


An Empirical Validation of the Complexity of Code Changes and Bugs in Predicting the Release Time of Open Source Software

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With the increasing popularity of open source software, the changes in source code are inevitable. These changes in code are due to feature enhancement, new feature introduction and bug repair or fixed. It is important to note that these changes can be quantified by using entropy based measures. The pattern of bug fixing scenario with complexity of code change is responsible for the next release as these changes will cover the number of requirements and fixes. In this paper, we are proposing a method to predict the next release problem based on the complexity of code change and bugs fixed. We applied multiple linear regression to predict the time of the next release of the product and measured the performance using different residual statistics, goodness of fit curve and R². We observed from the results of multiple linear regression that the predicted value of release time is fitting well with the observed value of number of months for the next release.

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