

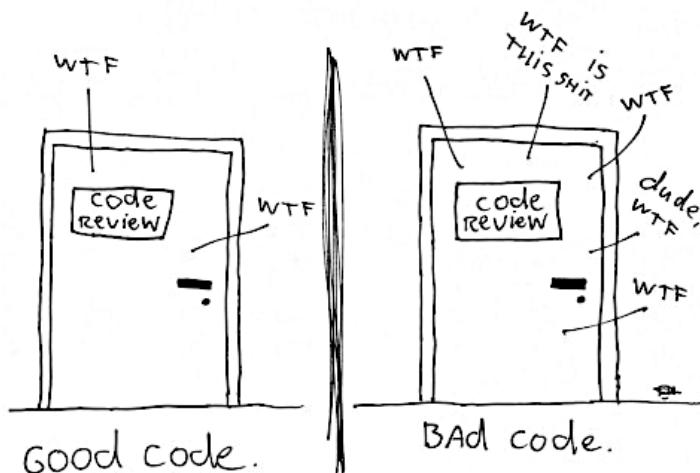
# CS314 Software Engineering

## Clean Code

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The ONLY VALID MEASUREMENT  
OF CODE QUALITY: WTFs/MINUTE



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# Code Climate Maintainability

- complexity (cognitive or boolean logic)
- duplicate code (identical or similar)
- lengths (file and method)
- counts (methods, arguments, return statements)
- deeply nested control structures

## Cognitive complexity of a method

- language shorthand collapsing multiple statements
- breaks in the line flow of the code.
  - loops
  - conditionals and sequences of logical operators
  - switch or case statements
  - recursion
  - exception handling
- nesting of flow breaking instructions.

# Write clean code (Better Code Hub)

- Clean code is maintainable code
- Leave no trace
  - no unit level smells (size, complexity, interfaces)
  - no bad comments
  - no code in comments
  - no dead code
  - no long identifier names
  - no magic constants
  - no poorly handled exceptions

```
// db configuration information
private final static String myDriver = "com.mysql.jdbc.Driver";
private final static String myUrl = "jdbc:mysql://faure.cs.colostate.edu/cs314";
// SQL queries to count the number of records and to retrieve the data
private final static String count = "";
private final static String search = "";
// Arguments contain the username and password for the database
public static void main(String[] args){
    try {
        Class.forName(myDriver);
        // connect to the database and query
        try (Connection conn = DriverManager.getConnection(myUrl, args[0], args[1]));
            Statement stCount = conn.createStatement();
            Statement stQuery = conn.createStatement();
            ResultSet rsCount = stCount.executeQuery(count);
            ResultSet rsQuery = stQuery.executeQuery(search)
        ) {
            printJSON(rsCount, rsQuery);
        }
    } catch (Exception e) {
        System.err.println("Exception: "+e.getMessage());
    }
}
```

```
String query = "";
public static void main(String[] args){ // args contain username and password
    String myDriver = "com.mysql.jdbc.Driver"; // add dependencies in pom.xml
    String myUrl = "jdbc:mysql://faure.cs.colostate.edu/cs314";
    try { // connect to the database
        Class.forName(myDriver);
        Connection conn = DriverManager.getConnection(myUrl, args[0], args[1]);
        try { // create a statement
            Statement st = conn.createStatement();
            try { // submit a query
                ResultSet rs = st.executeQuery(query);
                try { // iterate through the query results and print selected columns
                    while (rs.next()) {
                        String id = rs.getString("id");
                        String name = rs.getString("name");
                        System.out.printf("%s,%s\n", id, name);
                    }
                } finally { rs.close(); }
            } finally { st.close(); }
        } finally { conn.close(); }
    } catch (Exception e) { // catches all exceptions in the nested try's
        System.err.printf("Exception: " + e.getMessage());
    }
}
```

