Assignment 2 – Part 2

2.

Due to the functionality of our network application, using a standard network protocol would not meet the needs of the application. Since our network application design specifies that we would need to be able to send data types like strings, Booleans, and integers/doubles, we would need to use a network protocol that supports this. The protocol would also need to support the type of connections that need to be formed in order for the nodes to communicate. Our application also needs to communicate over TCP/IP networks so standard protocols that run over the UDP, like TFTP would not suffice. Existing standard protocols like SMTP, TFP, NFS, and TELNET simply deal with different types of communications (i.e. emails, files, or server commands over virtual terminals). Our design requires a two-way connection to be formed, jobseekers will send data to the jobcreator (job status and results), while jobcreators will send data to the jobseekers (job description). A standard protocol like HTTP would not work as it’s a unidirectional service where the client sends a request for web elements from a server. HTTP would not allow the jobseekers to send the job status/results to the jobcreators. Our application needs to be able to form connections that can either remain open or be closed upon assignment of a job. Since HTTP is stateless, the connection would be closed after the job type is delivered. The WebSocket protocol is stateful, meaning that the connection would be maintained until closed by either node, as WebSocket saves the information of past client requests. Both would not work as different job types would need the protocol to be stateless, while others would require it to be stateful, and both HTTP and WebSocket only handle one case. Thus, the creation of a new network application protocol is needed to fit the applications requirements.