

Coursework 2: E-commerce Website

1. Summary

Version: 2.0

Group project

Weighting: 30% of overall mark.

Deadline for first submission: 16:00 Friday 20th January 2023 (end of Week 14)

Deadline for final submission: 16:00 Friday 17th February 2023 (end of Week 18)

Demonstration deadline: 18:00 Friday 3rd March 2023 (end of Week 20)

2. Key Points

- E-commerce website.
- Can sell any kind of product (groceries, hardware, services, tickets, holidays, etc.).
- Customers add items to a basket and enter their personal details (name, address, email, telephone number, etc.).
- When they click 'Buy now' a confirmation message is displayed and the order is stored.
- No money is taken by the website and no confirmation email is sent.
- The front end is written in HTML, CSS and JavaScript.
- Server-side scripts are written in PHP.
- Browser data (for example, for customer tracking and session management) is stored using HTML local/session storage.
- Persistent data (for example, customers' details, orders, products, etc.) is stored on the server using MongoDB. You do not need large amounts of data: 10-20 products is fine.
- A content management system (CMS) enables staff to add products, view orders, etc.
- The website tracks customers and provides recommendations.
- Customers can register on the website and view past orders.
- AJAX is used for some or all of the communication between client and server. For example, AJAX could be used to keep the customer's basket and stock information synchronized. Or AJAX could be used for all communication between client and server.
- Frameworks and libraries, such as jQuery, Bootstrap and AngularJS are allowed.
- Publishing platforms and content management systems, such as Wordpress, Joomla and Laravel, are not allowed.
- The final submission of your project will only receive a mark if it has been demonstrated in your laboratory session before the end of Week 20.

3. Assignment of Groups

Groups will be assigned at random within each lab. We will use the marks for Coursework 1 to ensure that each group contains at least one person who obtained a high mark for Coursework 1 and one person who obtained a medium or low mark for Coursework 1. These groups are non-negotiable.

Mixed ability groups are fairer and they enable people to make complementary contributions and learn from each other. Random group allocation is similar to a real work situation in which you are allocated to a team and have to work with that team regardless of whether you like or dislike particular team members. Spreadsheets will be used to ensure that each student's mark reflects their actual contribution to the project (see Section 12).

4. Advice for Group Work

Commercial software is developed in teams, so it is extremely important to learn how to collaborate with other people on a group project. This is not always easy, so here are some recommendations for your collaboration on Coursework 2:

- Set up communication channels at the beginning of the project. For example, email addresses, WhatsApp group, Slack channel, etc.
- Do not self-appoint yourself as team leader. Your group can collaborate democratically or elect someone to act as team leader.
- Create a Git repository for your project and ensure that all group members understand how to use it.
- Have a group meeting every week in the laboratory session with the tutor present.
- Go through the final contribution spreadsheet and agree who is going to do what for the next submission.
- **Put a deadline on each contribution.** These deadlines should be exact. For example, “John agrees to implement the shopping basket by 17:00 Monday 6th February 2023.”
- If a person does not do the work by the deadline, they potentially lose the right to have the contribution for that work.
- If the work submitted by a team member could be improved, then it is fine for another team member to improve it, potentially in collaboration with the original person. The contribution for this component should be appropriately shared between the contributors.
- All group members should be present when the project is submitted. This reduces the chances of a mistake being made and all group members then bear equal responsibility for the correctness of the submission.

5. What Needs to be Submitted:

The coursework should only be uploaded once, using the submission link of one of the group members. Feedback and marks are given separately to each group member in the Feedback section of the course website.

5.1 First Submission (Deadline: 16:00 Friday 20th January 2023)

Submit a zip file that contains:

1. *Progress report.* This should be in Word or PDF format. It must contain:
 - Description of the design and features of the front and back end of the website.
 - Database design with examples of MongoDB documents in JSON format. The example JSON documents for your MongoDB database design can be pasted into your report or included in the zip file with the website code.
 - Screenshots of all the pages of the website.
2. *Website code.* HTML, CSS, JavaScript, PHP and images for the front end of the website.
3. *First submission contribution spreadsheet.* Fill in the contributions that group members have made to the tasks (see Section 12).

