Dictionary MUM

Description: Web app for Increasing the Vocabulary of the user and providing dictionary functionalities including Meaning, Example, Synonyms, Antonyms, etc to the user.

Target: US market and the whole world later.

Scope: Up to 1 million users According to 2018 reports.

Cost Calculation: Assuming the 10,000 users above with 0.5GB perusers = 5,000 GB or 5 TB, we may need 2x servers with 4x 2TB SATA disks each (2TB * 4 Disks * 2 servers) gives you 16TB raw capacity. Cut that in half for redundancy and availability, and we have 8TB usable. If the cost of that server is $3000, then you have got $6000 serving 10,000 active users.

System Architecture: Depending on geographically distributed system we will structure our servers according to population density. For instance, we will have more servers in Chicago that Iowa city because the number of users is bigger alongside getting the benefits of CDN to serve the users. The below structure will be for each region in US.

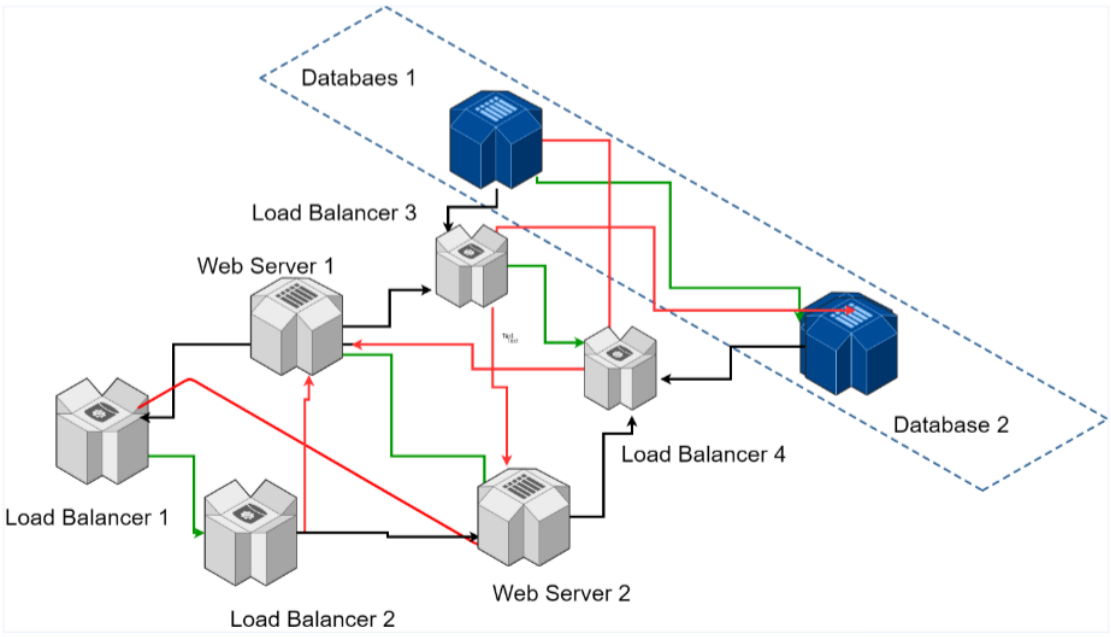

Figure 1:Node of System Structure

This structure will avoid a single point of failure and support high availability all the time. Even if a natural disaster occurs users will be served by another node inside the same region.

Technology Stack: All our technologies will be in the MVC model. Because it supports flexibility and open-closed principle which is suitable for our target of scalability.

Specifically, we use **Servlet** as the backend side of the website and **HTML, CSS (BOOTSTRAP), JSP** for the front end. We are using **MYSQL** as our Database. And also using third party's API named **WORDAPI** which gives us the possible data we need in order to search the meaning. We implement our whole model in MVC model. Furthermore, in the future we will get the benefits of the cross-

platform JavaScript, which allow us to run application in different platforms like Android and IOS as a web view application using PhoneGap or other technologies.

Finally, we select our technologies for many factors. But the most important ones are suitability, scalability, support, and flexibility.