Assessment Information/Brief 2021/22

Module title	**Client Server Systems**
CRN	50249
Level	5
Assessment title	**Assignment 1**
Weighting within module	This assessment is worth 50% of the overall module mark.
Submission deadline date and time	**6/12/2021 by 4pm**

Module Leader/Assessment set by
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How to submit
Please read this carefully. The following items must be submitted online to Blackboard and copied to the university web server by the submission date for assessment:-

1. Your solution must be installed onto your web space on the university Poseidon server (https://poseidon.salford.ac.uk:10000/) such that the system can be tested from anywhere. Create an appropriate URL such as **http://*yourusername*.poseidon.salford.ac.uk/clientserver/**
2. A compressed .zip folder **must be submitted** to Blackboard in the Assessments area containing the complete folders and all files associated with your solution to the Assessment task – there is a typical submission limit of 50MB (The functionality will be assessed in one-to-one demonstration of your solution which will be set after the submission date).
3. A Word or .pdf document which contains a copy of the Assessment Criteria and Marking Scheme grid with your self-assessment of your performance for each requirement – use the highlighter tool in Word to highlight what you have completed. This should be included in your Blackboard submission and on your live website with a suitable URL on the website e.g. /clientserver/AssessmentCriteria.docx

Assessment task details and instructions

Your task overall for the module is to develop an online real-time friends connection system (similar to certain aspects of whatsapp, facebook and FindMy on iPone) using PHP, MySQL and HTML/CSS. The work will be split over both Trimester 1 and 2. The first trimester focuses on core architecture and data storage. The second trimester will add real-time mapping and user tracking to your application so you can track the location of your accepted friends using the

system.
Noteworthy details to gain high marks in Trimester 1 include:

- The core PHP architecture **needs** to follow an **Object Oriented Model-View-Controller** (MVC) Design Pattern approach. This is covered in the lectures and you practice it by following the workshop material. **You are not allowed to use jQuery or a high level PHP framework.** You need to use and adapt the MVC that you use in the workshops and this is **very important!**

- The system must be live and running on the university web and database servers. Typically the same system as used in the L4 Web Dev & HCI module.

- The website must allow users to sign up and login. As a **minimum** for users each record needs to include: User ID and user details. Information stored about users must include their email address, a real name, a username, and a password. All passwords must be appropriately encrypted in the database. Their record needs to contain a profile image that is uploaded when they sign up (or later). Think of this as similar to making an account on most web based forums.
  There will be a need to store user location data (latitude/longitude) for the work in Trimester 2 so think about how you will include this information in a user record and store dummy information for now.

- The website's main page should provide a listing of all registered users based on the records data stored in a database and other appropriate information. The listing should be displayed using HTML with CSS (the use of Bootstrap or Materialize frameworks is encouraged). **You are not allowed to use jQuery** because **1) you won't need to for what is required** and **2) in Trimester 2 you will need to develop raw JavaScript** in your solution and you are marked on your ability to develop and implement well designed JavaScript code.

- Anonymous (not logged in) website visitors may search for users and see some results but not be able to get any further detailed information about a user without being logged in themselves. It is suggested that anonymous users can just see the username or real name and single profile image.

- Authenticated website users should be able to search for users (by name and other metadata) and the search should be sophisticated **enough to narrow down results**.

- Authenticated website users should be able to request a friendship connection once finding a user – thus building a personal "friends list". A user who has been requested to be a friend must agree/confirm and the web site code must update a "friends list" in the database. You will need to think about multiple database tables and how **foreign keys** are used to link together users and their friends in the most effective way as well as the process of displaying friendship requests and confirming them. You will need to display the friends of a user.

- Your site must be designed and built to handle 1000s of users and friends lists and you need to demonstrate its ability by creating a large test data set (1000s of users and their records). You can generate test/mock data with a tool like www.mockaroo.com

- You must consider security and performance at every step and design the user experience for multiple platforms and abilities. For example, security should consider filtering malicious code from any text that users can enter, including client script injection and SQL injection (details on Blackboard). Performance should minimise page weight including media associated with an item description (e.g. processing uploaded images to reduce their dimensions and file size).

You are free to use *phpMyAdmin* or *MySQL Workbench (or any suitable tool)* to administer the database for example creating and populating the *MySQL* tables or handling product and stock levels. You are **not advised** to store your database locally.

