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| **School of Design & Informatics** |

**Assessment: Main Diet**

Module Code: CMP206

Module Title: Programming for the User

Unit of Assessment: Unit 2

Learning Outcomes Assessed: 1, 2, 3

Lecturer: Dr Andrea Szymkowiak, Dr Gavin Hales

Submission Date: by 23:59 pm on Tuesday, **23 April 2019**

Feedback Return Date: Within 15 working days of submission

Feedback Type: Blackboard

Grading Criteria: From page 7

**Submission Requirements:**

Your assessment must be submitted via Blackboard. The maximum file size which can be submitted is 20MB so you may need to reduce the size of any image files within your document. You must **submit all relevant code files** (HTML, CSS, JS) in a ZIP (**NOT RAR**) file to Blackboard alongside your report.

As part of your submission, you **must include a link to your website on the cover page of your report**. We must be able to click on this link and be taken to a full working version of your website. In most cases, this will be a link to your area on the Mayar server. However, some of you may have used an external server which is also acceptable. **Note: If we cannot access your website, you may receive an NS grade.**

For guidance on submitting via Blackboard please contact the Support Enquiry Zone on 01382 308833 or [sez@abertay.ac.uk](mailto:sez@abertay.ac.uk) if you any issues with submitting your work on Blackboard.

Submission of your work after the submission date deadline will be deemed as late submission and will incur penalty, including the possibility of the work being awarded a non-submission (NS) grade.

Also avoid plagiarism by familiarising yourself with the relevant information on Abertay University’s web pages: <https://intranet.abertay.ac.uk/library/referencing/avoidingplagiarism/>

## Design Exercise 1 of 3 – User Requirements and Persona

In this assessment you will design and prototype an app for students to book an appointment with a representative of a student service at the (fictitious) Discovery University Dundee. The app will allow students to find out about services and to specify which service they want to book. Note: You need to provide text for the services (the Lorem Ipsum place holder is not enough for your developed site).

You may **not** use any web publishing framework application such as WordPress - use of these apps will automatically result in a fail. Instead, make use of the frameworks you learned in CMP204, such as HTML5, JavaScript, php etc. This module is building on CMP204, but focuses on the **design** elements; hence, the visual appearance of your site is important. It is presumed that you know how to *develop*, i.e., code your website as you learned about that in CMP204.

**Scenario –** Discovery University Dundee provides a number of services to students to support them during their studies. These services include:

* Student Advisory Service
* Financial Advisory Service
* Disability Support
* Learning Support Service
* Mental Health and Welfare Support

At the moment, the system for booking an appointment with one of these services is done in person, or over the phone. Students have complained that there is a lack of information about these services provided by the University. Feedback has shown that in many cases, the students find it difficult or inconvenient to go and book an appointment in person, and few use the phone booking service. Students are also sometimes unsure with which service to book an appointment, depending on their needs, so more clarity on the function of a service would be helpful.

Discovery University Dundee would like you to design an online system which would allow the students to book an appointment with one of these services. They would like to show information about the service and the staff who work in each service, but not allow the students to pick who they will have an appointment with; this will be automatically decided. This system should cater to the wide demographic of students enrolled at the University.

The University have started a list of functional and non-functional requirements, shown below, but hope that you will be able to add to these with your own ideas. Add more functionality but provide not more than 10 bullet points for functional and non-functional requirements each (including the listed requirements), with a minimum of 6 each.

Functional Requirements

Note: The system must be a web application written using languages such as HTML, CSS, Javascript and PHP (or similar).

* The system must store appointments in a database.
* Students must be able to book an appointment with one of the services.
* The website must provide information about the various services available to the student.

Non-Functional Requirements

* The system must be usable for those with and without disabilities.
* User information must be stored in a secure manner.

For your first deliverable, you need to provide a list of functional and non-functional requirements. You also need to create a persona, i.e. a typical user that may be a ‘prime’ candidate for your system and a narrative exploring a future use scenario for your developed web app. Your typical persona would be a student. You can decide about the details (programmes, Degree level etc.)

