Bournemouth University

Faculty of Science and Technology

Department of Computing & Informatics

Unit Title: Web Programming (COMP5009)		
Assessment Title: Web Application Development Coursework		
Unit Level: 5	**Assessment Number:** 1 **of** 2	
Credit Value of Unit: 20	**Date Issued:** 27/09/2021	
Unit Leader: Xin Lu	**Submission Due Date:** 17/12/2021	**Time:** 12:30 PM
Other Marker(s): N/A	**Submission Location:** Turnitin (+ large file submission box)	
Quality Assessor (QA): Suzy Atfield-Cutts	**Feedback Method:** Brightspace	

This is an individual assignment which carries 50% of the final unit mark.

ASSESSMENT TASK

This is an individual assignment where you are asked to develop a modern website using PHP and MySQL for the following scenario. A web development company would like to employ some computer science students to support their web development projects. You are one of these students who is working on one of these projects to build an on-line parcel tracking system. For this parcel tracking system, you need implement the following functions:

- **Customised User Interface:** The UI must contain multiple web pages and each page be usable on both a laptop and a smartphone screen through the use of responsive and adaptive design
- **User registration:** Only registered users will be able to add new content or update their existing content.
- **User authentication:** Only registered and authenticated users can update the system. Users need to login and logout for authentication with secure encryption via encoding or hashing.
- **Data persistence:** Authenticated user can save, delete and update all the parcel information such as tracking number, customer information, scanned signatures etc. in a MySQL database.
- **Listing existing information and viewing more information about an entry :** Any visitor should be able to list the available informaiton on the website and any visitor can view more about an information entry on the website.
- **Searching**: Any visitor should be able to search the parcel information on the website based on a text search.

There will be two deliverables for this assignment:

1. Technical report (30%)
2. System implementation (70%)

The technical report should include the following information:

- The logic flow of how the files are connected and related to each other
- System design
- Database design with the rationale behind it
- User interface design
- Development decisions
- Tools and methods
- Test cases with test data and results (should be added as an appendix)
- Sample data in the database (should be added as an appendix)
- Self-reflection sheet (should be added as an appendix)

The system implementation should include the basic functions listed prior and also consider the following requirements:

- Non-functional requirements should be taken into consideration such as the system should be robust, accurate and consistent.
- User registration and authentication should be secure and passwords should be encoded or hashed. (Secure Websites usually use HTTPS but you do not need to consider the use of HTTPS.)
- Your system should use a database with relevant tables. Database design will affect your mark.
- Code quality, user friendliness and usability of your system will affect your mark.

Notes:

- You should implement all of the functional requirements listed in the description by yourself. Please note that you should not use libraries, frameworks etc. to add any of these requirements.
- To develop a better user interface you can use open source libraries or CSS frameworks such as Bootstrap (but not for the functional requirements listed in the description). However, this library or framework usage should be clearly explained in your report, in the self-reflection sheet, as well as in your code with comment lines in the related files.
- Focus on providing the required functionality, security, usability and robustness of the system.
- You should follow common software engineering practice in layout design, consistency, user experience, security etc.

SUBMISSION FORMAT

Technical report
A technical report, which should be a maximum **500 words** and maximum **15 pages**, must be submitted online as a PDF file on Brightspace by the deadline. Please write the word count at the end of the report.

You can use figures, diagrams, tables and screenshots to explain your system and these are not included in the word count.

Technical report should include the self-reflection sheet as an appendix at the end (template is available on Brightspace). **References and Appendices are not included in the word count.**

In your report, you should provide a link to access your application on our computing server and at least one set of user/admin credentials to test your system. **Note that you should not disclose your personal account details in any form!**

System
A Web application should be developed individually and all required code should be uploaded onto the Maasdam Server by the deadline and all required database tables should be defined on its MySQL server. **Your system should be available and running on our server by the deadline.**

In addition, you should submit your code on Brightspace in a ZIP file before the deadline.

Please read the following submission guidelines carefully:

- Put your system under a subfolder named "wpassignment", so the URL should be something like: http://studentxxxxx.bucomputing.uk/wpassignment.
- You do not have to develop your system on our server but you must ensure that it works correctly on our server. We will test and evaluate your system on our server.
- It is your responsibility to make sure that your system works and is submitted before the deadline.
- Any external links or URLs will not be accepted.
- Any update on the server after the deadline will not be accepted and will be penalized.

MARKING CRITERIA
The following criteria will be used to assess the assignment:

1. Technical report (30%)

Criteria and Comments	ILOs	Available marks (%)
System design User interface design Novelty/difficulty of choices taken	1,2,5	**10**
Database design Development decisions Explaining the technical details	1,2,4,5,6	**10**
Justification of appropriate tools and methods chosen Justification of design/implementation/test choices taken Quality of conclusions and lessons learned	3,5,6	**5**
Document structure and coherence Correctness and consistency Quality of figures and illustrations	All	**5**

2. System (70%)

Criteria and Comments	ILOs	Available marks (%)
User registration User authentication Using sessions Use of password encryption Login and logout functions	All	**10**
Data Persistence • Adding information to the database • Updating existing information • Deleting information from the database • Comprehensiveness of the solution	1,2	**25**
Listing existing information Viewing more information about an entry Comprehensiveness of the solution Search functionality	1,2	**15**
Robustness and accuracy Exception/error handling Input validation and sanitisation	All	**10**
Code quality and professionalism Use of comment lines Consideration of professional standards	3,4,5,6	**10**

The overall expectation is as follows:

To achieve a pass
The system and database design of the finished system should be coherent and have enough detail to understand what is being built. All the specified basic functional requirements mentioned in the Assessment task have been developed to an adequate level and in accordance with programming best practices. It should be clear what you have done and why. Some security issues will have been considered. Your test plan should cover both structural and functional tests.