Assignment 2 of this module (in Trimester 2 – January to May) will require you to focus on some aspects of your Assignment 1 system and refining them by making use of more advanced dynamic client server technologies to improve the user experience (UX) e.g. dynamic searches and real-time interaction, geolocation, imaging as appropriate all using AJAX techniques – details to follow.

Assessed intended learning outcomes

On successful completion of this assessment, you will be able to:

Knowledge and Understanding
A1 - assess a range of server-side programming technologies and the programming languages that support these technologies, and discuss the circumstances when each is used;
A2 - assess a range of client-side programming technologies and the programming languages that support these technologies, and discuss the circumstances when each is used;

Practical, Professional or Subject Specific Skills
B1 - design, create, test and demonstrate software implementing a data-driven web application, programming in industry standard scripting languages and connecting to industry standard database packages;
B2 - identify security risks in a web application, and follow good practice guidelines to minimise these.

Transferable Skills and other Attributes
B3 - work within legal constraints, such as data protection, accessibility and copyright.

Module Aims

1. to provide the skills required to develop modern data-driven interactive web applications
2. to appreciate the issues involved with combining client-side and server-side components
3. to use industry-standard software development tools and techniques.

Feedback arrangements
Feedback, and marks will be provided during one to one demonstrations of the system in January and February 2022.

Support arrangements
You can obtain support for this assessment by attending all timetabled sessions or emailing/Teams chat with the module leader. During busy parts of the teaching period email / Teams replies may take up to 3 working days.

askUS
The University offers a range of support services for students through askUS.

Good Academic Conduct and Academic Misconduct
Students are expected to learn and demonstrate skills associated with good academic conduct (academic integrity). Good academic conduct includes the use of clear and correct referencing of source materials. Here is a link to where you can find out more about the skills which students require http://www.salford.ac.uk/skills-for-learning.
Academic Misconduct is an action which may give you an unfair advantage in your academic work. This includes plagiarism, asking someone else to write your assessment for you or taking notes into an exam. The University takes all forms of academic misconduct seriously. You can find out how to avoid academic misconduct here https://www.salford.ac.uk/skills-for-learning.

Assessment Information
If you have any questions about assessment rules, you can find out more here.

Personal Mitigating Circumstances
If personal mitigating circumstances may have affected your ability to complete this assessment, you can find more information about personal mitigating circumstances procedure here.

Personal Tutor/Student Progression Administrator
If you have any concerns about your studies, contact your Year Tutor or your Student Progression Administrator.

