Cardiff School of Computer Science and Informatics

Coursework Assessment Pro-forma

Module Code:	CMT120
Module Title:	Fundamentals of Programming
Lecturers:	Federico Liberatore, Martin Chorley, Natasha Edwards
Assessment Title:	Web Application Development
Date Set:	21st November 2022
Submission date and Time:	23rd January 2023 at 9:30AM
Feedback return Date:	20th February 2023

If you have been granted an extension for extenuating circumstances, then the submission deadline and return date will be 1 week later than that stated above.

If you have been granted a deferral for Extenuating Circumstances, then you will be assessed in the summer resit period (assuming all other constraints are met).

This assignment is worth 60% of the total marks available for this module. If coursework is submitted late (and where there are no extenuating circumstances):

1. If the assessment is submitted no later than 24 hours after the deadline, the mark for the assessment will be capped at the minimum pass mark;
2. If the assessment is submitted more than 24 hours after the deadline, a mark of 0 will be given for the assessment.

Extensions to the coursework submission date can **only** be requested using the Extenuating Circumstances procedure. Only students with approved extenuating circumstances may use the extenuating circumstances submission deadline. Any coursework submitted after the initial submission deadline without **approved** extenuating circumstances will be treated as late.

More information on the extenuating circumstances procedure can be found on the Intranet: https://intranet.cardiff.ac.uk/students/study/exams-and-assessment/extenuating-circumstances

By submitting this assignment you are accepting the terms of the following declaration:

I hereby declare that my submission (or my contribution to it in the case of group submissions) is all my own work, that it has not previously been submitted for assessment and that I have not knowingly allowed it to be copied by another student. I understand that deceiving or attempting to deceive examiners by passing off the work of another writer, as one's own is plagiarism. I also understand that plagiarising another's work or knowingly allowing another student to plagiarise from my work is against the University regulations and that doing so will result in loss of marks and possible disciplinary proceedings.

Assignment

For this coursework, you are asked to:

1. Implement a **personal digital portfolio** in the form of a dynamic website, which showcases your competences, skills and expertise, e.g. your technical skills, work produced to date, previous work experience, etc. - the choice of what you want to cover it's up to you, but make sure you cover a reasonable range of these.
2. Record a short 3-min demo of your website.
3. Write a **report** to evaluate your website's quality, usability and security.

1 Personal Digital Portfolio as Dynamic Website

1.1 Website Implementation

- The website is to be implemented using any appropriate tools and methodologies, covered in this module, e.g. JavaScript, Python/Flask, HTML, CSS, databases, etc.
- The majority of your website content **must be 'dynamic'**, i.e. appropriate data and content are pulled from/pushed to a database.
    - Examples of dynamic content include, but are not limited to: interaction with the user (e.g. user comments or rating), user accounts, automatically generated web pages.
    - You can employ any type of database system/service.
- Use of external libraries, extensions and APIs is allowed, e.g. Flask-WTF, Flask-Security, Bootstrap. However, the final code **must be authored by you**. You are reminded of the need to comply with Cardiff University's Student Guide to Academic Integrity. If you use external resources, you must provide complete references, e.g. as in-line comments in your code, and/or in `README.md` file. Evidence of unfair practice will be penalised.
- Use of the code you developed when working on the lab exercises for this module **is allowed**.
- Although it's advisable to use the university laptop, you can use your own computer to implement your website. However, you **must use** School-based systems and servers for hosting 'dynamic' parts of your website, e.g. database for content and user accounts, deployment server. The use of external services for these elements is **not allowed**.
- Complete code of your website **must be submitted** to COMSC's GitLab server (https://git.cardiff.ac.uk/) and shared with the module lecturers - complete instructions on how to do it are given in 'Submission Instructions' section below.

1.2 Structure and Functionality of the Website

You are free to choose how to structure your website, and what functionality to implement, bearing in mind that appropriate advanced functionality will attract higher marks - see 'Criteria for assessment' section below.

1.3 Deployment of Website

The expectation is that initially you will be implementing and deploying your website on localhost. Deployment of your website on a localhost will allow for a mark up to a 'Pass' for the website implementation part. To obtain a higher mark, your website needs to be deployed on COMSC's OpenShift server - see 'Criteria for assessment' section. The process is described in *'Flask 4: Deployment on OpenShift'* lab sheet and is demonstrated in the practical session. Make sure you state the correct URL in your `REAMDE.md` submitted in your git repository on GitLab and in your report. If this is missing or incorrect, **it will be assumed that you have not deployed your website on OpenShift**.

2 Video Demo of the Website

Record a short video demo of **maximum 3 minutes**, which demonstrates the functionality you implemented on your website.

If you have successfully deployed your website on OpenShift, you should clearly demonstrate you are running your website using the URL you submitted in your `REAMDE.md` file.

More detailed instructions will be provided in the contact sessions.

3 Report on Website's Security, Quality and Usability

Write a report of 800 words ($\pm$ 10%), in which you critically appraise TWO examples from your website implementation that demonstrate your appreciation of best practice in security, quality and usability (choose any two).

The front page of your report must contain:

- **Your student number**
- **URL of your website on OpenShift** (if deployed)

Your report must also include two appendices at the end of your report:

- Appendix A: **list of advanced functionality** you have implemented;
- Appendix B: **screenshots of all of your website's pages**.

