Reengineering Framework for Open Source Software using Decision Tree Approach

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| **Article Info** |  | **ABSTRACT** |
| ***Article history:***  Received Jan 9, 2018  Revised Nov 27 ,2018  Accepted Dec 20,2018 |  | A Software engineering is an approach to software development. Once software gets developed and delivered, it needs maintenance. Changes in software incur due to new requirements of the end-user, identification of bug in software or failure to achieve system objective. It has been observed that successive maintenance in the developed software reduces software quality and degrades the performance of software system. Reengineering is an approach of retaining the software quality and improving maintainability of the software system. But the question arises “when to reengineer the software”. The paper proposed a framework for software reengineering process using decision tree approach which helps decision makers to decide whether to maintain or reengineer the software systems. |
| ***Keyword:***  Reengineering  Decision Tree  Maintainance  Complexity Metric  Software Engineering |
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1. **INTRODUCTION**

**1.1 Background :**

Changes in software due to user requirements, faults or due to technology change are very frequent. The need of customer or client may get changed as per business requirements. New changes may introduce new challenges to the developer. To adapt these changing requirements software needs to maintain again and again. According to Lehman [1] frequent changes increase the complexity of software. Summerville [2] stated that aging of program results in increase in maintenance cost which further degrade the program structure and it becomes harder to understand and change. There are various complications in upgrading the legacy systems also [3] . Reengineering is defined as reconstitution of an existing system [4], system changing activity [5], reconstruction or reworking on part or all of the legacy system [6] and aimed to Improve the quality of software [7].

**1.2 Problem:**

Very important and crucial decision is whether a software must be further maintained or whether it must be reengineered. Reengineering aimed to enhance the quality of software and the increasing the software maintainability [7] .Another question is what metric or parameter can be used for this decision making.