**Main CW Assessment Brief COMP1678-2023/24 Academic session.**

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| **COMP1678 (2023/24)****Term A** | **User-centered Web Engineering** | **Master CRN:** **11574** | **Contribution: 100% Coursework** |
| Module leader Dr Solomon H. Ebenuwa | Greenwich Landmark Pictures selling website | Deadline Date: 14/12/2023 |
| Feedback and grades are normally made available within 15 working days of the coursework deadline |
| Learning Outcomes: 1. Demonstrate a clear understanding of a User Centred Design (UCD) development methodology, and the importance of gathering different user requirements, and applying them in a Web-based interface design.
2. Utilise current and emerging open-source server-side and client-side Web technologies to create database-driven Web applications
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| ***Plagiarism*** *Is presenting somebody else’s work as your own. It includes copying information directly from the Web or books without referencing the material; submitting joint coursework as an individual effort; copying another student’s coursework; stealing or buying coursework from someone else and submitting it as your own work. Suspected plagiarism will be investigated and if found to have occurred will be dealt with according to the procedures set down by the University. All material copied or amended from any source (e.g., internet, books) must be referenced correctly according to the reference style you are using. Your work will be submitted for electronic plagiarism checking. Any attempt to bypass our plagiarism detection systems will be treated as a severe Assessment Offence****AI Warning:****The University does not encourage the use of AI software for coursework; hence this coursework has been designed to encourage independent thinking, creativity, and initiative. To ensure you perform very well, you are advised to apply these principles.* |

**Coursework Submission Requirements**

An electronic copy of your coursework report must be fully uploaded by 23:30 on the Deadline Date of 14/12/2023 using the coursework upload link on the COMP1678 Moodle page.

• For this coursework, you must submit a single Acrobat PDF document report that must contain the evidence of all the activities carried out in Part 1 and Part 2. Your developed “Web Application” should be hosted inside stuweb.cms.gre.ac.uk or localhost.

One single ZIP file of your web application should also be uploaded on Moodle using the submission link. Please note the deadline date of 14/12/2023, 23:30.

• In general, any text in the document must not be an image (i.e., must not be scanned) and would normally be generated from other documents (e.g., MS Office using "Save As. PDF"). An exception to this is hand-written mathematical notation, but when scanning ensures the file size is not excessive.

• Your work will be marked online and comments on your work and a provisional grade will be available from the Coursework page. The grade will be made available in the portal.

• You must NOT submit or mail any coursework to your or any tutor.

• All coursework must be submitted on Moodle as indicated above

**Detailed Specification**

This coursework is worth 100% of the total marks for this course. This coursework must be completed individually. Please read this entire specification very carefully so that you are fully aware of the requirements. The report submitted will contain evidence of having carried out the activities in Part 1 and Part 2 with detailed explanations, screenshots, and annotations.

The University website has details of the current Coursework Regulations, including details of penalties for late submission, procedures for Extenuating Circumstances, and penalties for Assessment Offences.

This coursework is worth 100% of the total marks for this course.

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**Scenario Overview.**

**Scenario.**

“Greenwich Landmark pictures selling website”.

With the advent of digital products and selling online, you intend to create a website that would enable you to sell pictures of popular landmarks within the Old Royal Naval College. The website should be a fully functional e-commerce website that would allow users to register, log in, and make purchases of the uploaded pictures which will be displayed on the home page.

In summary, this is an e-commerce website but the products on sale are pictures of landmarks within the Old Royal Naval College.

 Your task is to design and develop a Landmark pictures-selling website. The online shop should strongly incorporate a User-centred design (UCD), so that different categories of members of the public will be able to browse and download pictures of their choice. You particularly want different age groups and physical profiles of the potential customers, for example, senior citizens with different physical, health, and social challenges to find it easy to use the website. The online shop should be a full-stack e-commerce web application with complete “CRUD” facilities and an appropriate front-back-end system. Customers may be required to register before purchasing item(s) from the website for the security of personal information and to enable you to keep a record of customers’ needs and inventory. All other facilities of an e-commerce store for example the “Content Management System-(CMS)” should be incorporated.