Learning Outcomes Assessed

- LO3: Develop secure web applications that make use of database technologies
- LO4: Critically appreciate the role of security, quality and usability within software projects

Criteria for assessment

The below table specified the criteria used for marking:

Website implementation			
Distinction 14 - 20 marks	**Merit** 12 - 13.5 marks	**Pass** 10 - 11.5 marks	**Fail** $<$ 10 marks
The website is dynamic, and deployed on OpenShift. Considerable originality and/or evidence of professionalism or scholarship demonstrated via professional system quality (including content, 'look and feel', navigation). Impressive choice of appropriate advanced functionality.	The website is dynamic, and deployed on OpenShift. Excellent choice of advanced functionality. Competent system quality (including content, 'look and feel', navigation) which requires minor improvement. Very good choice of appropriate advanced functionality.	The website is dynamic, and deployed on localhost. Reasonable system quality, although not yet of professional quality and requiring substantial improvement of content, 'look and feel', or navigation. Only basic functionality is implemented (e.g. the one that was demonstrated in the labs). There are obvious omissions or bugs that would substantially affect the operation of the website.	Static website. Poor system quality with regard to content, 'look and feel' and navigation. Functionality not implemented, or completely faulty implementation with wrong behaviour and/or output.
Video Demo			
Distinction 7 - 10 marks	**Merit** 5.5 - 6.5 marks	**Pass** 5 - 5.5 marks	**Fail** $<$ 5 marks
The video demo is well-structured and provides excellent coverage of implemented website functionality.	The video demo is well-structured and provides very good coverage of implemented website functionality, with some important functionality not demonstrated.	The video demo requires restructuring and improvement in coverage of implemented website functionality.	Disorganised video demo which requires major improvement.
Report on Website's Security, Quality and Usability			
Distinction 7 - 10 marks	**Merit** 5.5 - 6.5 marks	**Pass** 5 - 5.5 marks	**Fail** $<$ 5 marks
Interesting, insightful, focused discussion, demonstrating an excellent ability to choose relevant information and present a highly effective, fully justified argument.	Very good ability to choose relevant information and present a good argument, albeit justification needs to be stronger.	Reasonable content but limited ability to choose relevant information. Very little justification.	The report content is either missing or very limited and is in need of major improvement, e.g. information is unfocused, disorganised or irrelevant.

Feedback and suggestion for future learning

Feedback on your coursework will address the above criteria. Feedback and marks will be returned on the return date (20th February 2023) via Learning Central and/or email.

The feedback from this assignment will be relevant and useful for any future programming tasks, including your dissertation.

Submission Instructions

Your coursework should be submitted as follows:

Description	File Type	File Name	Location
(1) git repository on COMSC's GitLab server	complete source code of website	Repository name should be: `YOUR_USERNAME_cmt120_cw2`*	`https://git.cardiff.ac.uk/`
(2) video demo of the website	`.mp4` file	`YOUR_USERNAME_demo.mp4` *,**	Learning Central
(3) report on your website's quality, usability and security	`.pdf` file	`YOUR_USERNAME_report.pdf` *	Learning Central
(4) Coursework submission Details Form	online form submission	'CMT120 - CW 2 - Submission Details Form (22-23)'	link will be posted in 'Assessment' area on Learning Central

* Replace YOUR_USERNAME with your Cardiff's user name, which is typically a letter **'c'** (or **'d'**) + your student number, e.g. *c1234567*.

** In case of problems uploading the video to Learning Central, please share it through OneDrive to Martin Chorley (`chorleymj@cardiff.ac.uk`), Natasha Edwards (`edwardsn@cardiff.ac.uk`) and Federico Liberatore (`liberatoref@cardiff.ac.uk`).

More specifically:

- For item **(1)**:
  - submit (push) your complete source code to COSMC's GitLab server, and share your repository with Martin Chorley, Natasha Edwards and Federico Liberatore as follows:
    - On the Project page, go to: **Project Information** > **Members**
    - In **GitLab member or Email address** field: search for **Martin Chorley** (user name: **scm2mjc**)
    - In **Select a role** dropdown, choose **Maintainer**
    - Click on **Invite** button
    - Repeat for **Natasha Edwards** (user name: **scmne**) and **Federico Liberatore** (user name: **scmfl2**), making sure the role permission is also set as **Maintainer**.
  - Your git repository **must** include a `README` text file (`.md` or `.txt`), which contains the following information:
    - Your Username (or Student Number)
    - **(If deployed on OpenShift)** URL of your website on the OpenShift server;

    - * [Optional] References (if appropriate).
    - * [Optional] Any other information you think is relevant, e.g. how to run your code.

  - **Note: no changes are allowed after the submission deadline!** Non compliance with this requirement, i.e. working on the coursework after the deadline, may be penalised and may result in capping the mark at the pass rate (for the work submitted $<$ 24 hrs late) or an award of zero marks ($>$ 24 hrs late submission).

- For item **(2)** - see instructions in **Section '2 Video Demo of the Website'**.
- For item **(2)** - specific requirements for your **report on the website's security and usability** are given in **Section '3 Report on Website's Security, Quality and Usability'**.
- For item **(4)** - you will need to fill in and submit the online ''**CMT120 - CW 2 - Submission Details Form (22-23)'** form, the link to which will be posted in 'Assessment' area on Learning Central.

Any code submitted will be run on a system equivalent to the laptops provided to the students, and must be submitted as stipulated in the instructions above. The code should run without any changes being required to the submitted code, including editing of filenames.

Any deviation from the submission instructions above (including the number and types of files submitted) may result in a deduction of up to 25% from the overall mark.

Staff reserve the right to invite students to a meeting to discuss coursework submissions.

Support for assessment

Questions about the assessment can be asked on `https://stackoverflow.com/c/comsc/` and tagged with `CMT120`, or at the beginning of the lectures in Weeks 8-12.

Support for the programming elements of the assessment will be available in the lab classes in Weeks 8-12, or in the daily drop-in lab sessions.