

Implications OSS-Projects

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Appendix A. Instabilities of the releases of open-source projects

Table A.1: Instabilities of Catroid releases

| Open-source project | Instability of the complete project | Instability of removed classes and dependencies | Instability of new classes and dependencies | Numbers of classes (ARCADE) | Number of edges (ARCADE) |
|---------------------|-------------------------------------|---|---|-----------------------------|--------------------------|
| v-0.8.0 | 0.583446 | 0.019218 | 0.443996 | 1273 | 9483 |
| v-0.8.1 | 0.583446 | 0.000000 | 0.000000 | 1273 | 9483 |
| v-0.8.2 | 0.583446 | 0.000000 | 0.000000 | 1273 | 9483 |
| v-0.8.3 | 0.574862 | 0.045065 | 0.000000 | 1185 | 8940 |
| v-0.8.4 | 0.574862 | 0.000000 | 0.000000 | 1185 | 8940 |
| v-0.8.5 | 0.574862 | 0.000000 | 0.000000 | 1185 | 8940 |
| v-0.9.0 | 0.583432 | 0.001093 | 0.038825 | 1280 | 9910 |
| v-0.9.1 | 0.583432 | 0.000000 | 0.000000 | 1280 | 9910 |
| v-0.9.2 | 0.583432 | 0.000000 | 0.000000 | 1280 | 9910 |
| v-0.9.3 | 0.583432 | 0.000000 | 0.000000 | 1280 | 9910 |
| v-0.9.4 | 0.583432 | 0.000000 | 0.000000 | 1280 | 9910 |
| v-0.9.5 | 0.584576 | 0.002431 | 0.011141 | 1293 | 10075 |
| v-0.9.6 | 0.584576 | 0.000000 | 0.000000 | 1293 | 10075 |
| v-0.9.7 | 0.584576 | 0.000000 | 0.000000 | 1293 | 10075 |
| v-0.9.8 | 0.584576 | 0.000000 | 0.000000 | 1293 | 10075 |
| v-0.9.9 | 0.572358 | 0.000000 | 0.057827 | 1428 | 10837 |
| v-0.9.10 | 0.572358 | 0.000000 | 0.000000 | 1428 | 10837 |

Table A.2: Instabilities of SonarQube releases

| Open-source project | Instability of the complete project | Instability of removed classes and dependencies | Instability of new classes and dependencies | Numbers of classes (ARCADE) | Number of edges (ARCADE) |
|---------------------|-------------------------------------|---|---|-----------------------------|--------------------------|
| v-3.5.1 | 0.728642 | 0.000000 | 0.000000 | 850 | 6706 |
| v-3.6.3 | 0.697173 | 0.480047 | 0.486024 | 895 | 7761 |
| v-4.0 | 0.678030 | 0.482271 | 0.619212 | 2603 | 24567 |
| v-4.1.2 | 0.678030 | 0.000000 | 0.000000 | 2603 | 24567 |
| v-4.2 | 0.678030 | 0.000000 | 0.000000 | 2603 | 24567 |
| v-4.3.3 | 0.678030 | 0.000000 | 0.000000 | 2603 | 24567 |
| v-4.4.1 | 0.689527 | 0.000000 | 0.151058 | 3139 | 31168 |
| v-4.5.7 | 0.671354 | 0.450541 | 0.048888 | 1263 | 8987 |
| v-5.0.1 | 0.671386 | 0.000000 | 0.000720 | 1264 | 8993 |
| v-5.1.2 | 0.666268 | 0.000960 | 0.011650 | 1298 | 9259 |
| v-5.2 | 0.662149 | 0.003558 | 0.010581 | 1316 | 9352 |
| v-5.3 | 0.661456 | 0.000000 | 0.000000 | 1317 | 9354 |
| v-5.4 | 0.661819 | 0.000890 | 0.004957 | 1335 | 9479 |
| v-5.5 | 0.677134 | 0.020844 | 0.007809 | 1301 | 9143 |
| v-5.6.7 | 0.676179 | 0.000000 | 0.000000 | 1303 | 9168 |
| v-6.0 | 0.676201 | 0.000000 | 0.000000 | 1303 | 9168 |
| v-6.1 | 0.676852 | 0.000990 | 0.000000 | 1301 | 9140 |