Upload the zip file using the link in the Coursework 2 section of the course website.

The first submission will help us to give you feedback about your project and provide appropriate support. You can reuse material from the first submission in the final submission.

After the first submission we will mark the front end of the website, the database design and the progress report. You can change your website and database after the first submission, but they will not be marked again.

The first submission is worth 20% of the mark for Coursework 2.

5.2 Final Submission (Deadline: 16:00 Friday 17th February 2023)

Submit a zip file that contains:

1. *Final report*. This should be in Word or PDF format. It must contain:
 - Brief description of project.
 - Screenshots of the final front end of the website.
 - Discussion of the security, privacy and legal issues that affect the website. List the steps that have been taken to address these issues and suggest how unresolved issues could be addressed in the future. Should be at least 500 words.

Submit Word or PDF version of final report.

2. *Website code*. HTML, CSS, JavaScript, PHP and images for the front and back end of the website.
3. *Database dump*. You must use mongodump or a similar tool. No marks are available for a copy of the data folder in the bin directory – your dump must be readable in a text editor.
4. *Final submission contribution spreadsheet*. Fill in the contributions that group members have made to the tasks (see Section 12).

Upload the zip file using the link in the Coursework 2 section of the course website.

The final submission of your project will only receive a mark if it has been demonstrated in your laboratory session before 18:00 Friday 3rd March 2023.

The final submission is worth 80% of the mark for Coursework 2.

6. Formative Feedback

Formative assessments do not directly contribute to the overall module mark but they do provide an important opportunity to receive feedback on your learning. They provide an opportunity to evaluate and reflect on your understanding of what you have learnt. They also help your tutors identify what further support and guidance can be given to improve your grade.

We are happy to give you feedback about Coursework 2 in the labs and can also give feedback about drafts of Coursework 2 that are sent to us more than one week prior to the deadline.

7. Late Submission

We are very unlikely to give extensions to coursework and very unlikely to accept excuses. So we strongly recommend that you hand coursework in on time. Contact the module leader before the deadline if you run into problems.

Each submission has a six-hour window (16:00-22:00) within which you can upload your work without a mark penalty. If you submit later than this (within five calendar days of the original deadline), then your mark will be capped at 40% of the marks available. Work submitted more than five days after the original deadline will receive zero marks.

8. Extenuating Circumstances

If you have personal problems that interfere with your studies, you can apply for extra time to complete coursework without a mark penalty. You have to provide appropriate documentary evidence.

More information here: <https://unihub.mdx.ac.uk/your-study/assessment-and-regulations/extenuating-circumstances>.

You must let the module leader know if you have been granted an extension.

9. Plagiarism

Plagiarism is a serious academic offence. Students that submit identical projects will be reported to the university. If they are found guilty, they will have to resubmit their work, their marks could be capped or they could fail the module.

We recognize that there is often a blurry line between copying and collaboration. People work together and help each other to solve problems and apply the solutions to their own projects. We strongly encourage this kind of collaboration. But it is not acceptable for students to collaborate on a project which they submit as individual work.

To penalize this, the mark for near-identical projects will be divided between the projects. So suppose a project gets a mark of 60% and near-identical versions are handed in by three groups. Each group will get 20%, instead of 60%. This only applies to the marks for the parts of the project that are identical.

We are not going to police this and make detailed investigations. So if you allow your project to be copied, you will be as liable for plagiarism as the group who submits it as their own work. Both the original and the copy will receive zero or reduced marks.

Links to the relevant University regulations and additional support resources can be found here:

- Full details on academic integrity and misconduct and the support available can be found at: <https://unihub.mdx.ac.uk/study/academic-integrity>
- The Academic Integrity and Misconduct policy is available in our Public Policy Statements (under Academic Quality) at: <https://www.mdx.ac.uk/about-us/policies>
- Referencing & Plagiarism: Suspected of plagiarism?: <https://libguides.mdx.ac.uk/c.php?g=322119&p=2155601>.
- Referencing and avoiding plagiarism: <https://unihub.mdx.ac.uk/study/writing-numeracy/awl-resources/writing>.

