

Final presentation

By: Mack Arnold

Commuter Relief

- This application will store your cars
- It will store your reports you make with the correct calculations
- Soon it will be able to email it to your employer
- You can delete cars and reports to your liking
- Only the Admin(me) can delete users.

My individual research topic

- I implemented a code quality plugin to ensure that my code isn't as bad as it was
- The next couple slides will show that there weren't that many errors.
 - Just some unused objects I created, and some names that it didn't understand that I will explain when I get to it.

This is an example of the plugin finding an object I made and never used, which IntelliJ sees as well, but this helped me delete redundant code.

The screenshot displays the IntelliJ IDEA IDE with a project named 'projectMackArnold'. The main editor shows the `CarsServ.java` file, which extends `HttpServlet`. The `doGet` method contains several lines of code, including the creation of a `User` object and a `UserHibernateDao` object, which are then used in subsequent calls to `req.setAttribute` and `req.getRemoteUser`.

The FindBugs-IDEA plugin interface is visible at the bottom. It shows a list of bug items, including 'Dead store to user in edu.matc.controller.CarsServ.doGet' and 'Dead store to local variable'. The 'Dead store to user' bug is highlighted, showing the following details:

- Class:** `CarsServ` (edu.matc.controller) line 33
- Method:** `doGet` (edu.matc.controller.CarsServ.doGet(HttpServletRequest, HttpServletResponse))
- Priority:** High Confidence Dodgy code

The 'Dead store to local variable' bug is also visible, with a description: 'This instruction assigns a value to a local variable, but the value is not read or used in any subsequent instruction. Often, this indicates an error, because the value computed is never used.' The note mentions that Sun's javac compiler often generates dead stores for final local variables, and because FindBugs is a bytecode-based tool, there is no easy way to eliminate these false positives.

This is to show you that when you run the bug finder, it will say how many bugs in how many classes it analyzed.

ProjectMackArnold (Found 8 bug items in 27 classes) [more..](#)

- Dodgy code (5 items)
 - Dead local store (5 items)
 - Dead store to local variable (5 items)
 - Dead store to userDao in edu.matc.controller.CarsServ.d
 - Dead store to user in edu.matc.controller.CarsServ.doGe
 - Dead store to car in edu.matc.controller.DeleteCarServ.d
 - Dead store to route in edu.matc.controller.DeleteRoutesS
 - Dead store to user in edu.matc.controller.DeleteServ.dol
 - Bad practice (2 items)
 - Confusing method name (2 items)
 - Class names should start with an upper case letter (2 items)
 - The class name edu.matc.persistence.userRoleHibDao d
 - The class name edu.matc.persistence.userRoleHibDaoTe
 - Performance (1 item)
 - Unused field (1 item)
 - Unused field: edu.matc.persistence.UserHibernateDaoTe

Preview userRoleHibDao.java:

```
1 package edu.matc.persistence;
2
3 import ...
4
5 /**
6  * The type User role hib dao.
7  */
8 public class userRoleHibDao {
9
10     private final Logger log = Logger.getLogger(this.getClass());
11
12     /**
13      * Gets all roles.
14      *
15      * @return the all roles
16      */
17     public List<UserRole> getAllRoles() {
18         List<UserRole> roles = new ArrayList<>();
19         Session session = null;
20         try {
21             session = SessionFactoryProvider.getSessionFactory().openSession();
22             roles = session.createCriteria(UserRole.class).list();
23         } catch (HibernateException he) {
24             log.error("Error getting all Roles", he);
25         } finally {
26             if (session != null) {
27                 session.close();
28             }
29         }
30     }
31 }
```

The class name userRoleHibDao doesn't start with an upper case letter

Class: [userRoleHibDao](#)
(edu.matc.persistence) lines 16-138

Problem classification: Bad practice (Confusing method name) NM_CLASS_NAMING_CONVENTION (Class names should start with an upper case letter)

Priority: Medium Confidence Bad practice

Notes: In class edu.matc.persistence.userRoleHibDao Naming (Nm)

Class names should start with an upper case letter

Class names should be nouns, in mixed case with the first letter of each internal word capitalized. Try to keep your class names simple and descriptive. Use whole words-avoid acronyms and abbreviations (unless the abbreviation is much more widely used than the long form, such as URL or HTML).

And this is What I found that Paula pointed out to me that not everything it will tell you needs to be changed. For this example its complaining about my real weird name for my classes and in this case I don't have to change anything, its just the way I code and read it. It also complains when it sees that I don't have an uppercase class name which can be easily overlooked.

The screenshot displays the IntelliJ IDEA IDE interface. The top pane shows the project structure on the left and the source code of `userRoleHibDao.java` on the right. The code defines a package `edu.matc.persistence` and a public class `userRoleHibDao`. It includes a logger, a comment describing the class as a "User role hib dao", and a method `getAllRoles()` that returns a list of `UserRole` objects. A yellow warning icon is visible next to the class declaration.

The bottom pane shows the "Find Bugs - IDEA" tool window. It lists a "Bad practice" issue under the category "Class names should start with an upper case letter". The issue is titled "The class name edu.matc.persistence.userRoleHibDao doesn't start with an upper case letter".

The "Preview userRoleHibDao.java:" window shows the code snippet corresponding to the warning, highlighting the `public class userRoleHibDao` line.

The "Bug Details" panel on the right provides more information about the issue:

- The class name userRoleHibDao doesn't start with an upper case letter**
- Class:** `userRoleHibDao` (edu.matc.persistence) lines 16-138
- Problem classification:** Bad practice (Confusing method name) NM_CLASS_NAMING_CONVENTION (Class names should start with an upper case letter)
- Priority:** Medium Confidence Bad practice
- Notes:** In class edu.matc.persistence.userRoleHibDao Naming (Nm)
- Class names should start with an upper case letter**
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This is another example from the last slide where the class didn't start with a capital letter, but when you hover over the name it says couldn't comprehend the name, but I couldn't hover and screenshot at the same time.

The screenshot displays the IntelliJ IDEA IDE interface. The top pane shows the project structure on the left and the source code of `userRoleHibDao.java` on the right. The code defines a `public class userRoleHibDao` with a `getAllRoles()` method. A yellow warning icon is present next to the class declaration. The bottom pane is divided into two sections: 'Find Bugs-IDEA' on the left and 'Bug Details' on the right. The 'Find Bugs-IDEA' section lists a 'Bad practice' item: 'The class name edu.matc.persistence.userRoleHibDao doesn't start with an upper case letter'. The 'Bug Details' section provides information about this issue.

```
package edu.matc.persistence;

import ...

/**
 * The type User role hib dao.
 */
public class userRoleHibDao {

    private final Logger log = Logger.getLogger(this.getClass());

    /**
     * Gets all roles.
     *
     * @return the all roles
     */
    public List<UserRole> getAllRoles() {
        List<UserRole> roles = new ArrayList<>();
        Session session = null;
        try {
            session = SessionFactoryProvider.getSessionFactory().openSession();
            roles = session.createCriteria(UserRole.class).list();
        } catch (HibernateException he) {
            log.error("Error getting all Roles", he);
        } finally {
            if (session != null) {
                session.close();
            }
        }
    }
}
```

The class name `userRoleHibDao` doesn't start with an upper case letter

Class: `userRoleHibDao`
(edu.matc.persistence) lines 16-138

Problem classification: Bad practice (Confusing method name) NM_CLASS_NAMING_CONVENTION (Class names should start with an upper case letter)

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This is the end of my final Individual presentation for Enterprise Java.