**Lab-14:** *Financial Risk System.*

Answer:

a) *Find the architectural characteristics of the ticket system?*

- ○ Availability
- ○ Scalability
- ○ Security
- ○ Maintainability
- ○ Recoverability
- ○ Testability

b) *Write one or more scenarios for each architectural characteristic*

- ○ Availability:
  - ■ Customers have to be able access the services anytime they want

- ○ Scalability:
  - ■ Should be very scalable since this is a nation wide and has to support huge user base

- ○ Maintainability:
  - ■ Everytime there is a change made or a new system is introduced the process should be easy and shouldn't affect another service

- ○ Recoverability:
  - ■ The system should take appropriate steps to recover from an error if possible, but all errors should be logged.

- ○ Security:
  - ■ This system must follow bank policy that states system access is restricted to authenticated and authorized users only.
  - ■ Reports must only be distributed to authorized users.
  - ■ Only a subset of the authorized users are permitted to modify the parameters used in the risk calculations.

c) Define your architecture in one or more diagram(s). Show as many architecturally important aspects as possible.
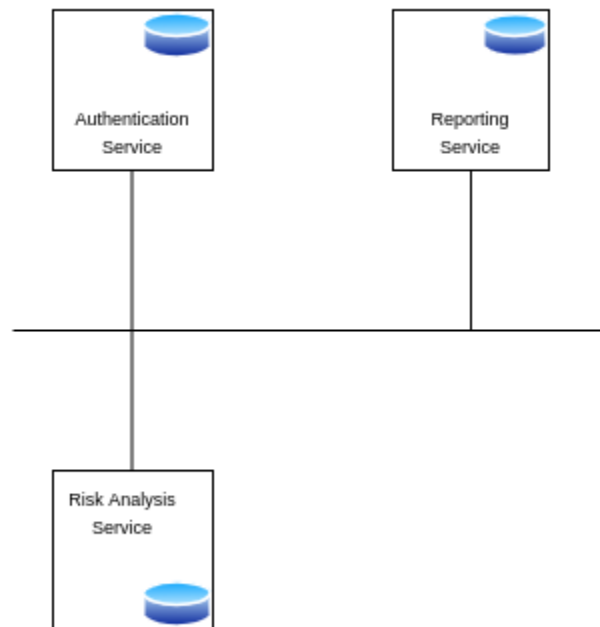
d) Find the risks of your proposed architecture.

- ○ Responsiveness risk: How many users can the server handle at once.
- ○ Failover risk: Can the data be stored

e) Find options to mitigate the risks you found in part.

- ○ Responsiveness risk mitigation:
  - ■ CQRS for better performance or event driven architecture to make it asynchronous.
- ○ Failover risk mitigation:
  - ■ Kafka: with event-sourcing for data retention.