The Middlesex University Students' Union (MDXSU) Advice Service offers free and independent support in making an appeal, complaint or responding to any allegations of academic or non-academic misconduct: <https://www.mdxsu.com/advice>.

10. Assessment

The front end of the website, the progress report and the database design will be marked after the first submission. You can change your front end and database design after the first submission, but no further marks will be available for them after this date. The rest of the project will be marked after the final submission date.

To mark the final submission we will look at the code, read the project report and view a short demonstration of your website during laboratory sessions. **You must demonstrate the submitted code, not an improved version that you have worked on after the final submission date.**

During the demonstration we will ask about the contributions of each group member and adjust the values given in the spreadsheet (see Section 12). **Any group members that are not present at the demonstration will lose their right to dispute the contributions that are allocated to them in the contribution spreadsheet.**

Your project will receive zero marks if your group does not demonstrate it in your laboratory session prior to 18:00 Friday 3rd March 2023.

Section 12 describes how the contribution spreadsheet calculates the mark for each group member. This will be scaled down to a mark between 0 and 30 that corresponds to 30% of the overall mark for the module.

11. Assessment Criteria

Feature	Deadline	Marks
Progress report. Short description of the website and screenshots of the front end of the website. Do not include screenshots of code, the command line or Dreamweaver, NetBeans, etc.	16:00 20/1/23	3 marks. Clear description of the design and features of the front and back end of the website. 2 marks. Screenshots of all of the pages of the website.
Mongo DB database design. You can paste the document examples into the progress report or include them in the zip file with the code. A database dump of an implementation of the design can also be included with the code.	16:00 20/1/23	5 marks. List the collections and give examples of documents within each collection (for example, Customers, Products, Orders, etc.). Does the database capture all of the data that is going to be required by the website?
Front end. Website and content management system (CMS).	16:00 20/1/23	5 marks. Are the customer-facing pages well designed and attractive? Has thought been given to usability?
HTML and CSS code quality. For example, comments, layout, organization into folders, etc. Marks will be deducted for unused files and for commented-out code.	16:00 20/1/23	2.5 marks. HTML code quality. 2.5 marks. CSS code quality.
Shopping functionality. Customers can add products to a basket. When they check out their purchase is recorded and a confirmation is displayed. There is no need to send a confirmation email and no money should be taken from the customer. Product data is stored on the server.	16:00 17/2/23	5 marks. Basket 5 marks. Checkout and confirmation
Search for products. Customers can search for products and the results can be sorted by price, category, relevance, etc. The number of products in stock is displayed in the search results.	16:00 17/2/23	5 marks. Search functionality. 5 marks. Sorting of products by price, relevance, category, etc.

Customer registration. Customers can register on the website, change their details and view past orders. Customer data is stored on the server.	16:00 17/2/23	3 marks. Storage of customer details. 3 marks. Editing of customer details. 4 marks. Viewing of past orders.
Customer tracking and recommendation. When the customer checks out suggestions can be made about other products that they might want to buy. Or the website could suggest products as the customer shops in a similar way to Amazon.	16:00 17/2/23	5 marks. Customer tracking. 5 marks. Use of customer tracking data to generate recommendations.
Content management system (CMS). Staff can log into the site. They can view, add and edit products and view and delete customer orders.	16:00 17/2/23	2 marks. Staff login with appropriate error messages. 2 marks. Viewing of products. 2 marks. Adding of products. 2 marks. Editing of products. 2 marks. View and delete customer orders.
AJAX communication between client and server. A simple use of AJAX would be a request for customer recommendations based on a keyword. Higher marks will be awarded for more complicated uses of AJAX, such as registration/login or a server-side basket.	16:00 17/2/23	4 marks. Simple use of AJAX on the website. 6 marks. Sophisticated uses of AJAX.
PHP and JavaScript code quality. For example, comments, layout, organization into folders, etc. Marks will be deducted for unused files and for commented-out code.	16:00 17/2/23	2.5 marks. JavaScript code quality. 2.5 marks. PHP code quality.
Database dump. You must use mongodump or a similar tool. No marks are available for a copy of the data folder in the bin directory – your dump must be readable in a text editor.	16:00 17/2/23	5 marks. Dump of database.
Final report. Brief description of the project and screenshots of the final front end of the website. Discussion of the security, privacy and legal issues that affect the website and	16:00 17/2/23	5 marks. Clear description of the project and screenshots of the final front end of the website. 5 marks. Discussion of the security, privacy and legal issues that affect the website. List the steps that have been taken to address these issues and suggest how unresolved issues could be addressed in the future. Should be at least 500 words.