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Table A.3: Instabilities of dex2jar releases

| Open-source project | Instability of the complete project | Instability of removed classes and dependencies | Instability of new classes and dependencies | Numbers of classes (ARCADE) | Number of edges (ARCADE) |
|---------------------|-------------------------------------|---|---|-----------------------------|--------------------------|
| v-0.7.11 | 0.666050 | 0.000000 | 0.002854 | 487 | 3460 |
| v-0.9.0 | 0.661154 | 0.069955 | 0.110580 | 522 | 3703 |
| v-0.9.1 | 0.660097 | 0.004604 | 0.000000 | 520 | 3701 |
| v-0.9.2 | 0.659782 | 0.000000 | 0.002424 | 521 | 3724 |
| v-0.9.3 | 0.653877 | 0.059905 | 0.010646 | 496 | 3619 |
| v-0.9.4 | 0.655405 | 0.007449 | 0.041372 | 514 | 3799 |
| v-0.9.5 | 0.652549 | 0.002825 | 0.401039 | 1122 | 10732 |
| v-0.9.6 | 0.652543 | 0.000000 | 0.000000 | 1122 | 10735 |
| v-0.9.7 | 0.632887 | 0.097456 | 0.015328 | 1007 | 9839 |
| v-0.9.8 | 0.635631 | 0.000000 | 0.021564 | 1030 | 10118 |
| v-0.9.9 | 0.635815 | 0.000000 | 0.001138 | 1031 | 10146 |
| v-0.9.10 | 0.637224 | 0.004219 | 0.010685 | 1038 | 10259 |
| v-0.9.11 | 0.637337 | 0.001022 | 0.001095 | 1038 | 10274 |
| v-0.9.12 | 0.637418 | 0.000000 | 0.002022 | 1043 | 10339 |
| v-0.9.13 | 0.636851 | 0.001172 | 0.002499 | 1045 | 10359 |
| v-0.9.14 | 0.635152 | 0.001291 | 0.003644 | 1050 | 10393 |
| v-0.9.15 | 0.633606 | 0.017039 | 0.000000 | 1028 | 10199 |
| v-2.0 | 0.629441 | 0.173259 | 0.211976 | 1132 | 11544 |

Table A.4: Instabilities of Hadoop releases

| Open-source project | Instability of the complete project | Instability of removed classes and dependencies | Instability of new classes and dependencies | Numbers of classes (ARCADE) | Number of edges (ARCADE) |
|---------------------|-------------------------------------|---|---|-----------------------------|--------------------------|
| v-0.8.0 | 0.693054 | 0.000000 | 0.000000 | 1282 | 10968 |
| v-0.9.0 | 0.693054 | 0.000000 | 0.000000 | 1282 | 10968 |
| v-0.10.1 | 0.675264 | 0.001280 | 0.210366 | 1697 | 15776 |
| v-0.11.0 | 0.675264 | 0.000000 | 0.000000 | 1697 | 15776 |
| v-0.11.2 | 0.668423 | 0.118866 | 0.003067 | 1505 | 13495 |
| v-0.12.0 | 0.678582 | 0.083486 | 0.000000 | 1394 | 12147 |
| v-0.13.0 | 0.678582 | 0.000000 | 0.000000 | 1394 | 12147 |
| v-0.14.0 | 0.678041 | 0.000000 | 0.010242 | 1409 | 12232 |
| v-0.15.0 | 0.678687 | 0.000000 | 0.005233 | 1419 | 12282 |
| v-0.16.0 | 0.678687 | 0.000000 | 0.000000 | 1419 | 12282 |
| v-0.16.4 | 0.678687 | 0.000000 | 0.000000 | 1419 | 12282 |
| v-0.17.0 | 0.678687 | 0.000000 | 0.000000 | 1419 | 12282 |
| v-0.18.0 | 0.674294 | 0.001127 | 0.138945 | 1662 | 14030 |
| v-0.18.3 | 0.675071 | 0.000000 | 0.002886 | 1669 | 14123 |
| v-0.19.0 | 0.674504 | 0.001189 | 0.118946 | 1960 | 18007 |
| v-0.19.2 | 0.674743 | 0.000000 | 0.000735 | 1961 | 18007 |
| v-0.20.0 | 0.684535 | 0.514648 | 0.006231 | 628 | 4892 |