The e-commerce website as described above is just a guide and your work should not be limited to only the functionalities mentioned. To score very well in this assessment, you should endeavour to produce a fully functional e-commerce website while incorporating UCD design principles, this should be hand-coded by you. Do not use only downloaded webpages or those produced during lectures that you have not altered to incorporate these specifications. The student must show clear evidence of building or altering any free web pages to comply with the assessment specification in both the front-end and back-end.

**Assessment Criteria.**

This coursework is made up of Part 1 and Part 2. The marks awarded for each part are shown.

**Part 1: Analysis design and front-end implementation [30 marks]**

The website is to be designed by researching contemporary issues and following Users user-centred design (UCD) principles while embedding it within the System Development Life Cycle (SDLC). The design process needs to be documented through appropriate design artifacts by understanding the user’s requirement that has been elicited, for example, clear evidence of using personas, questionnaires, or other techniques of the UCD. Appropriate front-end design must be evidenced with diagrams and explanations to match the scenario, prototyping, and evaluation. Note that the various tools/techniques that are covered during the lectures will be relevant here, e.g., various requirement-gathering techniques, personas, task analysis and storyboarding, card sorting, participant-based or heuristics evaluation, etc. The student is expected to consider contemporary issues (e.g., responsive design, navigation principles, user interface design patterns, accessibility). Where necessary, this must be evidenced in a diagram and explanation or both. The design must show a complete layout of more than three pages and their components e.g., home page, registration, and other pages. A clear rationale for the design decisions based on user research and best practices of UCD in relation to the scenario should be included.

The front-end should be a complete website with appropriate pages, layout, and necessary components. It must be created fully by you using the front-end technology, XHTML/HTML5, JavaScript/jQuery, and CSS. You may use a framework like Bootstrap4/5 instead of individual technology. Whatever technique you choose, there must be clear evidence of creating the front-end. The number of pages you choose to include is your decision, but pages with login and registration forms for users with necessary front-end authentication (or back-end authentication) using username and password that are necessary to accommodate the back-end implementations should be provided. The general layout of the front-end should have headers, footers, navigations, a search bar, a logo and picture, and other media or necessary and appropriate components to establish the quality of the front-end webpages. You are not limited to the level of quality of the website, provided the code is written by you. This front-end implementation must have evidence of testing and using heuristic evaluations. Remember the emphasis here is not aesthetic but functionality. That does mean that you should ignore all aesthetic qualities but not waste too much time beautifying the website instead of coding for specific functionality (do not use any web content management software like WordPress, GoDaddy, Wix, etc., you are required to write your own code). All the activities you will carry out in this part must be evidenced in the report using screenshots, annotations and clear explanations where necessary. Submit the zip file of the webpages by uploading via the link provided on the Moodle home page; please see the “Deliverables” section.

**Part 2: System and Back-End Implementation [70 marks]**

The implementation must be a full-stack web application. Some of the back-end functionalities are required which must include create, read, update, and delete (CRUD) functionalities among others, it should be responsive to other devices. You are to follow your design above to produce these where necessary. There may be a few specifications that may not be possible to implement like purchasing items due to data security issues. These are understandable, but functionalities like “Loading items” or “Login and Registration of users” and others can be and should be implemented and evidenced properly. The design of the back-end database like ERD must be included in this section, and this must be extensively evidenced and incorporated into the front-end to produce the dynamic web system.

Though you are at liberty to produce a fully-fledged e-commerce website while utilising the UCD principles, some reasonable finesses are expected, like member passwords should be stored in the database in an encrypted format, the email address should follow a valid format, and account details are to be stored in the MySQL database. You will need to initiate some form of session state to prevent unauthorized access to member activity within the site where necessary. Authentication credentials should be protected from interception in transit. You will find it useful to implement some form of logout mechanism in association with login processes. This back-end implementation must have evidence of testing and heuristic evaluations. Because the functionality of the back-end is too numerous to be itemized, your emphasis should be on evidencing back-end creativities and implementation. All the activities you will carry out in this part must be evidenced in the report using screenshots annotations and clear explanations where necessary before submitting. The zip file of the website should be uploaded on the link provided on the Moodle home page; please see the “Deliverables” section.