how they could be fixed. Do not include screenshots of code, the command line or Dreamweaver, NetBeans, etc.		
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12. Calculation of Individual Marks

Your first submission must include a completed version of the spreadsheet 'CST2120_ContributionSpreadsheet_FirstSubmission.xlsx'. Your final submission must include a completed version of 'CST2120_ContributionSpreadsheet_FinalSubmission.xlsx'. These spreadsheets are available on the course website. The contribution spreadsheet for the first submission is shown in Figure 1.

	A	B	C	D	E	F	G	H
1	CST 2120 - Coursework 2 / E-commerce Website - Contribution Spreadsheet for First Submission							
2								
3	Student 1 name:	Alice						
4	Student 2 name:	Bob						
5	Student 3 name:	Carol						
6								
7	Task	Marks Available	Marks Awarded	Comments	Alice Contribution	Bob Contribution	Carol Contribution	Contribution Check
8	Progress report	6	0		0	0	0	Not implemented
9	MongoDB database design	4	0		0	0	0	Not implemented
10	Front end of website	5	0		0	0	0	Not implemented
11	HTML code quality	2.5	0		0	0	0	Not implemented
12	CSS code quality	2.5	0		0	0	0	Not implemented
13	TOTAL:	20	0					
14	MARKS CONTRIBUTED:				0	0	0	
15								
16	Percentage Mark Change							
17	0.5							
18								
19	Average contribution							
20	0							
21								
22	Weighted Mark							
23	Alice	0						
24	Bob	0						
25	Carol	0						
26								
27	FINAL MARK							
28	Alice	0						
29	Bob	0						
30	Carol	0						
31								
32	GENERAL COMMENTS							
33								

Figure 1. Contribution spreadsheet for first submission.

First you need to enter the names of the group members at the top of the sheet. Then you need to complete the pink fields for each task for each group member with a number that adds up to 1.0, or to 0.0 if the task was not attempted. If the numbers add up to 1.0 the contribution check field will display 'Ok'. If the numbers add up to 0.0, the contribution check field will display "Not implemented". Otherwise it will display "Error" and needs to be fixed. Make sure that you enter the information carefully. If there are missing contribution values, we will assume that all group members made an equal contribution.

The contribution values for each task are multiplied by the mark awarded for each task to get the number of marks that each person contributed to the project. The contributed marks are used to calculate the individual marks from the group mark in the following way.

The variables are as follows:

- *ic*. Individual mark contribution
- *gm*. Group mark
- *ac*. Average mark contribution of the group members
- *im*. Final individual mark

If someone has made zero contribution, they will get zero marks for the project. Otherwise, their individual mark will be calculated from the group mark using the following formula:

$$im = gm + 0.5 * gm * (ic-ac)/ac$$

The result of this formula, *im*, will be limited to the maximum number of marks. The factor of 0.5 ensures that the adjustments for individual contributions increase or decrease the group mark by a maximum of a half.

Most of the cells in the spreadsheet are locked to prevent the accidental introduction of errors.

There are separate sheets for groups of two and three people. The spreadsheet is explained in more detail in the video on Coursework 2.