Mark range %	100-80%	79-60%	59-40%	39-20%	19-0%
Assessment Criteria	**"A system ready to deliver to live"**  **go**	**"A usable system with useful features"** 	**"A minimum viable system"** 	**"Basic**  **data/items listings"**	**"Non-functioning system"** 
Use of Bootstrap with appropriate navigation features (10 Marks)	Considerable amount of code demonstrating very good use of Bootstrap (or other grid system)	Reasonable amount of code demonstrating good use of Bootstrap (or other grid system)	Reasonable amount of code demonstrating some use of Bootstrap (or other grid system)	Small amount of code using MVC correctly, and basic template layout.	No MVC or template layout
Well designed and appropriately populated database tables (10 Marks)	Appropriate number of tables, with relevant fields and types, complex cross-referenced using foreign keys, joins, and each populated with a large number of useful realistic records and image references (1000s)	Appropriate number of tables, with relevant fields and types, cross-referenced using foreign keys, joins, and each populated with a large number of records (1000s)	Some tables, with relevant fields and types, cross-referenced using foreign keys, and each populated with a reasonable number records (100s)	A few independent tables, with relevant fields and types, each populated with a few records (10)	Main table, with relevant fields and types, and populated with a few records.
Well designed OO code using MVC Design Pattern, with appropriate names installed on university servers (20 Marks)	Considerable amount of OO code demonstrating correct use of MVC, classes/properties and methods, using PDO to access the database. Excellently commented code. Demonstrable performance enhancements.Installed and running on the university web server and using university database server.	Reasonable amount of OO code demonstrating correct use of MVC, classes/properties and methods, using PDO to access the database. Well commented code. Implementation of performance enhancements. Installed and running on the university web server and using university database server.	Small amount of OO code demonstrating correct general use of MVC, classes/properties and methods, using PDO to access the database. Some code comments. Consideration of performance.	Small amount of OO code demonstrating limited understanding of MVC, classes/properties and methods, or database access. Basic code comments.	Very little code demonstrating no real understanding of MVC, classes/properties and methods, or database access. Little or no code comments.
Ability to create self-registration, records and login (10 Marks)	Users can register themselves and login successfully using encryption for their passwords. Anti-spam feature used. Some form of session used to maintain state. Malicious code filtering on items. Driven by excellent, logical OO design. Excellently commented code.	Users can register themselves and login successfully using encryption for their passwords. Some form of session used to maintain state. Validation on input fields. Driven by good, logical OO design. Well commented code.	Users can register themselves and login successfully. Some form of session used to maintain state.	Registration and login not fully implemented/working correctly	Registration and login not implemented, or not working
Ability to display information from records stored in the database (20 Marks)	Users can retrieve and display user details appropriate to their role, including images. Sophisticated, responsive layout using CSS/Bootstrap. Includes paging and web scraping protection. Demonstration of system with large number of realistic records/users – you can generate this data. Driven by excellent, logical OO design. Excellently commented code.	Users can retrieve and display user details appropriate to their role, including images. Good responsive layout using CSS/Bootstrap. Demonstration of system with large number of records/users – you can generate this data. Driven by excellent, logical OO design. Well commented code.	Users can retrieve some item details. Basic cellular listing layout using tables or divs with some formatting evident. Attempting display of individual items. Some code comments.	Users can retrieve some item details. Simple table or list of text data, Basic code comments.	Users cannot retrieve or display details from the database. Little or no code comments.
Ability to search for users and create/edit friends. (10 Marks)	Comprehensive, interactive faceted search to narrow down output. Complex SQL statements. Driven by excellent, logical OO design. Excellently commented code.	Free text search facility with 2 or 3 extra filters combined into search. Basic OO implementation. Well commented code.	Free text search facility working but basic. Some filters implemented, but may have issue. Some code comments.	Basic text search facility may have issues. Basic code comments.	Some search/filters partly implemented or no implementation. Little or no code comments.

Ability to create/edit friends. (20 Marks)	Users can add, view and edit items in their “friend list” – including the friend confirmation process and notification of friend requests. Driven by excellent, logical OO design. Excellently commented code.	Users can add, view items in their “friend list” – including a basic but functional friend confirmation process. A Basic OO implementation. Well commented code.	Attempt at “friend list” and process. Some code comments.	Basic “fiends list” feature but has issues.. Basic code comments.	Little or no implementation. Little or no code comments.

In Year Retrieval Scheme

Your assessment is **not** eligible for in year retrieval.

Reassessment

If you fail your assessment, and are eligible for reassessment, you will need to resubmit on or before the resit deadline in August. For students with accepted personal mitigating circumstances, this will be your replacement assessment attempt.

Reassessment details will be announced on Blackboard after June when the normal teaching period ends.

Grade Descriptors

Extremely poor (0-9).

Totally inadequate demonstration of required knowledge.

Not able to apply the practical and analytical skills from their programmes.

No appropriate design methodology.

No demonstration of analysis evaluation or synthesis.

No evidence of the ability to self-manage a significant piece of work and critical self-evaluation of the process.

Little academic value; presentation is extremely poor; work has no structure or clarity; extremely poor use of language; no references; no attempt to provide evidence of sources used.

Very Poor (10-19).

Virtually no relevant knowledge demonstrated.

Fails to adequately apply the practical and analytical skills from their programme.

Very poor use of design methodology.

No meaningful analysis or evaluation or synthesis.

Unable to self-manage a significant piece of work and to identify appropriate issues for critical self-evaluation of the process for reflection.

Academic arguments presented are inappropriate or very poorly linked; presentation is very poor; work has little discernible structure or clarity; very poor use of language; lack of ability to source adequate material; very poor referencing.

Poor (20-29).

Inconsistent or inaccurate knowledge.

Limited and inappropriate and inaccurate application of the practical and analytical skills from their programme.

Poor use of methodology.

Descriptive, occasional attempts to analysis or evaluate material but lacks critical approach to evaluation or synthesis.

Identifies issues for reflection but lacks evidence of reflective processes.

Some but inconsistent ability to self-manage a significant piece of work or critical self-evaluation of the process.

