Requirement Prioritization Based on NonFunctional Requirement Classification Using Hierarchy Analytic Hierarchy Process

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Abstract:

This Requirement prioritization is the process in requirement engineering which in one stage in SDLC. Requirements engineering process aid to increase the excellence of software systems. Software system requirements are often classified as functional requirements (FR) or non-functional requirement (NFR). To produce a high-quality software system, both functional and non-functional requirement must be considered during requirement prioritization process. Most of the existing requirement prioritization method is only considering functional requirements since but neglecting the effect of NFR on specified FR. The aim of this paper to propose requirement prioritization technique that embed the nonfunctional requirements using existing RALIC dataset.Implementation of this paper, RALIC dataset hierarchy (a) use pairwise comparison and consistency ratio check for accuracy. Classified the percentage of NFR for hierarchy (a). Hierarchy (a) pairwise comparison result of weights (a.1) was (0.60) which is highest prioritized. Classified the NFR for hierarchy (a) requirements was efficiency (60%), security was (31%) and usability was (11%). Efficiency was the highest in hierarchy (a). Oppositely, highest percentage of NFR for hierarchy (a to j) was Portability requirement (92%) from hierarchy (e). The finding, when make the pairwise comparison for hierarchy (a to j) requirements input was (15, 051), in contrast, hierarchically pairwise comparison for (a to j) requirements input was (403). Therefore, hierarchically comparison can be reduced the number of requirements (97.33 %).

Keywords - Requirement prioritization; ahp; hierarchy ahp, non-functional requirement; pairwise comparison; ralic dataset.