

## **Prototype 2 Report**

After improving upon the architecture of prototype 1, there are new strengths and weaknesses that relate to prototype 2.

The first strength of prototype 2 is that data that is collected from the OpenWeatherApp, is now stored in a MySQL database. This means if OpenWeatherApp was down for maintenance, prototype 2 would be able to display its most recently stored data. This is a strength because it also means that the app no longer needs to access the OpenWeatherApp every time the app is loaded, it can instead load the most recent data from the database.

Another strength I have found, is that prototype 2 is ran on a server (mi-linux). This is because prototype 2 is now based on a server, alongside the database, meaning it can be accessed from anywhere on any device. Servers are also a lot more reliable and therefore less likely to be unavailable/inaccessible. This also means that prototype 2 can load faster than prototype 1 if there is recent data in the database, as the database is stored on the server which is based here in the U.K, instead of in Germany, where the data is collected from the OpenWeatherApp.

A third strength of prototype 2's architecture, is that if it were to become popular, it would be able to handle the high volume of users. This is because the data stored in the database, if recent enough, will be displayed, before data is fetched from the OpenWeatherApp API which only allows 60 clicks per minute.

There are also still weaknesses associated with prototype 2. The first weakness is the cost. Servers are expensive, they cost a lot of money to own, and servers usually charge people to have their websites and information stored on them. A further weakness to this, is that accessing prototype 2 now requires constant access to the server, so each time someone loads it, it is contacting the server in order to display the page.

Another weakness is the fact that information is still being sourced from the OpenWeatherApp API, it is just being stored in a database instead. This means if OpenWeatherApp was to shut down permanently, or go down for maintenance long term, prototype 2 would only be able to show the most recent data in the database.

The third weakness is that prototype 2 requires constant server access, as both prototype 2 and the database are stored on the mi-linux server, meaning that if there was a server issue, prototype 2 would become inaccessible. This also relates to another weakness, security. Due to prototype 2 now being located on a server, if the server was to fall victim to a cyber-attack or was hacked into, prototype 2 and its information could also be at risk.

In order to improve upon prototype 2, prototype 3 could include browser caching. This would mean that the data from the app is stored in a cache on the user's device, which will subsequently improve loading and response times for prototype 3. Another improvement would be the inclusion of a secondary API so that if OpenWeatherApp is inaccessible, and new data is needed, prototype 3 will contact a different API in order to gather the information.