Quality Attribute Specification Assignment

1- You are working in company XYZ required you to develop ticketing system for Cinema, the owner of Cinema is focusing on two things:
   a. Security system for purchase ticket using Credit Cards.
   b. The performance of booking tickets.

   Write scenarios for each requirement to get you client signature.

   Ans:

   a. Security system for purchase ticket using Credit Cards.
      An incorrectly identified credit card tries to access the credit cards payment service during purchasing ticket. System rejects the unauthorised credit card to continue purchasing ticket. The probability to detect unauthorised credit card owner is 99%.
   b. The performance of booking tickets.
      Users initiates 1000 transactions (booking tickets) per minute stochastically under normal condition and these transactions are processed with an average latency of 2 seconds.

2- You are working in governmental sector and your boss required you to develop architecture to remove the overhead of official stamping for the documents without losing security.

   Propose a proper architecture tactic to achieve this feature.

   Performance & Security:

   System able to manage the overhead of official stamping without losing security by authenticate and authorize the users. Only authorized users can use the e-stamping to maintain the confidentiality. Next, system can introduce concurrency on using e-stamping. System should also detect the attacks if there is any unauthorized use of stamping for documents. Furthermore, system should have the resources arbitration by follow the scheduling policy. System should recover from the attacks by using audit trail and restore the data.

3- You are working in a starting company with limited budget and your boss required you suggest some tactics to reduce the maintainability cost of the software.

   Propose three tactics for this objective.

   Modifiability: Reduce size of module by separation of concerns and modularity so that any changes can be made easily, make sure the system designed in a way of high cohesion and low coupling.

Availability: System able to detect faults using sanity check, condition checking and exception detector. Next, system need to recover from faults using exception handling, roll back or degradation. System can also prevent faults by using predictive model and exception prevention.

Testability: When there is increment of software development is completed, system need to manage input and output using record/playback and manage monitoring using built-in monitors.

- Submit your answers at in your github host.
- We will pick up randomly 5 students next session to present their answers.