To achieve a medium mark
Apart from the requirements above, the system and database design is clear and some specified basic functional requirements are developed to a higher level. Required functionalities are implemented to a god standard. The system is user friendly and easy to use. Security issues are well considered and implemented.

To achieve higher marks
Apart from the requirements above, the system and database design is clear, detailed and presents an excellent piece of work. All the specified basic functional requirements have been carried out to a higher level. The code should be of a high standard and using well-defined conventions. Required functionalities are implemented professionally and the areas covered are more complex. The system is user friendly and easy to use. Many security issues have been considered. The test plan should test a range of scenarios and ensure that the features you have developed are robust.

INTENDED LEARNING OUTCOMES (ILOs)
This unit assesses your ability to:

1. Be able to design, build and test a data driven web application using a variety of modern Web development technologies and server side coding.
2. Be able to build the necessary development environment through the installation, configuration and deployment of such systems.
3. To review available development solutions and make effective selection against real-world business requirements.
4. Analyse and evaluate a range of security threats to web applications and implement strategies to counteract threats.
5. Be aware of the technical and market trends and emerging professional practice in web development.
6. To understand the related legal, ethical and social issues deriving from such web applications so as to maintain their health and sustainability.

QUESTIONS ABOUT THE BRIEF
Questions about the assignment can be asked via:

- Email to Unit Leader (xlu@bournemouth.ac.uk)
- MS Teams (online) during office hours to Unit Leader
- Specified seminar sessions

Unit Leader Signature Xin Lu

Help and Support

Undergraduate Coursework Assessments

If a piece of coursework is not submitted by the required deadline, the following will apply:

1. If coursework is submitted within 72 hours after the deadline, the maximum mark that can be awarded is 40%. If the assessment achieves a pass mark and subject to the overall performance of the unit and the student's profile for the level, it will be accepted by the Assessment Board as the reassessment piece. The unit will count towards the reassessment allowance for the level; This ruling will apply to written coursework and artefacts only; This ruling will apply to the first attempt only (including any subsequent attempt taken as a first attempt due to exceptional circumstances).
2. If a first attempt coursework is submitted more than 72 hours after the deadline, a mark of zero (0%) will be awarded.
3. Failure to submit/complete any other types of coursework (which includes resubmission coursework without exceptional circumstances) by the required deadline will result in a mark of zero (0%) being awarded.

The Standard Assessment Regulations can be found on **Brightspace or via** https://www1.bournemouth.ac.uk/students/help-advice/important-information (under Assessment).

Exceptional Circumstances

If you have any valid **exceptional circumstances** which mean that you cannot meet an assignment submission deadline and you wish to request an extension, you will need to complete and submit the online Exceptional Circumstances Form together with appropriate supporting evidence (e.g. GP note) normally **before the coursework deadline**. Further details on the procedure and links to the exceptional circumstances forms can be found on **Brightspace or via** https://www1.bournemouth.ac.uk/students/help-advice/looking-support/exceptional-circumstances. Please make sure that you read these documents carefully before submitting anything for consideration. For further guidance on exceptional circumstances please contact your Programme Leader.

Referencing

You must acknowledge your source every time you refer to others' work, using the **BU Harvard Referencing** system (Author Date Method). Failure to do so amounts to plagiarism which is against University regulations. Please refer to https://libguides.bournemouth.ac.uk/bu-referencing-harvard-style for the University's guide to citation in the Harvard style. Also be aware of Self-plagiarism, this primarily occurs when a student submits a piece of work to fulfill the assessment requirement for a particular unit and all or part of the content has been previously submitted by that student for formal assessment on the same/a different unit. Further information on academic offences can be found on **Brightspace** and from https://www1.bournemouth.ac.uk/discover/library/using-library/how-guides/how-avoid-academic-offences

Additional Learning Support

Students with **Additional Learning Needs** may contact the Additional Learning Support Team. Details can be found here: https://www1.bournemouth.ac.uk/als

Primary Research (Undergraduate Levels)

You should not be conducting any primary research (i.e. carrying out an investigation to acquire data first-hand, for example, where it involves approaching participants to ask questions or to participate in surveys, questionnaires, interviews, observations, focus groups, etc.) unless otherwise specified in the brief. However, if there is a genuine requirement to collect primary research data you will require ethical approval before doing so. In the first instance, please discuss with the Unit Leader. The collection of primary data without appropriate ethical approval is a serious breach of Bournemouth University's Research Ethics Code of Practice and will be treated as Research Misconduct.

IT Support

If you have any problems submitting your assessment please contact the IT Service Desk - +44 (0)1202 965515 - immediately and before the deadline.

Disclaimer

The information provided in this assignment brief is correct at time of publication. In the unlikely event that any changes are deemed necessary, they will be communicated clearly via e-mail and Brightspace and a new version of this assignment brief will be circulated.