Sacco System (Leo Aikawa)

To summarize your problems:

* security
* big database
* massive user at the same time
* speed

 I considered from this 4 point and tried to choose

1. Your system architecture
2. Language/framework choice(s) and reasons

Client-side: React based on javascript

Reason

* Compared to other frontend frameworks, the React code is easier to maintain and is flexible due to its modular structure. This flexibility, in turn, saves huge amount of time and cost to businesses.
* It helps to build rich user interfaces

Today, the quality of the user interface in an application plays an important role. If the user interface is poorly designed, then it lowers the chances of an application to succeed.

* It offers fast rendering

When you’re building a complex, high-load app, it becomes mandatory to define the structure of the app in the beginning since it can impact the performance of your app. In simple words, the DOM model is tree-structured. So, a minor modification at a higher level layer can awfully impact the user interface of an application. To solve this, Facebook has introduced a virtual DOM feature.

* It is SEO-friendly

For any online business, search engine optimization is the gateway to success. [According to Moz](https://moz.com/learn/seo/page-speed), the lower the page load time and the faster the rendering speed, the higher an app will rank on Google.

Thanks to the fast rendering, React, compared to other frameworks, significantly reduces the page load time, which greatly helps businesses in securing the first rank on Google Search Engine Result Page

* Strong community support

Like Angular, React also has very strong community support, which is one of the main reasons to adopt React JS in your project.

Every day, a large number of individual React developers are contributing towards making React a better frontend framework. Currently, React JS has attained [136,079 stars on Github](https://github.com/facebook/react) and 1,331 regular contributors.

* Conclusion

It is used by many fortune 500 companies

Check out some inspiring examples of React solutions. Thousands of companies, including some Fortune 500 companies, have chosen React JS for their websites and mobile apps.

Airbnb, Tesla, Tencent QQ, and Walmart are among the top brands that built their mobile apps using the React Native framework.

React web framework, on the other hand, is currently being utilized by famous companies including Netflix, Paypal, NASA, BBC, Lyft, and New York Times to name just a few.

Server-side: Spring framework based on java

Reason

* Spring is secure

Provides a robust mechanism to develop authentication and authorization for projects based on Spring in a highly customizable manner. With minimal declarative support, we get protection against common attacks like session fixation, click-jacking, and cross-site request forgery.

* Maturity

Spring has a long history of innovation, adoption, and standardization. Over the years, it's become mature enough to become a default solution for most common problems faced in the development of large scale enterprise applications.

* Spring is fast

you’ll notice fast startup, fast shutdown, and optimized execution, by default. Increasingly, Spring projects also support the [reactive](https://spring.io/reactive) (nonblocking) programming model for even greater efficiency.

* Spring is flexible

Spring’s flexible and comprehensive set of extensions and third-party libraries let developers build almost any application imaginable. At its core, Spring Framework’s [Inversion of Control (IoC)](https://en.wikipedia.org/wiki/Inversion_of_control) and [Dependency Injection (DI)](https://en.wikipedia.org/wiki/Dependency_injection) features provide the foundation for a wide-ranging set of features and functionality. Whether you’re building secure, reactive, cloud-based microservices for the web, or complex streaming data flows for the enterprise, Spring has the tools to help.

* Community support

Last but not least, any framework or even library survive the industry through innovation and there's no better place for innovation than the community. Spring is an open source led by Pivotal Software and backed by a large consortium of organizations and individual developers.

This has meant that it remains contextual and often futuristic, as evident by the number of projects under its umbrella.

1. Database choice and reasons

Database must be combination of sql and nosql

Firebase is horizontally scalable; MySQL is vertically scalable. Firebase uses key-value, wide-column, graph, or document stores; MySQL is table-based. Firebase has dynamic schemas to facilitate unstructured data; MySQL has predefined schemas.

One of the big problem is big data from massive user and big session from massive active users at the same time.

Data type in the website with big community has very various.

So we can use both Nosql and mysql.

1. Hosting choice and reasons

For choosing hosting server you should focus on 3 points

- best security

- best storage space and speed

- location of hosting server (recommend server in south africa)

What should I look for in a secure host?

* An included SSL certificate, or the option to purchase one easily
* The ability to process secure credit card payments
* Two-factor authentication to protect website and server logins
* The option to upgrade to a more secure managed hosting environment
* Inclusion of the SiteLock security tool that scans for malware and vulnerabilities
* Email anti-spam protection included
* Bundled automated backups and system restore points
* Regular network monitoring for unusual site traffic activity
* Ability to assign user permissions on a site and server level

I think goDaddy is suitable.

1. Security considerations

Most important thing of Sacco system is security.

* Keep software and plugins up-to-date
* Check bot user and fake user
* Check trying bot login
* Add https and an ssl certificate
* Choose smart password.
* User secure web host
* Record user access and administrative privileges
* Change your cms default settings
* Back up your website
* Know your web server configuration file
* Apply for a web application firewall
* Tighten network security

1. Consideration for scaling system

Maintaining website is more important and need hard work.

* Database structure

We must use both sql and nosql.

Tables in SQL Database should be automatically divided by year or month for big data

Ex. Loan\_2022\_9

Loan\_2022\_10

We must use nosql for documented data, image …

* Physical Database server

Every year the server for database is added.

We can combine the physical data server.