1. Fikir Walle 610120

way to improve software Qualities

A, **performance**

1 Compressed data can improve the application's speed

Compression can significantly improve application performance. In fact, can reduce the HTML, CSS, JavaScript, and other text-based contents' required bandwidth by more than 30 percent and reduce application load-time as an effect.

2 Distribute Traffic with a Load Balancer

A load balancer works by distributing traffic across servers. In fact, load balancers can improve user experience on poorly written web apps that might have problems with scaling with growing traffic, without any alterations to the app or servers.

3 Deliver Content Faster by Caching

Caching makes your app content delivery faster.

Using faster devices to store your content,

Making content available faster when demanded,

Using content delivery networks (CDN) to store content closer to your users

B Scalability

Offload the database – stay away from the database as much as possible. That means don't open connections to it and don't start transactions unless you have to.

C Availability

1 Implement Geographic Redundancy
Host the application in at least two different geographies, preferably close to where your customers or end-users are.

2 Provide excellent support
Always take care of your customers well. When an organization outsources, one of the biggest hesitations is the fear that all control will be lost, and that support will be extremely painful and time consuming.

3 Ensure Automatic Failover
Hopefully it goes without saying that the redundant hardware in point #1 should be configured active/active or N+1 and continue working flawlessly if a component or even a link between them fails

D Maintainability

Refactor code to improve its understandability

Relevant documentation helps developers understand the software
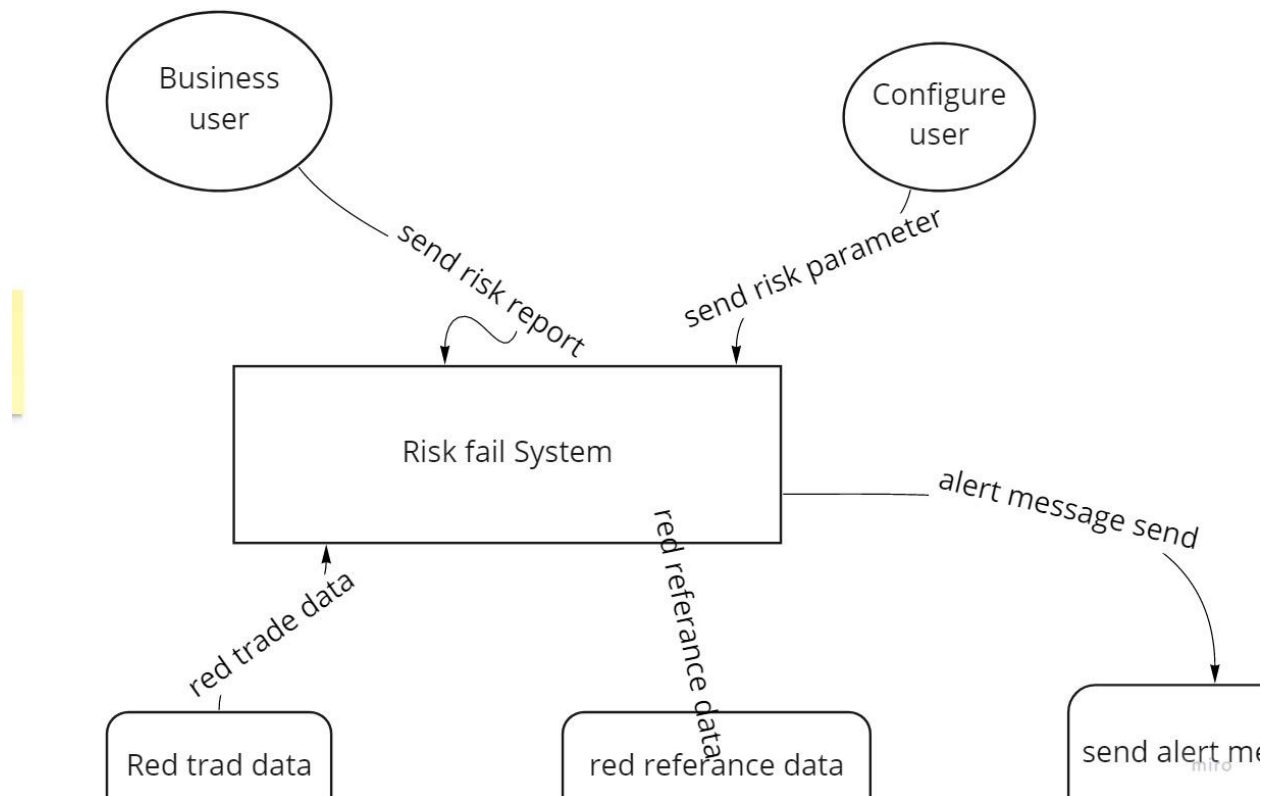
Automated build makes the code easy to compile

Automated tests make it easy to validate changes

E Reliability

Failover

Monitor the health of a system

2 context Diagram

B Component Diagram

usines
user

https

web applications

Configur
e user

https

store
report
logs

DBMS

red and write files

red data

red data

trade
data
system

e
rs

file System

referance
data system

miro

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●
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▼
┌─────────────────────────────────┐
│  read trade data from file system │
└─────────────────────────────────┘
│
▼
┌─────────────────────────────────┐
│   read counterparty data from file │
│              system              │
└─────────────────────────────────┘
│
▼
┌─────────────────────────────────┐
│   merge trade and counterparty   │
│              data                │
└─────────────────────────────────┘
│
▼
┌─────────────────────────────────┐
│   calculate risk per counterparty │
└─────────────────────────────────┘
│
▼
┌─────────────────────────────────┐
│         create risk report       │
└─────────────────────────────────┘
│
▼
┌─────────────────────────────────┐
│         archive risk report      │
└─────────────────────────────────┘
│
▼
┌─────────────────────────────────┐
│    send mail to every business   │
│               user               │
└─────────────────────────────────┘
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○
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Risk progressi | Risk parameter | risk calcual | risk report genr | Busines user

1 generate report

getparameter()

3calcualte Risk

4 calcualate Report

5 GetallUser()

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