Why?

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  - **What** specifically is incorrect
  - **Why** it is incorrect
  - **Where** / **when** it is incorrect

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Note: *Sensitive values* should not even be available or possible to report!
This indicates design bugs!

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What have we left out?

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Bad bug reporting & management is worse that none!
Any ideas why?

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  - Centralize communication (developer & user) to:
    - Own
    - Prioritize
    - Reproduce, Localize, Explain
    - Patch

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  - “Who knows the most about this module?”
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  - “Who worked with this code most recently?”
  - Is this a client side issue?

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What makes bugs a higher priority for you?

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This requires proper risk assessment (tricky)

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Why are new bugs important?

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- Which bugs are important?
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  - Have substantial risks / consequences
  - Are new in the latest version
- Identifying the importance of bugs is critical to prioritizing them
  - Usually informally at first until a bug owner is found to estimate the risk

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  - …?

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  - A minimal, self contained test case (steps to reproduce)

Bug Advocacy – An Example

"A colleague of mine have find a hairy bug, here is a simple code to reproduce it."

```
public class FunWithMultiCatch {
   public static void main(String[] args) {
     Runnable r = () -> {
       try {
         Object o = null;
         o.getClass();
         throw new IOException();
       } catch(IOException | IllegalArgumentException e) {
         System.out.println("KO !");
       } catch(RuntimeException e) {
         System.out.println("OK !");
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     };
     r.run();
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It prints 'KO !' :(

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  - It is also what *I* face when trying to help students
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  - expected behaviors

How can we minimize test cases?

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Let's think of what else we could do...