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| **Data Extraction Form** | | | | | | | | | | | | | | | | | | | | | | | |
| **Title** | Towards a Classification of Bugs to Facilitate Software Maintainability Tasks | | | | | | | | | | **Authors(s)** | | Mathieu Nayrolles and Abdelwahab Hamou-Lhadj | | | | | | | | | | |
| **Year** | 2018 | | | | | | | | | | **Venue** | | * **Journal** | | * Conference | | | | | * Other \_\_\_\_\_\_\_\_\_\_ | | | |
| **Quality Assessment criteria** | | | | * **QC1** | | | | * **QC2** | | | | | * QC3 | | * QC4 | | | | | * **QC5(Partial)** | | | * **QC6** |
| **Inclusion Criteria** | | | | * IC1 | | | | * **IC2** | | | | | * **IC3** | | | * **IC4** | | | | * **IC5** | | | |
| **Exclusion Criteria** | | | | * EC1 | | | * EC2 | | * EC3 | | | | * EC4 | * EC5 | | | | | * EC6 | | * EC7 | | |
| **Approach Used**   * Classification of bugs into four types based on their locations. * Type 1 bugs are the ones that fixed by modifying a single location in the code. * Type 2 refers to bugs that are fixed in more than one location. * Type 3 refers to multiple bugs that are fixed in the exact same location. * Type 4 is an extension of Type 3, where multiple bugs are resolved by modifying the same set of locations. | | | | | | | | | | **Type of Solution** | | | | | | | | **Yes** | | **No** | | **Unclear** | |
| Novel Technique (Method, Tool, Technique) | | | | | | | | Check mark, Wingdings font, character code 252 decimal. | |  | |  | |
| Evaluation of existing techniques  (Evaluation framework, tool, platform) | | | | | | | |  | | Check mark, Wingdings font, character code 252 decimal. | |  | |
| Supporting techniques | | | | | | | |  | |  | | Check mark, Wingdings font, character code 252 decimal. | |
| **Review dataset** | | **Total number of apps** | | | | 2(NetBeans and Apache Software Foundation project) | | | | **Evaluation Method Used** | | | | | | | | Classification of bugs into four types based on their occurring locations | | | | | |
| **Total number of crawled reviews** | | | | N/A | | | |
| **Year** | | | | 2016 | | | |
| **Research Type Facet**   * Validation Research * **Evaluation Research** * **Solution Proposal** * Philosophical Papers * Opinion Papers * Experience Papers | | | | | **Solution Type**   * **Single** * Hybrid/Integrated | | | | | | | **Contribution**   * **Technique** * Tool * Comparison * Model * Framework * Prototype * Taxonomy | | | | | **Evaluation Strategy**   * Case Study * **Controlled Experiment** * Survey * Questionnaire | | | | | | |
| **Features used**   * **Categorical** * Textual * Both. | | | | | | |
| **Factors Considered** | | | Bugs from two datasets. | | | | | | | | | | | | | | | | | | | | | |
| **Notes** | | |  | | | | | | | | | | | | | | | | | | | | | |
| **Limitations** | | | * Only applied on two limited datasets * Aim is to not improve testing but to propose a classification that can allow researchers in the field of mining bugs | | | | | | | | | | | | | | | | | | | | | |
| **Description / Summary** | | | After examining more than 100 thousand bug reports of 380 projects, they found that bugs can be classified into four types based on the location of their fixes. Type 1 bugs are the ones that fixed by modifying a single location in the code, while Type 2 refers to bugs that are fixed in more than one location. Type 3 refers to multiple bugs that are fixed in the exact same location. Type 4 is an extension of Type 3, where multiple bugs are resolved by modifying the same set of locations. | | | | | | | | | | | | | | | | | | | | | |