A web database of transcription factor and its binding sites

This report specifies a rough plan for building a database of transcription factor and its binding sites with structural information. The content of the database will be published through our web server. According to different functionality that is to be achieved, the work is divided into four stages as described in the following.

First stage – demo

At this stage, a small database containing only a few transcription factors’ information will be built as a demo of what the big picture will look like when the whole work is done. Technology of MySQL, Apache, and PHP will be used at this stage to complete the work of constructing a demo website which will be hosted on my local machine (Figure 1). The demo website will be presented and discussed to confirm what functions the web server should eventually provide.

Figure 1 Framework of the web server.
**Second stage – alpha version**

At this stage, a database that contains at least two types of data that we have access to will be built and all the desired functionalities that were confirmed at the first stage will be implemented. After this stage, a functional database-driven website should be completed and can be internally used and tested within the lab. Still, MySQL, Apache, and PHP are the technologies to be used (Figure 1).

**Third stage – beta version**

The aim of this stage is to provide the public a beta version website that is not only functional with data up to date, but also user friendly. So more data will be added to the database and the technology CSS will be used in combination with MySQL, Apache, and PHP to provide dynamically generated user friendly web pages (Figure 2).  

*Figure 2 Framework of the web server in beta version.*

**Fourth stage – enhanced user experience**

There are two aims for this stage. One is to debug problems found for the beta release of our website. The other is to enhance the user experience of our website. More specifically, to enhance the user experience, client-side programming will be added. And particularly, the
technology JavaScript will be adopted to provide users enhanced experience in using our web server (Figure 3).

Figure 3 Framework of the final web server.