Coursework 2: E-commerce Website

1. Summary

Group project

Weighting: 50% of overall mark.

Deadline for first submission: 23:00 Sunday 12th February 2017.

Deadline for final submission: 23:00 Sunday 2nd April 2017.

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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 is stored using HTML local/session storage.
- Persistent data on the server is stored in MongoDB.
- 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 communication between client and server. For example, AJAX could be used to keep the customer's basket and the 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 and Joomla, are not allowed.
- At the end of Week 16 you need to submit a progress report, a database design and the front end of the website.
- At the end of Week 23 you need to submit all of the code and a short report.

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 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.

4. Progress Report

The progress report should describe the e -commerce website and the progress that the group is making with it. It should include:

- 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.
- Screenshots of all the pages of the website.
- Summary of the current state of the project and the contributions that each group member has made to the project. The contributions must be presented in the same format as Table 1.

Table 1. Example contributions of group members

Name	Contributions to Project	Total Amount of Work on a Scale from 0 to 10
Alice	• Wrote content management system. • Customer recommendations. • Wrote half of final report.	10
Bob	• Database. • AJAX synchronization. • Testing	8
Carol	• Customer front end. • Search functionality. • Wrote half of final report	9

We will use the progress report to mark the front end of the website and the database design. The progress report will also help us to give you feedback about your project and provide appropriate support. You can reuse material from the progress report in the final submission.

The progress report is worth 10% of the mark for Coursework 2.

5. Final Report

This should describe the e-commerce website that you have implemented and include:

- Brief description of the project. This can reuse material from the progress report.
- Contributions of each group member. The contributions must be presented in the same format as Table 1.
- Description 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.

It would be helpful if you could make some comments to explain any major disparities between the individual contributions. We will be asking you about your contributions during the group demonstration of your project and checking that you have all agreed to the final allocation of contributions that is described in the final report.

The final report is worth 5% of the mark for Coursework 2.

6. What Needs to be Submitted:

6.1 First Submission (Deadline: 23:00 Sunday 12th February 2017)

After the first submission we will mark the front end of the website, the database design and the progress report.

Upload the following files using the Turnitin link in the Coursework 2 folder on the course website:

1. A Zip file containing the HTML, CSS and JavaScript for the front end of the website and examples of JSON documents for your MongoDB database design.
2. Progress report.

6.2 Final Submission (Deadline: 23:00 Sunday 2nd April 2017)

Upload the following files using the Turnitin link in the Coursework 2 folder on the course website:

1. A Zip file containing all of the code for the website.
2. Final report.

7. Late Submission

I am very unlikely to give extensions to coursework and I am very unlikely to accept excuses. So I strongly recommend that you hand coursework in on time.

Contact me before the deadline if you run into problems. **Unless I have given you permission for late submission, the marks available for coursework will halve every 24 hours after the deadline and will be zero after 1 week**.

8. Deferral of Assessment

If you have personal problems that interfere with your studies, you can apply for a deferral of assessment. This gives you extra time to complete coursework. To qualify for deferral of assessment you have to provide documentary evidence.

More information here: https://unihub.mdx.ac.uk/your-study/assessment-and-regulations/deferral-of-assessment.

9. Plagiarism

Plagiarism is a serious academic offence. Groups 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.

I 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. I strongly encourage this kind of collaboration. But it is not acceptable for groups to collaborate on a project which they separately submit as their own work. To penalize this, the marks for near-identical projects will be divided between the groups. So suppose a project gets a mark of 60% and near-identical versions are handed in by 3 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.

More information here: http://www.mdx.ac.uk/__data/assets/pdf_file/0027/188244/Section-F.pdf

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**. All group members must be present at the demonstration. The project will not be marked until it has been demonstrated.

During the demonstration we will ask about the contributions of each group member and adjust the values given in the project report. For example, if one group member is allocated 10 and their only contribution to the project was

proof reading the final report, then we will lower their contribution substantially. If a member is allocated 10 for writing code, then we will ask them to explain the code they have written.

