



salesforce



Detect duplicate code in Salesforce

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How to Copy & Paste

1. Identify a working piece of existing code
2. Copy it
3. Paste it somewhere else
4. Repeat as much as needed



Why do developers Copy & Paste?

1. Faster delivery of business requirements
2. Fewer obvious defects (at first) – code has been tried and tested elsewhere
3. Why write new code when it has already been done before?
4. Less dependencies! Lower chance that someone is going to change your code in future.



Why should developers not Copy & Paste?

1. Errors and defects in the original code will propagate throughout your code base
2. Increase in overall LOC (Lines of Code) in your solution will contribute to corresponding increased maintenance costs



Original code fragment

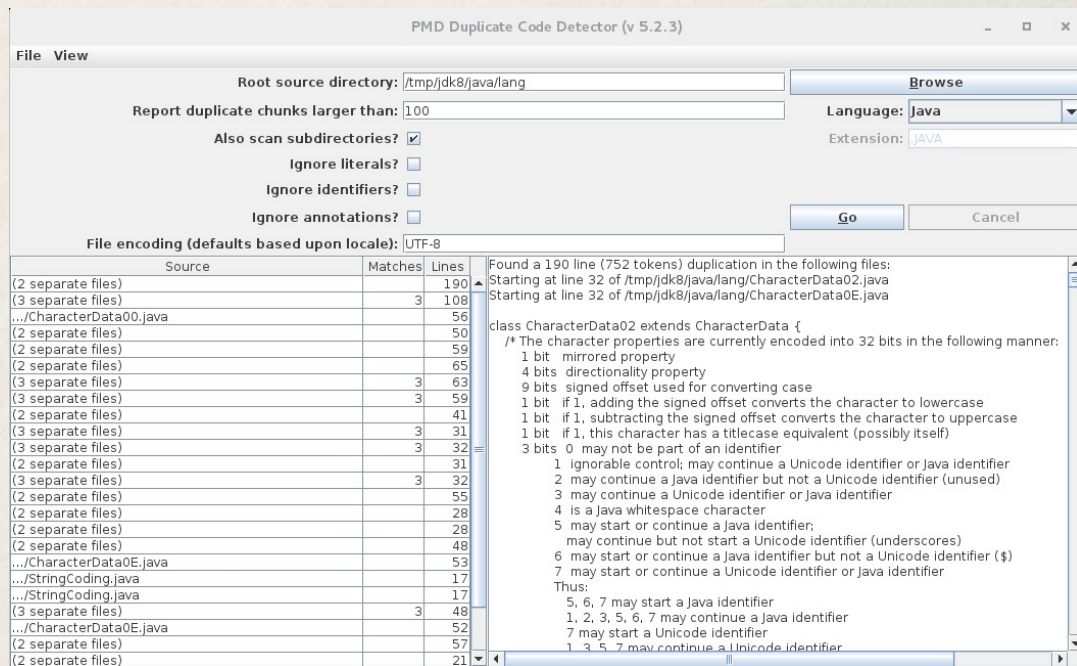
Repetitive code should be refactored

1. Single place in code base to fix defects
2. Refactored code becomes more reliable over time
3. New functionality can be delivered faster by virtue of existing good quality functions
4. Fewer LOC makes solution quicker to read and understand



Solution – Copy Paste Detection Tool!

- Run against your code base
- Run against your team's Pull requests - Does new code have copy and paste instance?



PMD CPD

- Open Source Project
- Java tool – runs on Windows, Mac, Linux
- <https://pmd.github.io/>
- Command line and GUI
- CPD finds duplicated code in
 - Salesforce Apex
 - Salesforce Visualforce
 - JavaScript
 - Also: Java, C, C++, C#, Groovy, PHP, Ruby, Fortran, JavaScript, PLSQL, Apache Velocity, Scala, Objective C, Matlab, Python, Go and Swift.



Demo



File View

Root source directory: /Users/andrew/source/CPDExample/CPDExample/force-app/main/default

Report duplicate chunks larger than: 25

Also scan subdirectories? ☒

Ignore literals? ☐

Ignore identifiers? ☐

Ignore annotations? ☐

Ignore usings? ☐

Ignore literal sequences? ☐

File encoding (defaults based upon locale): UTF-8

Source Matches Lines

EXPLORER

- CPDEXAMPLE
 - .sfdx
 - .vscode
 - config
 - force-app/main/default
 - applications
 - aura
 - classes
 - LoanCalculateHome.cls
 - LoanCalculateHome.cls-meta.xml
 - contentassets
 - flexipages
 - layouts
 - lwc
 - objects
 - permissionsets
 - staticresources
 - tabs
 - triggers
 - manifest
 - scripts
 - .eslintrignore
 - .forceignore
 - .gitignore
 - .prettierrignore
 - .prettierrc
 - jest.config.js
 - package.json
 - README.md
 - sfdx-project.json
- OUTLINE
- RUNNING TASKS
- NPM SCRIPTS

LoanCalculateHome.cls

```
force-app > main > default > classes > LoanCalculateHome.cls > ...
1 public with sharing class LoanCalculateHome {
2
3     // Calculate the loan
4     public static Double calculate(Double loanAmount, Integer years) {
5
6         Double yearlyRate = 4.5;
7
8         return LoanCalculateHome.getInterest(loanAmount, yearlyRate,
9         years);
10    }
11
12    // Get the interest on a loan (simple)
13    public static Double getInterest(Double principle, Double
14    yearlyRate, Integer years) {
15
16        Double result = principle * yearlyRate * years;
17        result = result / 100;
18
19        return result;
20    }
}
```

TERMINAL COMMENTS OUTPUT ... Salesforce CLI

```
LoanCalculateCar ApexClass force-app/main/default/classes/LoanCalculateCar.cls
LoanCalculateCar ApexClass force-app/main/default/classes/LoanCalculateCar.cls-meta.xml
10:51:04.704 sfdx force:source:delete --sourcepath /Users/andrew/source/CPDExample/CPDExample/force-app/main/default/classes/LoanCalculateCar.cls --noprompt
ended with exit code 0
```

Ln 10, Col 1 Spaces: 4 UTF-8 LF Apex Apex PMD ✓

- Get this deck : <https://github.com/andrewwhitten/Presentations>
- LinkedIn : <https://www.linkedin.com/in/andrew-whitten-8835b8/>





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Thank You!

