Abstract

Software quality based applications development is the main concern is user satisfaction. It increases the reliability and efficiency of information retrieval and management. As the bundle of code created day by day the repository storing such code is regularly migrates the older code in to legacy systems. To develop and facilitate new object oriented model based application with improved problem solving capabilities such code has to be re-factored and reused effectively. The legacy systems have the collection of both the types of the code: procedural and object oriented. The procedural code is converted into object oriented code by using the phenomenon of re-engineering and the object oriented code database is searched for reusable code components. Thus to make the effective and timely detection of such reusable components tools is required. All the existing tools for such detection use various metrics for measuring and analysis of compatibility, price and development effort required to re-engineer those components. Also the current system will only focuses on using cohesion and coupling based metrics. But accuracy is the problematic issues in all of them because of their few metrics usage conditions. This work proposes a novel RUCM (Reusability Utility Count Model) for analyzing the reusability value. It takes various key features of code for calculating the above. The work focuses on satisfying the quality attributes by applying all the modularity principles in metrics design and measurement. To do that effectively this work had developed
six composite metrics: LOC, LMD, MD, DOC UOS, and IC. In its primary work level the proposed approach seems to provide effective results in near future.

References

- Andreas S, Evigoni D Reiner D, Erik F and Micheal W, "Conception and Experience of metrics based software reuse in practice", Published in International Workshop of Software and Maintenance (WSM99), Sep 1999. pp 178-189
- Benjamin Van Ryseghem, Stephane Ducasse and Johan Fabry, "A Framework for the Specification and Reuse of UIs and their Models", Published in International Workshop on Smalltalk Technologies (IWST 12), ACM 2012.
- Nasib S. Gill, "Reusability Issues in Component-Based Development", in Department of Computer Science & Applications, M. D. University, Rohtak, Haryana (India).
- Hani Abdeen, Houari Sahraoui, Osama Shata, Nicolas Anquetilz and Stephane Ducasse, "Towards Automatically Improving Package Structure While Respecting Original Design Decisions", in Research Grant NPRP grant #09-1205-2-470 from the Qatar National Research Fund, Qatar University, Qatar.
- Fernando Britoe Abreu and Rogério Carapuça, "Candidate Metrics for
- Philip Newcomb, &quot;Reengineering Procedural Into Object-Oriented Systems;&quot; in IEEE, ISSN: 0-8186-7111-4, 1995. pp 237-249
- K. K. Aggarwal, Yogesh Singh, Arvinder Kaur and Ruchika Malhotra, &quot;Software Reuse Metrics for Object-Oriented Systems;&quot; in Conference on Software Engineering Research, Management and Applications (SERA'05) By IEEE, ISSN: 0-7695-2297-1/05, 2005.
- Amit Sharma, Sanjay Kumar Dubey, &quot;Comparison of Software Quality Metrics for Object-Oriented System;&quot; in International Journal of Computer Science & Management Studies (IJCSMS), ISSN (Online): 2231 –5268, Special Issue of Vol. 12, June 2012.

Index Terms

Computer Science

Software Engineering

Keywords
<table>
<thead>
<tr>
<th>RUPM (Reusability Utility Count Model)</th>
<th>Object Oriented UOS (Understandability of Software)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complexity</td>
<td>IC (Interface Complexity)</td>
</tr>
<tr>
<td>DOC (Degree of Cardinality)</td>
<td></td>
</tr>
<tr>
<td>LMD (Low Modification Degree)</td>
<td></td>
</tr>
<tr>
<td>ALOC</td>
<td></td>
</tr>
<tr>
<td>MD (Modularity Degree)</td>
<td></td>
</tr>
<tr>
<td>Cohesion</td>
<td></td>
</tr>
<tr>
<td>Coupling;</td>
<td></td>
</tr>
</tbody>
</table>