Section 12 describes the formula that we will use to calculate a mark for each group member. This will be scaled down to a mark between 0 and 50 that corresponds to 50% of the overall mark for the module.

11. Assessment Criteria

Feature	Deadline	Marks
Progress report. A short description of the website that includes the contributions of group members and lists the third party libraries that were used.	**23:00 12/2/17**	**2 marks**. Clear description of the design and features of the front and back end of the website. List of third party libraries. **2 marks**. Status of the project and contributions of group members. **2 marks**. Screenshots of all of the pages of the website. Do not include screenshots of code, the command line or NetBeans. **4 marks.** MongoDB database design**.** 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 of website.	**23:00 12/2/17**	**5 marks.** Are the pages well designed and attractive? Has thought been given to usability?
HTML and CSS code quality. Layout, organization and comments.	**23:00 12/2/17**	**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.	**23:00 2/4/17**	**5 marks.** Basket **5 marks.** Checkout and confirmation
Search for products. Customers can search for products and the results can be ordered by price, category, relevance, etc. The number of products in stock is displayed in the search results.	**23:00 2/4/17**	**5 marks**. Search functionality. **5 marks**. Ordering of products by price, relevance, category, etc.
Customer registration. Customers can register on the website, change their details and view past orders. The registration data is stored on the server.	**23:00 2/4/17**	**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.	**23:00 2/4/17**	**10 marks**
Content management system (CMS). Staff can log into the site. They can view, add and edit products and view customer orders.	**23:00 2/4/17**	**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.** Management of customer orders.
AJAX communication between client and server. All communication between client and server can be implemented using AJAX. Or AJAX can be used to prevent multiple customers from purchasing the same item.	**23:00 2/4/17**	**4 marks.** Simple use of AJAX on the website. **6 marks.** Sophisticated uses of AJAX.
Testing	**23:00 2/4/17**	**2.5 marks.** Front-end functional testing (0.5 marks per test). **2.5 marks.** HTML validation (0.5 marks per test). **2.5 marks.** JavaScript unit tests (0.5 marks per test). **2.5 marks.** PHP unit tests (0.5 marks per test).
PHP and JavaScript code quality	**23:00 2/4/17**	**2.5 marks.** JavaScript code quality. **2.5 marks.** PHP code quality.
Final report. Brief description of the project. This can reuse material from the progress report. List of third party libraries that were used in the project. Contributions of each group member. Description 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.	**23:00 2/4/17**	**2.5 marks**. Does it clearly describe the project? Does the report include the contributions of each group member? Does the report list the third party libraries? Does the report document the tests? **2.5 marks**. Security, privacy and legal issues.

12. Calculation of Individual Marks

We will use the project demonstration to moderate the individual contribution values that are given in the final report. The moderated contributions will be used to calculate the individual marks from the group mark in the following way.

The variables are as follows:

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

$$im = gm + 0.33 * gm * (ic - ac)/ac$$

The result of this formula, *im*, will be limited to the range 0-100. The factor of 0.33 ensures that the adjustments for individual contributions increase or decrease the group mark by a maximum of a third.

Suppose Group A gets a mark of 55 and the individual contributions are:

- Alice: 3.
- Bob: 6.
- Carol: 9.

In this case the average contribution is 6 and the individual marks work out as follows:

- Alice: 55 + 0.33 * 55 * (3-6)/6 = 46
- Bob: 55 + 0.33 * 55 * (6-6)/6 = 55
- Carol: 55 + 0.33 * 55 * (9-6)/6 = 64

Suppose Group B gets a mark of 80 and the individual contributions are:

- Alice: 10.
- Bob: 7.
- Carol: 0.

In this case Carol made no contribution and gets zero marks for the project. The average contribution is 5.66 and the individual marks work out as follows:

- Alice: 80 + 0.33 * 80 * (10-5.66)/5.66 = 100
- Bob: 80 + 0.33 * 80 * (7-5.66)/5.66 = 86
- Carol: 0

In this case both Alice and Bob get their marks boosted because they did all of the project work without any help from Carol.

A spreadsheet for calculating the individual marks is available in the Coursework 2 section of the course website.