**Some operations you may find useful to incorporate in the Web Site**

[These are by no means all operational functionalities, but just to give you a clue]

**Registration and Login forms:** Users or customers should be able to register and log into their accounts. Creating forms that allow visitors to create a customer's account. The form must include the right pieces of information from the potential users: their chosen username, their chosen password, and their email address and information recorded in the back-end MySQL database.

**Search:** Provide a means for casual visitors (i.e., not registered) to enter a specific item to search for matching items. Search results must be returned in a paginated list brief format where each entry in the list can be clicked to, if they are registered as a member, show full details of the matching items, otherwise (if not registered) redirect to the login form. Note: A casual visitor should not be expected to authenticate with the site. This form can attract members so should be clearly visible from the home page. You should not expect search terms to be an exact match. Result lists may become lengthy (e.g., searching with an empty string may return all the existing entries of your database), and therefore must be paginated. Make sure that you have sufficient items (stored offline) in your database to demonstrate pagination.

 **Buy Item Button:** Allow the registered member to buy a specific item or several items. You can approach this in many ways. However, make sure after selecting a specific item (or several items), clicking the ‘add to cart’ button/link should take you to a page with all the items and a total to be shown in a summary. You only need to implement up to this part concerning an order – it is not required to implement the execution of an actual order (e.g., payment, etc.)

**Logout:** A member must be able to log out of the account and default to the home page, which will show the login and registration button.

**Selection of Items:** Users should be able to select items and update their cart and the total of such items should show.

**Use of tools and resources:**

You are free to use any compiler or any other similar resources that will help you to achieve this deliverable. Such as VS Code, Sublime text, Brackets, or NetBeans to aid your productivity. If you wish, you may make use of WYSIWYG tools such as Dreamweaver or Expression Web. Do not become distracted by spending valuable time on the appearance of your work or gold plating the specification. Be careful when using code generators, make sure that you understand the code that is being generated.

**External material**

In creating your website, you are expected to modify any online code and resources you use. Be careful when using online code and resources such as PHP or CSS frameworks from Laravel, Symfony, and Bootstrap, where necessary, you may use any of the frameworks to produce your code, make sure that you understand the code and that it functions correctly. Include comments in your source code to clearly explain their functions. Your code sources must also be referenced in your submission. Failure to correctly reference your sources may be considered plagiarism.

**Deliverables:**

A PDF single report submitted by the due date containing the following sections IN THE ORDER given below. Do not include any other information. Do not include any of your source code in the report.

1. A cover page.
2. Table of Contents.
3. The complete URL or (local host) information of the developed prototype. Please provide the login credentials of one pre-registered member. Please provide in the report the member’s username and password for testing.
4. Documentation of all activities carried out in “Part 1 and Part 2: – Please refer to that part’s details.

**Your web application must be submitted as follows:**

1. Your developed “Web Application” must be hosted inside stuweb.cms.gre.ac.uk or on (localhost) optional.
2. One single ZIP file of your created web application should also be uploaded via the Moodle submission page. Be advised that you may be required to demonstrate and run your applications from the specified web server and database server. You should therefore make sure that your work is set up and tested well. You are advised to develop your work directly on the specified deployment university servers at stuweb.cms.gre.ac.uk or work offline (localhost).

The report, which documents the analysis, design, and implementations (Part 1 and Part 2) must be suitably structured, written in your own words, and develop a clear narrative and argument using appropriate language. All assertions are expected to be supported by references using the Harvard Referencing Style. The discussion should be within 3,000 words plus or minus 10% not including the title page or any preamble and not including the references.

