Cochange in a same commit: c1 to c20

|  |  |  |  |
| --- | --- | --- | --- |
| **Clone Detection Tools** | **Detected Cochange by Clone Detection Tools** | **Cloned Cochnage** | **Detection Accuracy** |
| **deckard** | c1, c3, c5, c6 | c1 to c10 | 4/10 |
| **nicad5** | c2, c3, c4, c6, c7 | 5/10 |
| **conqat** | c1, c3, c4, c9 | 4/10 |
| **simcad** | c1, c10 | 2/10 |
| **iclones** | c1, c8, c9 | 3/10 |
| **simian** | c1, c2 | 2/10 |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Subject Systems** | **Total**  **Changes** | **Total Number of**  **Cloned Cochange** | **Average Detection Accuracy** | | | | | |
| **ConQAT** | **DECKARD** | **iClones** | **NiCad** | **SimCAD** | **Simian** |
| Brlcad | 2103 | 13821 | 0.4 | 0.4 | 0.36 | 0.15 | 0.21 | 0.33 |
| Carol | 3299 | 69454 | 0.2 | 0.54 | 0.11 | 0.27 | 0.27 | 0.09 |
| Ctags | 533 | 1963 | 0.23 | 0.28 | 0.12 | 0.49 | 0.08 | 0.16 |
| Freecol | 7514 | 246083 | 0.15 | 0.71 | 0.07 | 0.09 | 0.11 | 0.06 |
| Jabref | 6011 | 79417 | 0.16 | 0.69 | 0.11 | 0.15 | 0.15 | 0.09 |
| jEdit | 3603 | 160689 | 0.11 | 0.74 | 0.06 | 0.19 | 0.1 | 0.04 |

Good clone detector should be good in detecting cloned cochange also.

Motivation: A good clone detector may not be good in detecting cloned cochange.

Why Deckard is performing well in detecting cloned cochange.

Most of the earlier research, we proved Nicad is good, but why Nicad is not working good in detecting cloned cochange.

**Number of detected clones is huge in Deckard,**

|  |  |  |  |
| --- | --- | --- | --- |
| **Ranking Overall** | **Accuracy in Detecting Cloned Co-change** | **Number of Average Fragments Detected by Revisions** | **Total Number of Lines Covered in Final Version of Software System** |
| 1 | DECKARD | DECKARD | ConQAT |
| 2 | ConQAT | ConQAT | DECKARD |
| 3 | NiCad | SimCAD | SimCAD |
| 4 | SimCAD | iClones | Simian |
| 5 | iClones | Simian | NiCad |
| 6 | Simian | NiCad | iClones |