# Homework 6 Client server model Answers

1. A dynamic web page has been developed to allow users to see which seats for a concert performance have been booked and which are still free.
   1. The WebSocket protocol is used. Explain why this is useful when tickets are   
      selling quickly. [2]

Server can send updated information as it changes in real-time;

This ensures the client booking the tickets has a true indication of

which seats have been booked;

* 1. Explain how WebSocket improves the responsiveness of the web page   
     compared to using the HTTP protocol. [3]

Messages are accepted by default at either end;

(Frame) header data is greatly reduced;

A persistent interface is created for the duration of the connection; fewer security checks on packets;

meaning faster data transfer;

* 1. The web page interacts with the database to perform CRUD operations. Identify how the four operations could interact with reservations in the ticket database. [4]

1 mark for each point:

CREATE – Adds a new ticket reservation to the database

RETRIEVE – Read the details stored for a reservation

UPDATE – Changes individual details of a reservation

DELETE – Remove a reservation from the database

* 1. Using the following table, show how the HTTP methods DELETE, GET, POST and PUT can be mapped to these CRUD operations. [4]

|  |  |
| --- | --- |
| **HTTP request method** | **CRUD operation** |
| DELETE | Delete |
| GET | Retrieve |
| POST | Create |
| PUT | Update |

1. A small business is designing a new network for its office.
   1. The network manager is interested in centralising administration tasks so he does not have to install updates on individual machines.

Explain how a thin client architecture can help her. [2]

All client operations are performed on a central server;

Individual machines need less administration as the thin client has (ideally) no application programs;

The software is installed on the server so only needs to be updated once.

A very thin (“zero”) client has no operating system to administer either.

* 1. The company uses many bespoke applications that interact with the various databases they have. The following is an example of how some data are encoded:

<customer>

<customerID>AJG5787</customerID>

<customerName>Jill Turner</customerName>

<customerBirth>1980-05-04</customerBirth>

<customerMobile>07464738260</customerMobile>

<pastOrderCount>10</pastOrderCount>

</customer>

State the name of the data formatting language used to encode the data. [1]

XML

* 1. Explain **two** advantages of using JSON over XML code format. [2]

1 mark for each point (2 max) and 1 mark for explanation:

Easier to read, more compact code…;

…makes it easier for the company to modify as required;

Can be directly accessed by JavaScript…; making it easier to manipulate;

Quicker to transmit…;

…improves performance of apps that make use of this data;

Easier to create…;

…will improve development time for company;

Shorter parse time…;

…apps will be more responsive when processing the data;

[Total 18 Marks]