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.

When a customers insert their card, the credit number must be encrypted to reduce the likelihood of credit card information being stolen

b. The performance of booking tickets.

When a customer book a ticket, the whole process must be less than 4 minutes.

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.

To achieve this feature, hash function can be implemented. A hash function is a mathematical function that converts a numerical input value into another compressed numerical value. It is often use for data integrity and often in combination with digital signatures.

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.

1) Use automatic monitoring tools that can help reduce human intervention. For example, Uptime Robot is a free tool used for monitoring websites. It can monitor the performance of websites every 5 minutes and notify if the site goes down. It can provide different types of monitoring, including HTTP(s), the keyword (checking if a keyword exists in the web page or not), port (monitoring services like DNS, pop, and SMTP), and ping (server monitoring).

2) Instant notification to teams.

   Automatic monitoring tools send notifications of uptime and downtime events. They can act as a dispatcher for these alerts and identifies the right people to notify people via email, text messages (SMS), phone calls, slack and push notifications. Notifying teams instantly via different channels can help the development team fix issues immediately, without depending on the specially skilled workers. As a result, maintenance costs can be reduced by locating and fixing problems quickly.

3) Self healing using Jenkins and continuous deployment

   When more and more routine tasks can be automated, resources and work hours can be allocated in improving its performance and infrastructure. Developing the self-healing IT infrastructure that can perform everyday tasks automatically would enhance workflows efficiently. Self-healing defines the ability of environments or systems to detect and fix issues automatically. It removes the need for human intervention so that organizations no more need to rely on humans to fix problems.