# Lab 3 Questions

1. **XML is also used as another widely used data exchange format. please have a comparison between the two and pinpoint the differences and similarities. Would you still use JSON over XML or not?**

I very much prefer JSON because it has multiple advantages over XML. It is smaller, easier to read for humans and simpler to parse for a computer because of its structure. There are many XML parsers freely available but same thing goes for JSON. However, XML can be a bit more flexible in certain cases since it is easier to add attributes etc. Another big advantage for JSON is that is more or less the same as JavaScript objects. Since JavaScript is the language of the web and JSON/XML are often used for communicating data between computers and over a network, JSON can be very simple to use.

1. **What does web application deployment mean? What pieces of information do you think a web server needs to run a web application?**

Before deploying your web application to a production server, you need to consider a few things. How much traffic to you expect to be able to handle? Do you have the hardware and network capacity to meet this? Will your software scale? Can/should the production server handle power outages or hardware failure?

How do you want to administer the application and measure usage? Does the production server support this?

If the production server is different from the developer server, you need to ensure that the production server has support for the required dependencies that your app uses. Twiddler for example uses sqlite, Flask, Python, gevent websockets and more.

1. **Is it possible to have two way communication without using WebSocket protocol? Please elaborate your answer.**

It is, though it seems like WebSockets are here to stay. They are widely used. Regular HTTP only supports communication initiated by the client, but since the server very much can reply to client requests, it might be considered two-way communication. The client can then poll the server at regular intervals to check for updates.

Another alternative is to use HTTP Streaming which actually is more widely supported than WebSockets. One of the problems with HTTP Streaming is that when sending information from the client to the server, HTTP requires a full round trip (WebSockets don’t). HTTP streaming is today more used for multimedia that uses a TCP connection.