**Assessment – REST API Questions**

**1) Explain the purpose of a web server (software)**

The purpose of the web server is to serve resources to the user’s browser. These resources can be things such as static HTML files, data from a database, files and other such content distributed via web pages. The web server will implement a protocol called HTTP (hypertext transfer protocol) or its secure equivalent (HTTPS) to respond to the client’s requests. Other protocols a web server may implement could be FTP (file transfer protocol) for uploading and downloading files or SMTP (simple mail transfer protocol) for handling email for example.

**2) Explain some other options for handling authentication**

a) Basic authentication

Basic authentication requires a user’s credentials (username/password) as the method of identifying the user on the server. This method is considered weak in terms of security as credential data can be intercepted via hacking methods.

Security can be improved by implementing a tokenized system such as JWT where a unique secure (encrypted) string based upon a ‘secret’ is passed instead of the credentials and is decrypted on the server.

b) OAuth

OAuth is an open standard protocol that allows unrelated servers and services to safely authenticate using their security without sharing their credentials.

For example, using OAuth, I can log onto a (say) ticket booking website using my google or Facebook account instead of signing up directly to the websites own security protocols. Here, it would be my google/Facebook which authenticates me onto their site.

c) AWS Cognito

AWS/Amazon Cognito is “a simple user identity and data synchronization service that helps you securely manage and synchronize app data for your users across their mobile devices”.

Unique identities can be created for the users through public login providers and also supports unauthenticated ‘guests’.

**3) Evaluate the use of Express.JS vs using core Node.js modules.**

Express is an open source back-end framework for building web applications and (REST) APIs and it is used for amongst many things, the routing of http requests. Though it would be possible to develop such a framework from scratch using out of the box Node and JavaScript modules, it would take a significant amount of effort and skills to do so. Since Express.JS is considered the ‘de-facto standard server framework’ for Node.JS, which has already been written, tested and debugged it makes economic sense to implement the Express framework as part of your back-end rather than build it yourself.