**Deliverable 1**

1. Provide a list of functional and non-functional requirements
2. You can use the example overleaf to create a typical user persona that may be a candidate for the new system you are developing. For the persona provide a:

* persona description using the template (between 400-500 words). In addition to creating a persona, you should also address pain points the persona is experiencing in their current situation (at this point your new system does not exist yet)
* narrative (no example provided – you have to come up with one) to describe one typical scenario of use for the new system you are developing (around 400 words). Here you are talking about how the new system is used by the persona you developed earlier, for their benefit.

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| **Nicolle – 34 Year Old Certified Occupational Therapist from Dundee, Scotland** |



**Personal Background**

Nicolle has been an Occupational Therapist for nearly a decade. She travels daily from her home in Dundee to the city of Glasgow via train for her job. She is married to David and has two daughters aged 5 (Sydney) and 10 months (Avery), who occupy most of her time when she is not working. Her mum takes care of the children when she and David are not available during the day.

Since downtime is truly a luxury for Nicolle, she likes to take advantage of her daily commute to keep up with the television series that she has purchased season passes for on iTunes. Her iPhone is her constant companion—she uses it to keep in touch with friends and family via email and text messages, but also uses it to keep up with her patient workload. In addition, she has her high-energy playlist ready to go for her lunchtime workouts at the gym in the building where she works.

Nicolle enjoys the all-in-one aspect of her iPhone but does not like to be encumbered by the wires of her ear-buds that seem to always get tangled in her pocket. She thinks that the small, single-ear Bluetooth headsets make people look self-important to the point of being ridiculous, so she is hesitant to even consider a Bluetooth option. She is looking for headphones to make her commuting lifestyle easier.

**More about Nicolle**

**Motivators for the Product:** Nicolle’s standard iPhones ear buds cord continually gets tangled when stored in her pocket or caught up in her clothes and jacket when she is working out or walking to and from her office to the train station. It is a minor annoyance, but removing the annoyance would be very welcome.

**Product Trigger Point:** Nicolle saw the ACMEblue on display at the Apple Store on Michigan Avenue in Chicago and decided to try them on. She liked them, but went online to Apple.com and Amazon.com to check out the reviews online to further influence her decision.

**Personal Computer:** High / Fluent; comfortable with common apps.

**Internet Usage:** Medium / Fluent; not adventuresome, but has a personal blog, Flickr, YouTube for friends and family.

**Mobile:** High / Fluent; seeks new tools to help her day-to-day. Uses text messaging frequently, but not high volume.

**Social Networking:** Facebook & LinkedIn, WhatsApp; she likes to stay in touch and aware of how her friends and professionals contacts are doing.

**Television Shows:** Gogglebox, The Big Bang Theory, Come Dine with Me, Sherlock, The Crown.

**Magazines:** Stays current with celebrity and parenting periodicals.

## Design Exercise 2 of 3 – Prototyping and User Testing

In this second part of the design exercise you will be asked to create your first prototype and carry out an evaluation with 3 testers. Your design is mainly for use by a typical user, but also consider the needs for people with disability for your prototype.

For the first prototype we want you to create **a hand-drawn or enhanced (with content) wireframe prototype** of all the screens needed for the app. Note that it is possible to make paper prototypes interactive using tools such as the POP app for iOS or the site [www.invisionapp.com](http://www.invisionapp.com).

For this stage you can assume that you:

* Hold a list services and some information about the services.
* Hold a list of staff working in each service.
* Need to provide some calendar function with the possibility of reminding students of appointments.

Once your prototype screens are ready, decide upon 3 tasks to set your typical users (same tasks for each user) to try out the prototype with your classmates as testers. Get them to go through these tasks, giving you feedback at each step. Justify the selection of tasks. Also use the System Usability Scale to evaluate your design.

**Deliverable 2**

* A set of prototype screens for the complete app.
* A statement of the 3 tasks selected for evaluation (and why they were selected).
* A report on the outcome of the evaluation (no more than 500 words) with 3 testers. You can consider how long it took users to do some tasks, or whether they could do a task.
* You should also use the System Usability Survey (e.g. https://www.usability.gov/how-to-and-tools/methods/system-usability-scale.html) and report the scores, providing a brief interpretation of the findings. There is a pdf file in the ‘Practical’ folder regarding how to analyse and score the responses.

