Specific Reasons Behind Missing Bugs During Code Review

1 Problem Statement

The subject matter of my project will be Code Review. It is a very important systematic examination phase of software development system where program source codes are reviewed for correcting errors before deploying or merging to project's master repository. There have been many researches being continued on this topic and on various dimensions of it. One dimension is failure to detect and remove bugs by the code reviewers. So while reviewing codes reviewers are sometimes unable to detect errors and vulnerabilities of these errors. And there have been researches on to what extent these failures of the code reviewers have occured and through those researches we also got some quantitative estimates of the percentage of buggy reviews.

Now, since we have got those quantitative data on frequency of buggy review now my focus regarding that problem is why reviewers miss those bugs. While estimating the number of buggy reviews the researchers also pointed out some probable reasons behind those oversights but I want to determine exactly for what reason a specific bug got overlooked. Furthermore I want to find out the other details of the reviewer for example – the reviewers experience as a reviewer, previous background, work schedule, work load, responsibilities etc. This information will lead me to the exact reason and factors behind missing those errors.

2 Motivation for the project

Code review at an early stage of development is relatively inexpensive and tends to reduce the more expensive process of handling, locating and fixing bugs during later stages of development or after programs are delivered to the users. So it is a crucial responsibility of a reviewer to detect those errors and reviewers' failure to do so will cause a great deal of difficulty. Therefore it is an important issue that why those mistakes occur. In previous papers the percentage of buggy review was quite alarming. So it is quite important that what factors initiated those oversights. If those factors or reasons can be found out then it is also possible that percentage of buggy reviews can be minimized. That is the main motivation that the findings would lead the whole software industry to a wide range of concerns and they can become more prudent or alert and look for amendments. The exact reasons of making mistakes will assist in finding the ways of overcoming those mistakes.

3 Set of Objectives

First of all I will go through all the papers related to this topic just to get to know about the previous researches that was conducted regarding code review quality. Then I will focus on that paper mainly where the authors found out the percentage of buggy review. I will collect the data sets that they worked on. I will get to know about the repositories from which they collected data. Then I will get to know about the data mining tools that they worked on. After getting all these information I will look for any other better tools .If not found I shall continue with what the previous authors used. Then I will fetch the data and look for those specific reviewers who missed the bugs ,their background, history and the definite causes of missing those bugs . After getting these information I shall form a statistical representation of those result.