# List of Figures

<table>
<thead>
<tr>
<th>Figure #</th>
<th>Description</th>
<th>Page #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figure 1.1</td>
<td>Categories of Software</td>
<td>2</td>
</tr>
<tr>
<td>Figure 1.2</td>
<td>Process Model for F/OSS Development</td>
<td>9</td>
</tr>
<tr>
<td>Figure 1.3</td>
<td>F/OSS Development Team Structure</td>
<td>11</td>
</tr>
<tr>
<td>Figure 1.4</td>
<td>The Classification of F/OSS Users and Developers</td>
<td>12</td>
</tr>
<tr>
<td>Figure 2.1</td>
<td>F/OSS Defect Management Process</td>
<td>22</td>
</tr>
<tr>
<td>Figure 2.2</td>
<td>Defect Life Cycle Model</td>
<td>23</td>
</tr>
<tr>
<td>Figure 2.3</td>
<td>A GUI in Defect Management System</td>
<td>25</td>
</tr>
<tr>
<td>Figure 3.1</td>
<td>Experience of Respondents in Software Industry</td>
<td>37</td>
</tr>
<tr>
<td>Figure 3.2</td>
<td>Team Size among various Project Size Categories</td>
<td>37</td>
</tr>
<tr>
<td>Figure 3.3</td>
<td>Number of Users among various Project Size Categories</td>
<td>38</td>
</tr>
<tr>
<td>Figure 3.4</td>
<td>Release Frequency among various Project Size Categories</td>
<td>39</td>
</tr>
<tr>
<td>Figure 3.5</td>
<td>Average Code Change among Various Projects</td>
<td>39</td>
</tr>
<tr>
<td>Figure 3.6</td>
<td>Consistency in Recording Defects among Project Size Categories</td>
<td>41</td>
</tr>
<tr>
<td>Figure 3.7</td>
<td>Completeness in Recording Defects among Project Size Categories</td>
<td>42</td>
</tr>
<tr>
<td>Figure 3.8</td>
<td>Rating of Users Participation for Bug Identification among Project Size Categories</td>
<td>44</td>
</tr>
<tr>
<td>Figure 3.9</td>
<td>Rating of Users Participation for Feature Request among Project Size Categories</td>
<td>44</td>
</tr>
<tr>
<td>Figure 3.10</td>
<td>Rating of Users Participation for Patch Submission among Project Size Categories</td>
<td>45</td>
</tr>
<tr>
<td>Figure 3.11</td>
<td>Defect Resolution Period by Defect severity</td>
<td>46</td>
</tr>
<tr>
<td>Figure 3.12</td>
<td>Average Percentage of Unresolved Defects among Project Size Categories</td>
<td>48</td>
</tr>
<tr>
<td>Figure 4.1</td>
<td>Entity-Relationship Diagram</td>
<td>53</td>
</tr>
<tr>
<td>Figure 4.2</td>
<td>Defect Data Extraction and Analysis Process</td>
<td>54</td>
</tr>
<tr>
<td>Figure 4.3</td>
<td>DART Login Screen</td>
<td>55</td>
</tr>
<tr>
<td>Figure 4.4</td>
<td>DART Defect Type Statistics Project Selection</td>
<td>56</td>
</tr>
</tbody>
</table>
Figure 4.5  DART Defect Type Statistics Report 56
Figure 4.6  DART Defect Statistics (Fixed/Non Fixed) Project Selection 57
Figure 4.7  DART Defect Statistics (Fixed/Non Fixed) Report 57
Figure 4.8  DART Core Team Vs Users Participation Project Selection 58
Figure 4.9  DART Core Team Vs Users Participation Report 58
Figure 4.10 DART Cumulative Defect Statistics Report 59
Figure 4.11 DART Defect Resolution Period Report 59
Figure 5.1  Defect Arrival Trend in F/OSS Projects (1-3) 68
Figure 5.2  Defect Arrival Trend in F/OSS Projects (4-6) 69
Figure 5.3  Aggregate Defect Arrivals of 20 F/OSS Projects Together 69
Figure 5.4  Defect Distribution in F/OSS Projects (1-5) 70
