Concordia University

SOEN 6411

SOFTWARE MEASUREMENT

Team Members:

Asifali Dauva: 6756239

Ankita Mishra: 6776973

Nikita Parashar: 6766994

Pradeep Samuel: 6934153

Question 1.) Does fixing a bug introduce more bugs or reduces it? This question will answer the stability of the system.

Outcome measure: After a change (fixing a bug) there should not be any triggering effect on any part of the code which may introduce more defects.

Direct measures:

1. Consistently the same file is being modified as part of different issues. Which can be derived by analyzing the review logs.

2. Historical records of bugs on a module level.

Confounds: We will also include controlling measures such as the complexity of the code and Number of lines of code (in each module) to control.

1. The file houses one of the core/important functionality.
2. The file contains complex code that causes more frequent changes.

Hypothesis: Changing a file frequently increase the number of bugs and make the system unstable.

Question 2) Does increase in defect resolution time decrease the Defect age* ?

Defect age* = The time period (duration) for which the defect remains in the system. Basically, the difference in time when the defect is first reported and the time when it is resolved and released.

Outcome measure: As a project manager of Chromium, it is important for us to understand whether providing faster resolution of defects will decrease the defect age and thereby improve quality and customer satisfaction.

Direct measures:
1) Number of defects.
2) Time to resolve defects.

Confounds:
1. Code review time.
2. Priority of defects.

We suspect that an increase in the defect resolution time will decrease the defect age and thereby increase quality and customer satisfaction.

Hypothesis: Increasing the defect resolution time will decrease defect age in the system.

Question 3.) Does increase in code review time increases release time of a milestone?

Outcome measure:
1) Code review time for bugs.
2) Time gap between release of consecutive milestones.

Direct measures:
1. Time difference between the code review time and total bug fix time for each bug.
2. Time gap between release of consecutive milestones.

Confounds:
1. Reviewer is not assigned.
2. Previously raised issues are blocking the code review process.
3. Number of bugs in each milestone.

Hypothesis:
Longer code review time leads to increase in the time of release of a milestone.