Module: CMP-7003A Internet and Web Programming
Assignment: 002- Web Development Project

Set by: Dr Jeannette Chin (j.chin@uea.ac.uk)
Date set: 02 September 2021
Value: 65%

Date due: 13 December 2021
Returned by: 12 January 2022
Submission: Blackboard
Checked by: Dr Jaejoon Lee

Learning outcomes

- Design and develop a web application to the standard of a commercial prototype.

Specification

Overview

This is **a group project**. The aim of this project is to provide experience of web development, team working, and to integrate the knowledge gained in the semester to produce a high quality fully functional website/web app prototype.

Description

The Lakeside Hotel is a new independent hotel with 32 rooms on the western edge of Norwich, close to the hospital and research park. Rooms are double or twin, with standard or superior facilities.

The hotel has a gym, a bar, a restaurant, and three meeting or function rooms, accommodating between 20 and 60 people (bookings for these rooms are outside the scope of this assignment).

Bookings are made online. A booking is for one or more rooms for one or more nights.

Scenarios

1. Stephanie has a business meeting at the Norfolk and Norwich Hospital, starting at 8:30am. She prefers to fly from Amsterdam the previous day, staying overnight, and will return immediately after her meeting.
2. Jack has planned a weekend in Norwich with his wife to see the city and an exhibition at the Castle Museum. A couple of days before they're due to go, his cousin calls to say that she'll be in the area, so Jack invites her to join them. He has to find his booking details and change it to add another room for her.

Brief

This assignment requires you to construct a web application that allows:

1. For customers to:

   (a) View a description of the hotel, its facilities, the rooms and room rates, and links to facilities and attractions in the area,

   (b) Complete a booking form which allows them to book one or more rooms for one or more nights (bookings cannot be made for rooms that are not available);

   (c) View suitable information and alternative options if any rooms requested are not available;

   (d) Complete a payment form that obtains the customer's name, email address, card details for payment, and any note about the booking (Payment details are taken when the booking is made, but payment is not taken until the customer checks out.);

   (e) A booking confirmation page that can be printed or emailed to a customer.

2. For the hotel reception to:

   (f) Check hotel guests in and out of their rooms (this involves changing the room status);

   (g) Take and view payments made by customers as they check out.

3. For housekeeping to:

   (h) View checked out rooms (as these need to be prepared for the next guest);

   (i) Change the status of a room from 'checked out' (C) to 'available' (A) or 'unavailable' (X).

When you have completed the core functionality listed above, you can add facilities to allow a customer (or hotel reception staff) to change a booking, and for the hotel to produce weekly room occupancy and income reports.

(For this assignment, you *__do not need__* any login system if the housekeeper and reception pages are not linked from the room booking pages.)

The customer and housekeeping pages should all work on mobile devices. The emphasis in coding is on the group's ability to write clean, easily maintainable, well documented code (i.e. we strongly discourage the use of extensive frameworks etc. which require additional knowledge from potential maintainers or future developers of the site).

All the HTML code must be validated with style rules written in external CSS stylesheets (any in-line style tags or attributes will be penalised); frontend interactions should use JavaScript and backend server must be NodeJS; Postgres is the only permitted database management system.

Working arrangements

You will work in groups of three or four to do the assignment. Each group will set up a Trello account (including the module teaching team as members) and will maintain a record of all the group interactions and work done there. *This will be the sole repository of documentation for the project.*

Relationship to formative assessment

The project relies heavily on the work done in the formative lab exercises.

Deliverables

A. Design review

There will be a formative design review in Week 10. The design documentation (on Trello) should minimally include page designs for the core functions on (a) mobile devices, (b) desktops.

B. Demonstration (50% of CW2)

In Week 12 you and your team will have to demonstrate your project. Exact day/time will be advised in due course, it will be on the Monday that week. The purpose of the demonstration is to show the functionality of the system you have designed and implemented. You will be asked to perform a series of tests, and to answer questions about the system, its design, performance and functionality. The marks for the system will be based on this demonstration. Marks will be awarded for:

- o functionality, robustness and features implemented,
- o design, appearance and usability,
- o presentation, organisation and style of the system demonstration.

Electronic submission:

One member of each group must submit, via Blackboard, a single zip archive of the project folder for the project, so that it can be reviewed later. The file should be called groupXX.zip, where XX is your group identifier.

What to include in your electronic submission?

1. Your project code
2. One A4 page about your team (names, role and tasks/contributions) this information can be extracted from Trello.
3. One A4 page user guide of your system

C. Documentation (10% of CW2)

You must record your design options, discussions and choices on Trello. This should include:

- o personas, scenarios, and use cases,
- o assumptions about the use and context of the system,
- o lo-fi prototypes,
- o problems and limitations of your proposed solution,
- o description of the architecture and structure of the system,
- o testing and evaluation,
- o discussion of the security measures needed before the site can be made live

The principal audience for this documentation is a future developer or system maintainer.

D. Individual work (40% of CW2)

40% of the mark for this work will be for individual effort and achievement, as reflected in the overall output of the group and the evaluations of your partners in the group. The mark awarded will be based on the final system as seen in the group demonstration, and partner evaluations. The Trello boards may also be used to clarify any queries about your work.

Peer evaluation

You must complete a partner evaluation for every other member of your group, using the evaluation test that will be available on Blackboard. If you do not complete these evaluations your individual contribution will automatically be halved. Your individual mark will be based on the average of the evaluations of your contribution made by the other group members (unless there is evidence of malevolent or capricious evaluation). The evaluation test gives a score between 0 and 1 which will be used as the basis of a multiplier of the group mark, so a good evaluation of your contribution will lead to a high mark, but your evaluation of others' contribution does not affect your own mark.

Resources

A database of the hotel's rooms, some sample bookings, and some of the key queries will be provided at the same time the assignment brief is released.

For this project you must use the information you can discover unaided and you may not request further information from other people or organisations. The HTML, CSS and JavaScript resources mentioned in the lectures and lab exercises should provide the answers to many questions; the Node.js tutorial documentation is particularly and Stackoverflow has many good examples (although you must remember to acknowledge them, usually by providing the URL of where you found the source code as a comment).

The lab sessions will be devoted to providing support for the project.

Queries or clarifications concerning the brief can be addressed to Dr Jeannette Chin (j.chin@uea.ac.uk); responses of general interest will be copied to the class mailing list or Blackboard. Any clarifications to the requirements will also be posted there.

Marking scheme

The main emphasis in marking will be on the demonstrated ability to design and construct a simple dynamic website, to analyse sites offering similar services, and to produce an appropriate report on these activities.

For the software developed in this assignment, marks will be awarded for the quality of the design, the usability, accessibility and appearance of the system, and the quality of the implementation.

An indicative breakdown of marks is given on the marking sheet. Note that the distribution of marks is indicative only and may change.

CMP-7003A: Assignment 2 - presentation and demonstration marking sheet

Group Id.		
Overall design and navigation 15%	Layout and Contrast Responsiveness Ease of use and Accessibility	
Core tasks: 45%	View hotel data Complete booking form View alternative options if rooms unavailable Complete payment form View confirmation and details Check in/out (change room status) Take payment for extras (meals, drinks) View list of rooms to be cleaned Make room available or unavailable	
Other facilities 10%		
Good use of technologies, coding 10%	HTML/CSS JavaScript Node/SQL	
Testing and evaluation 10%		

Comments

Marker 1		**Marker 2**	
		Total %	**/90**

CMP-7003A: Assignment 2 - Trello documentation marking sheet

Group Id.		
Design options, discussions and choices (10%)		

Comments

Marker 1	**Marker 2**
	Total	**/10**