Figure 5.5  Defect Distribution in F/OSS Projects (6-10) 71
Figure 5.6  Mean Distribution of Defects among F/OSS Projects 71
Figure 5.7  Defect Distribution (Status Wise) in F/OSS Projects (1-5) 72
Figure 5.8  Defect Distribution (Status Wise) in F/OSS Projects (6-10) 73
Figure 5.9  Mean Defect Distribution (Status Wise) in F/OSS Projects 73
Figure 5.10 Mean Distribution of Ineffective Defects in F/OSS Projects 74
Figure 5.11 User Participation in Defect Reporting in F/OSS Projects (1-5) 75
Figure 5.12 User Participation in Defect Reporting in F/OSS Projects (6-10) 75
Figure 5.13 Core Team Vs Other Users Participation in Defect Reporting 75
Figure 5.14 Anonymous Vs Registered Users Participation in Defect Reporting 76
Figure 5.15 Contribution in Defect Reporting (User Type Wise)
Figure 5.16 Users Participation (Regularity) in Defect Reporting among F/OSS Projects (1-5)
Figure 5.17 Users Participation (Regularity) in Defect Reporting among F/OSS Projects (6-10)
Figure 5.18 Mean Users Participation (Regularity) in Defect Reporting
Figure 5.19 Continuous and Efficient Defect Resolution
Figure 5.20 Continuous and Inefficient Defect Resolution
Figure 5.21 Discontinuous and Efficient Defect Resolution
Figure 5.22 Discontinuous and Inefficient Defect Resolution
Figure 5.23 Aggregate Pending Defects for 20 F/OSS Projects Together
Figure 5.24 Gradual Increases and Steep Decreases in Pending Defects
Figure 5.25 Backlog Management of Defects (Good)
Figure 5.26 Backlog Management of Defects (Improved Later)
Figure 5.27 Backlog Management of Defects (Poor)
Figure 5.28 Software Release and Backlog Management of Defects (Webmin)
Figure 5.29 Software Release and Backlog Management of Defects (NSIS)
Figure 5.30 Defect Resolution Age (Near to Constant Trend)
Figure 5.31 Defect Resolution Age (Increasing Trend)
Figure 5.32 Scatter Plot of Resolution Age
Figure 5.33 Distribution of Resolution Age
Figure 5.34 Defect Distribution Resolution Age Wise (Webmin)
Figure 5.35 Defect Distribution Resolution Age Wise (NSIS)
Figure 5.36 Defect Resolution Time Distribution (Webmin)
Figure 5.37 Defect Resolution Time Distribution (NSIS)
Figure 5.38 Defect Resolution Fix/Non-Fix (Gallery)
Figure 5.39  Defect Resolution Fix/Non-Fix (NSIS) 95
Figure 5.40  Defect Pending Age - Pending Age Wise (Privoxy) 97
Figure 5.41  Defect Pending Age - Linear Trend (Privoxy) 97
Figure 5.42  Defect Pending Age - Pending Age Wise (Webmin) 98
Figure 5.43  Defect Pending Age - Linear Trend (Webmin) 98
Figure 5.44  Defect Resolution - Defect Type Wise (SquirrelMail) 100
Figure 5.45  Defect Resolution - Defect Type Wise (NSIS) 100
Figure 5.46  Average Pending Age - Defect Type Wise (Gallery) 101
Figure 5.47  Average Pending Age - Defect Type Wise (PDFCreator) 101
Figure 5.48  Contribution in Defect Resolution (User Type Wise) 102
Figure 5.49  Users Participation (Regularity) in Defect Resolution of F/OSS Projects (1-5) 103
Figure 5.50  Users Participation (Regularity) in Defect Resolution of F/OSS Projects (6-10) 103
Figure 5.51  Mean Users Participation (Regularity) in Defect Resolution 104
Figure 6.1  Proposed Process Diagram (Defect Management) 119