**Important Reminder**

**Remember that your submission for this unit must be as a single PDF document. This will involve scanning of paper prototypes.**

## Design Exercise 3 of 3 – App Prototype Development and User Testing

In this part you will refine your prototype and develop your app as a result of the first evaluation:

* From the results of your first evaluation now create a second prototype of the app.
* This second prototype should be developed using web technologies such as HTML, CSS, Javascript.
* The developed prototype does not have to be designed to a fully complete standard but should be close to the finished site. Where functionality is not complete, examples should be used to allow the user to walk through the app.
* Brief 3 other testers (not your first testers) to go through the same tasks that you used for your first evaluation; also use the system usability survey, so you can get an idea about the perceived usability (e.g. the System Usability Scale, provided on this link: <https://www.usability.gov/how-to-and-tools/methods/system-usability-scale.html> ; provide mean, mode or median score for the ratings, with the raw data for each item.
* Compile a report that summarises and compares the two evaluations with typical users and detail how your app addresses issues found in the first prototype.

**Deliverable 3**

* A functioning prototype developed using web (or other appropriate) technologies.
* A report on the second evaluation with a comment on how things have changed based on the first evaluation and what remains to be done in the next prototype, and the scores and interpretation of the SUS survey (around 500 words).

## Unit Grading Criteria (all weighed equally)

* Appropriateness (relevance of) functional/non-functional requirements
* Extent to which persona and usage scenario descriptions bring a user to life (e.g., detail of description with a realistic, personable persona)
* Extent to which *progression* of website is visible from prototype development and details/usefulness of evaluations (e.g. surveys used, relevance of tasks etc.), including future development, based on the reports provided
* Extent to which good programming practice is achieved (separate files for CSS, html5 etc.)
* Extent to which content, organisation and navigation of the interface meets functional requirements
* Extent to which content, organisation and navigation of interface meets usability requirements in relation to target demographic

