USING TIME SERIES MODELS FOR DEFECT PREDICTION IN SOFTWARE RELEASE PLANNING

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by

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ABSTRACT

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To produce a high-quality software release, sufficient time should be allowed for testing and fixing defects. Otherwise, there is a risk of slip in the development schedule and/or software quality. A time series model is used to predict the number of bugs created during development. The model depends on the previous numbers of bugs created. The model also depends, in an exogenous manner, on the previous numbers of new features resolved and improvements resolved. This model structure would allow hypothetical release plans to be compared by assessing their predicted impact on testing and defect-fixing time. The VARX time series model was selected as a reasonable approach. The accuracy of the model varies for different sampling periods, window sizes, and degree of differencing.

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