Confusion or weakness in academic argument; presentation is poor; work is disorganised and lacks clarity; poor use of language; poor use of reference material; inappropriate or out dated sources with numerous referencing errors.

Unsatisfactory (30-39).

Limited evidence of knowledge.

Inappropriate application of the practical and analytical skills from their programme.

Unsatisfactory design methodology.

Mainly descriptive evidence of analysis, inconsistent critical approach, little evaluation or synthesis.

Follows processes of reflection but fails to demonstrate insight; lacks coherence in the self-management of a significant piece of work.

Presentation is unsatisfactory; work is limited in terms of structure, coherence or clarity; limitations in academic style; unsatisfactory referencing with errors; limited ability to support content with relevant sources.

Adequate (40-49).

Basic knowledge with occasional inaccuracies.

Appropriate yet basic application of the practical and analytical skills from their programme.

Superficial depth or limited breadth, but an overall adequate identification of design methodology.

Critical analysis evident, with some evaluation and synthesis, although limited evidence of reflection.

Some evidence of an ability to self-manage a significant piece of work and critical self-evaluation of the process.

Some appropriate academic argument although not well applied and lacking in clarity; presentation of work is adequate in terms of structure, coherence, clarity and academic style; some inconsistencies; some grammar and syntax errors which detract from the content; narrow range of sources; referencing in presented work is adequate with some inconsistencies or inaccuracies; over utilises secondary sources; references used are inappropriate in terms of currency.

Fair (50-59).

Mostly accurate knowledge with satisfactory depth and breadth of knowledge.

Solid application of the practical and analytical skills from their programme

Fair use of design methodology.

Sound critical analysis and evaluation or synthesis.

Demonstrates basic ability of synthesise information in order to formulate appropriate questions and conclusions; reflective process is utilised, with insight demonstrating planning for future practice; shows the ability to self-manage a significant piece of work and critical self-evaluation of the process.

Relevant academic argument; presentation of work is fair in terms of structure coherence, clarity and academic style; some inconsistencies in grammar and syntax; fair range of sources identified with appropriate referencing and few inaccuracies; appropriate use of primary and secondary sources.

Good (60-69).

Consistently relevant accurate knowledge with good depth and breadth.

Clear and relevant application of the practical and analytical skills from their programme.

Good use of design methodology.

Clear, in depth critical analysis, evaluation and academic argument with synthesis of different ideas and perspectives.

Utilises reflection to develop self and practice; aware of the influence of varied perspectives and time frames; demonstrates an ability to self-manage a significant piece of work and critical self-evaluation of the process.

Presentation of work is well organised with good use of language to express ideas or argument; very few inconsistencies in grammar and syntax good; good range of sources; well referenced with very few inaccuracies; good use of primary and secondary sources.

Very Good (70-79).

Comprehensive knowledge demonstrating very good depth and breadth.

Clear insight into links between the practical and analytical skills from their programme.

Strong use of design methodology.

Very good analysis and synthesis of material with evidence of critical and independent thought.

Demonstrates ability to transfer knowledge between different contexts appropriately; balanced and mature approach to reflection used to enhance practice and performance; clear ability to self-manage a significant piece of work and critical self-evaluation of the process.

Presentation is of a very good standard, demonstrating a scholarly style. Very good grammar and syntax. Clear evidence of referencing to a wide range of primary and secondary sources which are used effectively in supporting the work.

Excellent (80-89).

Excellent depth of knowledge in a variety of contexts.

Coherent and systematic application of the practical and analytical skills from their programme.

Excellent use of design methodology.

Excellent critical analysis and synthesis.

Integrates the complexity of a range of knowledge and excellent understanding of its relevance; confident in their ability to self-manage a significant piece of work and critical self-evaluation of the process

Arguments handled skilfully with imaginative interpretation of material; presentation is excellent, well-structured and logical; demonstrates a scholarly style; excellent grammar and syntax.

Outstanding (90-100).

Outstanding knowledge.

Exceptional application of the practical and analytical skills from their programme.

Excellent professional execution of design methodology.

Outstanding critical analysis and synthesis.

Excels in self-managing a significant piece of work and critical self-evaluation of the process show an aptitude to formulate new questions, ideas or challenges.

Incorporates evidence of original thinking; presentation is outstanding demonstrating a fluent academic style.