Abstract

Risk analysis is traditionally considered a critical activity for the whole software system's lifecycle. Risks are identified by considering technical aspects (e.g., failures of the system, unavailability of services, etc.) and handled by suitable countermeasures through a refined design. A modified Tropos goal model was developed in which the evidence of satisfaction and denial of the goal is calculated from the likelihood of the events corresponding to the goals. Relations are defined between multiple goals and events, which define the importance of a particular goal. The event may be considered as a risk according to their likelihood value. So the inter relation values of the goals and events gives the impact of that event on the particular goal. In order to analyze the risk in achieving some particular goals, a set of candidate solutions are generated. The candidate solutions are evaluated on the basis of a risk affinitive value of the goals according to their events. The risk affinitive value is calculated from the different set of risk parameters, which is set like high, medium and low. The risk parameters clearly evaluate the affinity of that event to a particular set of goals. A priority based parameter is added to the proposed approach to sort out the risk values. According to the proposed approach distinct cost to risk values are achieved. Finally, the candidate solutions with low cost are selected.
References

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**Index Terms**

- Computer Science
- Software Engineering

**Keywords**

- Requirement Engineering
- Tropos Goal model
- Candidate solutions
- Goal layer
- Event layer
- Support layer