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| **Literal grade** | **Grade Point** | **Evaluative descriptor** | **ECTS** |
| A+ | 4.5 | Excellent overall.   * Highly appropriate and relevant functional/non-functional requirements * Persona and usage scenario bring a user to life. There is great detail provided in both descriptions. * Clear progression of website is visible from prototype development and great details are provided in the evaluations, which indicate the development of the website (e.g. surveys used, relevance of tasks etc.), including future development * Excellent use of good programming practice (separate files for CSS, html5 etc.) * Excellent match of content, organisation and navigation of the interface with functional requirements * Excellent match of content, organisation and navigation of interface with non-functional and usability requirements in relation to target demographic   Exceptional in at least one of the above. | A |
| A | 4 | Excellent overall.   * Highly appropriate and relevant functional/non-functional requirements * Persona and usage scenario bring a user to life. There is great detail provided in both descriptions. * Clear progression of website is visible from prototype development and great details are provided in the evaluations, which indicate the development of the website (e.g. surveys used, relevance of tasks etc.), including future development * Excellent use of good programming practice (separate files for CSS, html5 etc.) * Excellent match of content, organisation and navigation of the interface with functional requirements * Excellent match of content, organisation and navigation of interface with non-functional and usability requirements in relation to target demographic | A |
| B+ | 3.5 | Very good overall.   * Overall appropriate and relevant functional/non-functional requirements; only very minor gaps in the list of requirements * Persona and usage scenario bring a user to life. There is very good detail provided in both descriptions, but the descriptions could be more life-like and realistic * Very good progression of website is visible from prototype development and details are provided in the evaluations, which indicate the development of the website (e.g. surveys used, relevance of tasks etc.), including future development * Very good use of good programming practice (separate files for CSS, html5 etc.) overall * Very good match of content, organisation and navigation of the interface with functional requirements; some minor gaps may be evident * Very good match of content, organisation and navigation of interface with non-functional and usability requirements in relation to target demographic overall; some minor gaps may be evident   Excellent in at least one of the above but overall performance deemed to be very good. | B |
| B | 3 | Very good overall.   * Overall appropriate and relevant functional/non-functional requirements; only very minor gaps in the list of requirements * Persona and usage scenario bring a user to life. There is very good detail provided in both descriptions, but the descriptions could be more life-like and realistic * Very good progression of website is visible from prototype development and details are provided in the evaluations, which indicate the development of the website (e.g. surveys used, relevance of tasks etc.), including future development * Very good use of good programming practice (separate files for CSS, html5 etc.) overall * Very good match of content, organisation and navigation of the interface with functional requirements overall; some minor gaps may be evident * Very good match of content, organisation and navigation of interface with non-functional and usability requirements in relation to target demographic overall; some minor gaps may be evident | B |
| C+ | 2.5 | Good overall.   * Overall appropriate and relevant functional/non-functional requirements; some clear gaps in the list of requirements * Persona and usage scenario sufficient to bring a user to life. There is good detail provided in both descriptions, but the description may lack relevance and/or detail * Good progression of website is visible from prototype development and sufficient details are provided in the evaluations, which indicate the development of the website (e.g. surveys used, relevance of tasks etc.), including future development; the development may show gaps or aspects where it is unclear how or why they have been implemented * Use of good programming practice evident (separate files for CSS, html5 etc.), but some lapses * Good match of content, organisation and navigation of the interface with functional requirements; some gaps may be evident * Good match of content, organisation and navigation of interface with non-functional and usability requirements in relation to target demographic; some gaps may be evident   Very good in at least one of the above but overall performance deemed to be good. | C |
| C | 2 | Good overall.   * Overall appropriate and relevant functional/non-functional requirements; some clear gaps in the list of requirements * Persona and usage scenario sufficient to bring a user to life. There is good detail provided in both descriptions, but the description may lack relevance and/or detail * Good progression of website is visible from prototype development and sufficient details are provided in the evaluations, which indicate the development of the website (e.g. surveys used, relevance of tasks etc.), including future development; the development may show gaps or aspects where it is unclear how or why they have been implemented * Use of good programming practice evident (separate files for CSS, html5 etc.), but some lapses * Good match of content, organisation and navigation of the interface with functional requirements; some gaps may be evident * Good match of content, organisation and navigation of interface with non-functional and usability requirements in relation to target demographic; some gaps may be evident | C |
| D+ | 1.5 | Satisfactory overall.   * Overall appropriate and relevant functional/non-functional requirements; some major gaps in the list of requirements or in part irrelevant requirements * Persona and usage scenario only partially successful in creating a typical user. Detail is missing and the narratives are skeletal * Progression of website is visible from prototype development and details are provided in the evaluations, which indicate the development of the website (e.g. surveys used, relevance of tasks etc.), including future development; the development may show major gaps or aspects where it is unclear how or why they have been implemented * Use of programming practice evident (separate files for CSS, html5 etc.), but some major lapses or use of irrelevant practices * Partial match of content, organisation and navigation of the interface with functional requirements; some major gaps may be evident * Partial match of content, organisation and navigation of interface with non-functional and usability requirements in relation to target demographic; some major gaps may be evident   Good in at least one of the above but overall performance deemed to be satisfactory. | D |
| D | 1 | Adequate.   * Overall appropriate and relevant functional/non-functional requirements; some major gaps in the list of requirements, or in part irrelevant requirements * Persona and usage scenario only partially successful in creating a typical user. Detail is missing and the narratives are skeletal * Progression of website is visible from prototype development and details are provided in the evaluations, which indicate the development of the website (e.g. surveys used, relevance of tasks etc.), including future development; the development may show major gaps or aspects where it is unclear how or why they have been implemented * Use of programming practice evident (separate files for CSS, html5 etc.), but some major lapses or use of irrelevant practices * Partial match of content, organisation and navigation of the interface with functional requirements; some major gaps may be evident * Partial match of content, organisation and navigation of interface with non-functional and usability requirements in relation to target demographic; some major gaps may be evident | D |
| MF | 0.5 | Marginal fail.  Performance just below the threshold standard. Marking criteria only partially addressed, with skeletal work for deliverables provided only. A reasonable expectation that a pass is achievable by reassessment without the need to repeat the module | MF |
| F | 0.0 | Fail.  Performance well below the threshold level. Some very limited evidence of achievement of the outcomes and meeting of learning criteria. Material provides little match with required deliverables | F |
| NS |  | No assessments submitted. | NS |