Creating a Prototype Web-based Multimedia Application

DUE: 4pm Tuesday 10th November, 2020

THE BRIEF:
You are required to **design** a web-based multimedia application and **build a prototype** version of it. This prototype application must be built using **HTML5 + CSS + JavaScript** technologies, with the support of libraries and frameworks. The general topic of the application should be something to support computing study. E.g. (choose ONE)

1. An interactive instructional course, e.g. learn how switching gates work, basic computational thinking, sorting and searching algorithms
2. An introduction to a software package
3. What every computing science student needs to know about your university
4. An interactive game for school children to switch them on to computing.
5. Another topic of your choice related to studying computing. (Check with the module coordinator if you are unsure.)

Use the work of the *CSCU9N5 multimedia practicals* as a guide to the kinds of features that you could incorporate. Be informed and inspired by any other multimedia applications and web pages that you are aware of as sources of ideas. Be creative!

Treat the assignment as a "commercial" exercise: you have a deadline for producing your design and prototype (i.e. the assignment submission date) and you have a "budget" – it is worth 60% of your overall marks for the module. Use these criteria to determine how long you should spend on the assignment and how much to produce. *(If at any stage you are unsure whether you need to do more (or less) work, then please ask).*

ASSIGNMENT SUBMISSION:

There are **TWO** components to the hand-in for the assignment:

1. *A design report (worth 60% of the assignment mark)*
2. *A prototype multimedia application (worth 40% of the assignment mark)*

The sections below give more detail on the requirements and the breakdown of marks.

1. THE REPORT

The report should be in the form of a design document (14 pages or less in length) that fully documents your design for a multimedia application. Remember that you should design a whole product, but only have to build part of it to illustrate the idea. Your report should detail a consistent design process and *be specific to your development.* Generic information about design and testing procedures should **not** be included. **5% of the marks** are for the overall quality and structure of the report itself.

The report should contain the following:

- Your student **ID** number (NOT your name – we will try to keep marking anonymous, but this will obviously depend on the distinctiveness of your presentation), the **title** of your application, and the file name of main HTML file**.**

- A description of the general concept of the presentation – What is it? Who is it aimed at? How would you deliver it? This should include an **overview** of who your target users are and **two specific distinct personas,** each with a scenario detailing an **activity, context** and **technology**. [**14% of assignment marks]**
- Details of the design of your entire application, including wireframes of major screen layouts, and a navigation map showing how these interconnect. Thoroughly **justify** your design choices. An excellent submission will have substantial support for these decisions in terms of references to design guidelines, heuristics, principles. How does your design satisfy the needs of your personas and scenarios? **[22%.]**
- A description of what your built prototype version contains, justifying why you have implemented the parts that you have to create the prototype version, and how this particular version of the overall system will help you evaluate your design. **[4%]**
- Testing: a plan of appropriate usability testing. Consider both the usability testing you can carry out independently, and also the form of user testing you might use on this prototype (given lots of time and resources). Note: you are not expected to carry out all of this testing: you are documenting the professional process you would follow. Further, indicate clearly which usability testing you have done, and its results. What can you conclude from these tests about your design? Lastly, assume the product goes to customers: how will you continue to get feedback from the users? **[15%]**
- A **list of all sources** for any media and external CSS and JavaScript libraries used in the prototype (i.e. web addresses, references scanned from etc), with a **short description** of what any external libraries are used for. **[0%]**

Note: you should design the whole application, but build a prototype (restricted) version of it.

2. THE APPLICATION PROTOTYPE

Using HTML5+CSS+JS, you will build a prototype version of your designed multimedia application. Your prototype should clearly demonstrate the concept of your design, good use of multimedia, and technical competence with dynamic web development, BUT is not necessarily a complete implementation of your design. An excellent submission will satisfy all of these criteria. The allocation of marks is:

- **15%** for good use of multimedia elements,
- **15%** for the quality of the prototype in terms of how well it demonstrates your concept,
- **10%** for technical competence in web technologies.

As a prototype, your application should:

- Show examples of all information presentation styles to be used in the final product.
- Include examples of all types of navigation and interaction to be employed.
- Clearly indicate when material is missing or will be different in the final system e.g. never have a clickable button that does nothing! At least have a text box describing what should happen.
- Use **relative URLs** to local content (images, web pages) where possible so that the application can be run on the **local file space** (and not via a web server).

The emphasis in the prototype is NOT on the quality of media you have available, but on the sensible integration of different media (text, graphics, animation etc) and the usability of the system (e.g. is it easily navigable). So *do not spend long on producing original media*. Where you

would use different media in the final product, this should be indicated in the prototype (e.g. a still image in place of a video, with some text indicating this). You may be able to find suitable media on the Web, or in books, magazines etc, but beware of copyright issues. Be sure to reference your sources in your report.

You are allowed to make use of third party CSS frameworks and JavaScript libraries (such as JQuery, Bootstrap, W3.CSS etc), but how you make use of them must be clearly documented in your report. Remember to supply the library files with your submission (unless they are linked to via a web address).

Submission:
By 4pm on the submission date

- **Upload your report to Canvas (it will go to Turnitin).**
- **Put your finished application files in a folder, compress it (zip) and upload this to Canvas.** Ensure that your application runs successfully! Remember to also copy any linked external media, such as video files.

Plagiarism
Work which is submitted for assessment must be your own work. Plagiarism means presenting the work of others as though it were your own. The University takes a very serious view of plagiarism, and the penalties can be severe (ranging from a reduced grade in the assessment, through a fail grade for the module, to expulsion from the University for more serious or repeated offences). Specific guidance in relation to Computing Science assignments may be found in the Computing Science Student Handbook. We check submissions carefully for evidence of plagiarism, and pursue those cases we find.

All students should note that the University has an agreed policy setting out procedures and penalties for dealing with academic misconduct. This policy can be found on the University's portal http://www.stir.ac.uk/academicpolicy/handbook/assessment/. The policy also gives guidance on proper and adequate acknowledgement of source material, but if students are in any doubt at all about the nature of plagiarism, or the means by which to avoid it, students are strongly advised to consult their tutor. Students should clearly understand that it is their responsibility to be sure they understand these matters. Ignorance is not accepted as a defence for plagiarism.

Assignment hand-in extensions
Students who can show good cause may be permitted extensions to the assignment deadline. "Good cause" may include illness, for which a medical certificate or other evidence will be required. If you have personal difficulties outwith your control affecting your ability to study or complete assessments, see the online guidance about extenuating circumstances.
Students must request an extension by contacting the module coordinator, supplying relevant evidence, no later than seven days after the published assignment deadline. Extensions will be granted for acceptable reasons only, and will not normally be beyond such time as solutions and feedback are returned to the rest of the class.

Late submission
Without an agreed extension, the assignment will be accepted up to seven days after the hand-in deadline (or expiry of any agreed extension) but the grade will be lowered by 3 marks (out of 100) per day or part thereof. After seven days the work will be deemed a non-submission and you will receive 0 marks for this assignment *and a Fail grade for the module*.