# SOEN 6611 - WINTER 2015

# Extracting and Linking Attributes

## Assignment #2

**3/8/2015**

## Team

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# Goal and Question

Quality Attribute- Maintainability

Does the priority of issues affect their resolution rate?

It is important for a project manager to know whether or not the high priority issues are fixed more frequently than low priority ones. Our outcome measure is the number of fixed bugs, total number of bugs and their priority level. Direct measure is the ratio of number of fixed bugs to the number of total bugs for each priority level. Controlling measures such as prevention of coding mistakes and increasing code reviews can be used to control the confounds. Increased level of expertise of developers will lead to higher number of fixed high priority issues.

*Hypothesis- The ratio of number of fixed bugs to total number of bugs reported is higher for lowest priority bugs than for highest priority bugs.*

# Extracting Attributes

We have extracted the following three attributes to help answer our question

| # | Attribute | Explanation |
|---|-----------|-------------|
| 1. | Bugid | This attribute identifies each bug uniquely, i.e. it acts as the primary key in our table |
| 2. | Status | We need this attribute to extract those bugs for which 'Status' is 'Fixed' |
| 3. | Pri | This attribute indicates the priority level of the corresponding bug. It may have one of the four values i.e. 0,1,2,3, where 0 signifies the highest priority issues and 3 signifies the lowest priority ones. We need this attribute in order to group resolution rate of bugs by their 'Priority' level |

# Linking Attributes

For each bug, there is a unique Bugid, a status and a priority. By referencing to the Bugid of a bug, we can determine it's status. After selecting the bugs having status as 'Fixed', we link every 'Fixed' bug with the level of priority (Pri).

- Database used- sqlite
- We created the database "**chrome_issues**" using sqlite manager and table named "**chrome**"

- Imported the attributes in the table

# Result & Conclusion

The following table summarizes the results after linking the three attributes we used to answer our question

| Priority | # of fixed bugs | Total # of bugs | Ratio (Fixed/Total) |
|----------|-----------------|-----------------|---------------------|
| 0 | 292 | 572 | 0.51 |
| 1 | 4842 | 9881 | 0.49 |
| 2 | 15941 | 28854 | 0.55 |
| 3 | 1945 | 3314 | 0.58 |

The above table proves our hypothesis:-

*'The ratio of number of fixed bugs to total number of bugs reported is higher (0.58) for lowest priority (3) bugs than (0.51) for highest priority (0) bugs.'*