Tools & Technologies

**Web Hosting:**

The deployment and hosting of the web site for our application will be handled by Heroku. Our initial plan was to have our web hosting with Netlify. However, Netlify only offers a service for static web pages which would not be appropriate for our application. We require the hosting of a dynamic web application, and after researching this we found that Heroku is the best option for this. Heroku is a cloud-based application hosting service similar to Netlify, but it allows developers to run their application across a preset number of virtual servers known as “Dynos”. Dynos are Heroku’s version of containerisation, which is a type of software virtualisation system that allows multiple applications to share the same physical hardware. (1. SearchITOperations *What Are Containers (Container-based Virtualization or Containerization)?*, 2020)

Heroku offers an efficient and complete hosting service which is cost-effective and dynamic. Some of the features their service includes are, the management of releases by rolling out your application to different environments, ensuring your application automatically recovers from server failures, and handling load balancing across many application instances, allowing you to instantly scale your application. (2. Heroku.com *What is Heroku | Heroku*, 2020)

Heroku supports all the most common application programming languages such as Ruby, Node.js, Python, Java, Go, PHP, and Scala. Deployment through GitHub is also available. This provides easy deployment of existing applications on Heroku with minimum modifications needed. (2. Heroku.com *What is Heroku | Heroku*, 2020)

Heroku offer a number of different service packages, the first three would be of interest to our application. They are:

1. “Free/Hobby” A service for small scale applications, personal projects and testing.

2. “Production” For larger scale business-focused applications that require greater bandwidth and support.

3. “Advanced” For mission-critical business web applications that require high availability and can handle a high volume of traffic.

Within each of these packages we can choose different levels services such as RAM, storage and connections. Initial development and testing of our web application would be implemented with the “Hobby” package. This provides basic application hosting and includes 512MB of RAM which would be sufficient to allow us to test and develop the application before full deployment. Once our web app is fully deployed, we would need to initially upgrade to the “Production” package which starts at US$25 per month. This package offers an increased access bandwidth and many other additional included features. The amount of RAM assigned to your app is variable but obviously has a greater cost when more RAM is used. This package would be sufficient for most of our usage. It would only be when we reached a high level of customer requests that we would need to move to the next package. With this in mind, Heroku’s service is scalable, which means that we can easily increase or decrease the level of service that we require. This will make it necessary for us to regularly monitor our applications level of usage and determine if changes to our package are required. The “Advanced” package is a lot more expensive, starting at US$250 a month, but it would always be necessary to upgrade to the higher service when demand increases because slow application response times will negatively impact the customers experience. (3. Heroku.com *Pricing | Heroku*, 2020)

References:

1. SearchITOperations. 2020. *What Are Containers (Container-Based Virtualization Or Containerization)?*. [online] Available at: <https://searchitoperations.techtarget.com/definition/container-containerization-or-container-based-virtualization> [Accessed 28 November 2020].
2. Heroku.com. 2020. *What Is Heroku | Heroku*. [online] Available at: <https://www.heroku.com/what> [Accessed 28 November 2020].
3. Heroku.com. 2020. *Pricing | Heroku*. [online] Available at: <https://www.heroku.com/pricing> [Accessed 28 November 2020].