**Marking Scheme:** **CW Assessment Brief COMP1678-2023/24 Academic session.**

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| *Coursework: Level 7* |
|  | *0-29% Fail* | *00-49% Fail* | *50-59% Good* | *60-69% Very Good* | *70-79% Excellent* | *80-100% Exceptional* |
|  *D1 Knowledge* *Demonstrate the knowledge of offering solutions by system analysis of the context scenario and Requirements elicitations.* | *No indication of any knowledge of the module was shown. No meaningful answer was provided. Work submitted almost empty.* | *Did not show any meaningful understanding of the context scenario. Unable to demonstrate any requirement elicitation techniques. Did not demonstrate any knowledge and skills in context. No meaningful answers were provided. All answers are not correct* | *Demonstrate good understanding and abilities to interpret the context scenario, able to demonstrate the knowledge of scenario and case study analysis in order to use the relevant and correct techniques of requirements elicitations to offer the right solution. Able to capture some of the meaningful requirements based on context analysis. Some significant errors.* | *Demonstrate very good understanding and abilities to interpret the context scenario, able to demonstrate the knowledge of scenario and case study analysis in order to use the relevant and correct techniques of requirements elicitations to offer the right solution. Able to capture most of the meaningful requirements based on context analysis. Few errors* | *Demonstrate excellent understanding and abilities to interpret the context scenario, able to demonstrate the knowledge of scenario and case study analysis in order to use the relevant and correct techniques of requirements elicitations to offer the right solution. Able to capture most of the meaningful requirements based on context analysis. No errors.* | *Demonstrate exceptional understanding and abilities to interpret the context scenario, able to demonstrate the knowledge of scenario and case study analysis in order to use the relevant and correct techniques of requirements elicitations to offer the right solution. Able to capture all meaningful requirements based on context analysis. No errors.* |
| *D2 Research* *Design based on Requirements-Synthesis The right solutions are clear evidence of having researched into the modern design paradigm and requirements elicitation process based on the context.* | *Did not show any indication of research for design, no indication of requirements elicitation, and no meaningful answers provided. Work submitted almost empty.* | *Did not show any significant ability in interpreting the context scenario. Unable to produce any meaningful UCD based on the case study. Did not demonstrate any knowledge and skills in context. No meaningful answers were provided.* | *Showed good ability in understanding and interpreting the context scenario by producing a good UCD based on the case study. Produced some evidence proof of knowledge and skills in the interpretation of content case studies to impact the design. Some skill in the usage of the tools and techniques for system design, though it contains substantial errors.* | *Showed very good ability in understanding and interpreting the context scenario by producing a comprehensive UCD based on the case study. Produced more than enough evidence of proof of knowledge and skills in the interpretation of content case studies to impact the design. Adequate skill in the usage of the tools and techniques for system design. Takes the design to some levels of granularity, with few errors.* | *Showed an excellent ability to understand and interpret the context scenario by producing a comprehensive UCD based on the case study. Produced more than enough evidence of proof of knowledge and skills in the interpretation of content case studies to impact the design. Able to use the proper tools and techniques for system design, ability to granulate the design to the right levels.* | *Showed excellent ability in understanding and interpreting the context scenario by producing a comprehensive UCD based on the case study. Produced more than enough evidence of proof of knowledge and skills in the interpretation of content case studies to impact the design. Able to use the proper tools and techniques for system design, ability to granulate the design to the right levels.* |
| *D3 Evaluation* *Implementation, heuristic UCD evaluation, and testing.* | *Did not show any indication of interest, no testing of any kind, no substantial knowledge of the module shown. No meaningful answer was provided.* | *Demonstrated very poor implementation of the system. Unable to show any substantial developmental processes. Did not perform any significant white box testing of the system. No meaningful effort evidenced* | *Demonstrated good implementation in the development of various parts of the system. Showed some incremental developmental processes. performed some white box testing of some parts of the system. Few final testing heuristic evaluations of the final products.* | *Demonstrated very good implementation in the development of various parts of the system. Showed incremental developmental processes. White box testing of some parts of the system. Some evidence of summative testing and heuristic evaluations of the final products.*  | *Demonstrated excellent implementation in the development of various parts of the system. Evidence of incremental developmental processes with white box testing as an iterative process in the development. Multiple summative testing and heuristic evaluations of the final products. Excellent evidence provided.* | *Demonstrated an exceptionally implementation in the development of various parts of the system. Evidence of incremental developmental processes with white box testing as an iterative process in the development. Robust summative testing and heuristic evaluations of the final products. Clear provisions of exceptional evidence.* |
| *D4 Communication* *Documentation, reports, and presentations. Proficiency in the use of English language.* | *Very poor communication, and very poor usage of the English language. No meaningful statements made.* | *Very poor documentation. Having no or few required pages. Few usages of terminology, totally unclear screenshots and annotations, evidence provided is unclear or full of errors. Showed no or poor knowledge of referencing. Evidence totally omitted. Poor usage of the English language, sentences are gibberish.*  | *Good documentation, having some of the required pages and some usage of the conventional, technical terminology. Clear screenshots and annotations, presentations of clear evidence. some good citations and Harvard referencing, but significant omissions in the evidence provided. Good usage of the English language, some errors but nothing serious.* | *Very good documentation having all the required standard pages and usage of conventional, technical terminology. Clear screenshots and annotations, presentations of clear evidence. Good citations and Harvard referencing, some omissions in the evidence provided. Very good usage of English language, few errors but nothing serious.* | *Excellent documentation having all the required standard contents pages and usage of conventional, technical terminology. Clear screenshots and annotations, presentations of clear evidence. Excellent citation and Harvard referencing, but few omissions in the evidence provided. Excellent proficiency in the usage of English language.* | *Exceptionally documentation having all the required standard contents pages etc. and usage of conversional, technical terminology. Clear screenshots and annotations, and presentations of clear evidence. Excellent citations and Harvard referencing, exceptional proficiency in the use of the English language.* |
| *D5 Referencing*  | *No meaningful referencing, the work submitted almost empty, no substantial knowledge of the module shown. Did not indicate any knowledge of referencing at all.* | *Very poor citations and referencing. Did not demonstrate any significant knowledge of the Harvard referencing style. The documentation did not comply with academic writing standards and was full of errors.* | *Good citations and proper referencing using Harvard referencing style, displays some knowledge of academic writing standards. A significant number of errors.* | *Very good citations and proper referencing. Clear evidence of using Harvard referencing style, documentation shows evidence of complying with academic writing standards. A few noticeable errors.* | *Excellent citations and proper referencing. Clear evidence of using Harvard referencing style, documentation shows evidence complying with academic writing standards, and very few noticeable errors.* | *Exceptional and clean citations with proper referencing. Clear and flawless evidence of using Harvard referencing style, documentation shows evidence complying with academic writing standards, no errors.* |
| *D6 Employability* *Employability-Soft skills, time management independence, and ownership* | *Very poor soft skills. incomplete or empty work.* | *Poor demonstration of soft skills, poor timekeeping. etc* | *Demonstrated good soft skills, like timekeeping, and working independently.*  | *Demonstrated very good soft skills, like timekeeping, working independently, complying with all instructions, and ability to carry out individual research.* | *Demonstrated excellent soft skills, like timekeeping, working independently, complying with all instructions, and ability to carry out individual research.* | *Demonstrated exceptional soft skills, like timekeeping, working independently, complying with all instructions, and ability to carry out individual research.* |

