EMPIRICAL TEST DESIGN STRATEGIES USING NATURAL LANGUAGE PROCESSING

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Abstract. Software testing is defined as an activity to check whether the actual results match the expected results and to ensure that the software system is defect free. It involves generating test cases from requirements and execution of a software component or system component to evaluate one or more properties of interest. But as the complexity of the product increases, the generation of test cases becomes tedious and time consuming. Our proposed system aims at automating the generation of test cases from requirements using Natural Language Processing and hence reducing the time consumed. Our system seeks to provide a comprehensive environment, to be accessed by both end users and developers. End users input the bugs/issues that they have identified, where the system prompts similar pre-existing issues and the requirement not satisfied as well. There exists a sentence similarity LSTM model at the core of the system, that identifies the relationship between the input and stored data. The data used to develop the model, was obtained from the Stanford nlp snail project. Thus the three tasks to be performed by the system is 1. Identify similar issues and intimate the user, 2. Identify the requirement not satisfied by identified issue, 3. Generate Test Case that must be run by developer before closing the issue.