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| *sn* | *Assessment Criteria**All these must be evidenced in the report.* | *Marks Allocation* |  |
|  | **Part 1: Analysis design and front-end implementation** **[30 marks] *(report and product)*** | ***30*** |  |
| *1* | *Appropriate usage of UCD solutions for system analysis of the context scenario and requirements elicitations.**The list of requirements using UCD should be 5 and above [1\*5= 5 marks]* *Evidence of using UCD requirement elicitation tools like a persona, card sorting, questionnaires; at least two or more.**[2.5\*2=5]* | *10* |  |
| *2* | *Evidence of appropriate usage of modern UCD; responsive user Interface (UI) showing two or more interfaces e.g., Desktop and mobile.* | *10* |  |
| *3* | *Evidence of developing and implementing the complete front-end website with all the necessary components e.g. navigation buttons, etc.* | *10* |  |
|  | ***Part 2* System and Back-End Implementation** **[70 marks] *(report and product)*** | ***70*** |  |
| *4* | *Evidence of back-end database design -ERD.* | *10* |  |
| *5* | *Evidence of creating a functional login page.* | *10* |  |
| *6* | *Evidence of creating a functional registration page.* | *10* |  |
| *7* | *Evidence of creating functional loading items forms.* | *10* |  |
| *8* | *Evidence of items displaying from the database on the web page.* | *10* |  |
| *9* | *Evidence of evaluation and testing.* | *10* |  |
| *10* | *Referencing and documentation.* *Proficiency in the use of the English language and appropriate terminology.* | *10* |  |

*[Notes: Any back-end functionality for an e-commerce website will be acceptable because there are numerous functionalities, and it is not possible to implement all, but some basic ones like login and registration, etc. are expected]*

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**The End.**