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| **JAVASCRIPT**  Assignment: **Build “Connect 4” in JavaScript**  Class: **2nd Year Interactive Media – Term 1**  Assessing Tutors:  **Ruairi Browne**  **Dee Maher**  **David Randall**  **Eanair O’Connell** | **DIDb&W** |

**Duration:** 8 WEEKS

**Part Time Day:**

**Assignment Start date:** Weds 6th November 2013 **Final Presentation date:** Weds 11th December 2013

**Part Time Evening:**

**Assignment Start date:** Thurs 7th November 2013 **Final Presentation date:** Thursday 12th December 2013

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**General Requirements for Students:**

1. It is the student’s responsibility to deliver the project to the relevant Tutor/s
2. Extensions to assignment submission deadlines will be granted in exceptional circumstances only.

Where a submission involves digital work it is the student’s responsibility to ensure that the work is left in the allocated place, staff will not gather student work from individual computers, also work will not be accepted by E-Mail unless otherwise indicated.

1. Students should refer to the assessment regulations in their Course Guide. Dublin Institute of Design penalizes students who engage in academic impropriety (i.e. plagiarism, collusion and/or copying). Please refer to the referencing guidelines attached for information on correct referencing.
2. This major project will include **all learning outcomes** from the following **2 Units**;

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**UNIT 76: INTERACTIVE MEDIA TECHNOLOGY**

**Learning Outcomes**

76.1 Understand interactive media technologies

76.2 Be able to identify users’ needs for the development of an interactive media product

76.3 Be able to develop an interactive media product

76.4 Be able to select technologies for an interactive media application.

**THE BRIEF:**

**Part 1: Functional Specification**

*Functional specifications (functional specs), in the end, are the blueprint for how you want a particular web project or application to look and work. It details what the finished product will do, how a user will interact with it, and what it will look like. By creating a blueprint of the product first, time and productivity are saved during the development stage because the programmers can program instead of also working out the logic of the user-experience. It will also enable you to manage the expectations of your clients or management, as they will know exactly what to expect.*[*http://www.mojofat.com/tutorial/*](http://www.mojofat.com/tutorial/)

You are required to write a functional specification for the online game of Connect 4. The specification should document how the software will operate, how the user will interact with the software, what technology the software will use, and all the options and functionality contained in the application.

Your functional specification should identify the user’s needs. What us the purpose and function of the software? What information is stored and processed? What navigation is required? Is social media a factor (posting to Facebook etc).

Your functional spec is not a technical spec but it is an opportunity to decode what browsers will be supported, will HTML5 be used, what computing power will be needed, what bandwidth will be used?

You should specify what technology you are going to use and why. You should relate this to user requirements i.e. The game will utilise CSS3 because CSS2 does not provide x and requiring the user to use a browser that supports CSS3 is worth it to have the functionality of x.

**Part 2: Screen Designs & Wireframes**

You are required to design the main game screen and any other screens that are required for the creation of the application. Also keep a sketchbook of design details such as markers, the game grid, and other elements.

**Part 3: Prototype**

One of the more difficult and therefore expensive (developers cost money!) elements of the project is the algorithm to determine if a player has won. Therefore it is likely that in a commercial situation a prototype would be built that would allow two users to play “Connect 4” but not determine when one player had won the game. Develop a prototype of this functionality and keep it separate and safe before you proceed to developing the full game.

**Part 4: Finished Application**

Learn how “Connect 4” works and provide an online game with the same functionality. The game should work on a modern browser and it is essential that it works in IE, Firefox, and Chrome at a minimum. Graceful degradation of features is acceptable but gameplay should not suffer. The game should have nice finishing touches such as a scoreboard, player’s names, a reset button, and an “I give up” button”. It is necessary that a user should be able to play against the computer or against a friend using the same computer and taking turns. However the computer does not have to be very smart – the computer randomly dropping markers into the columns of the grid is fine.

**Part 5: Evaluation and Critical Analysis**

Write a report on your project and demonstrate how you planned the project, what decisions you made and why, how you could have done things better given more time, and finally evaluate whether JavaScript was the right technology choice for this project.

**You are required to submit;**

1. A 2000 word specification document detailing your application functionality
2. Your research sketchbooks
3. All digital files relating to your prototype
4. All digital files relating to your web application
5. A 500 word analysis and critique of the finished product

**Warning**

There is an abundance of “Connect 4” games developed in JavaScript on the web. The lecturer marking this paper will be familiar with as many of them as possible and plagiarism will result in the student being penalised. As part of your presentation you will be expected to talk through your code and explain it in detail. If you use small amounts of code from an online tutorial or other source it is imperative that you understand the code and change it to suit your coding style and naming conventions.

**Suggested Timeline to Ensure Adequate Lecturer Feedback:**

**WEEK 3** Presentation of your developed functional specification for feedback

**WEEK 5** Presentation of your prototype web application

**GRADING BREAKDOWN: Applicable Learning Outcomes**

1. **A 2000 word specification document detailing your application functionality**

76.1 Understand interactive media technologies

76.2 Be able to identify users’ needs for the development of an interactive media product

76.4 Be able to select technologies for an interactive media application.

1. **Your research sketchbooks**76.2 Be able to identify users’ needs for the development of an interactive media product

76.3 Be able to develop an interactive media product

1. **All digital files relating to your prototype**

76.1 Understand interactive media technologies

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1. **All digital files relating to your web application**

76.1 Understand interactive media technologies

76.3 Be able to develop an interactive media product

76.4 Be able to select technologies for an interactive media application.

1. **A 500 word analysis and critique of the finished product**

76.1 Understand interactive media technologies

76.4 Be able to select technologies for an interactive media application.

**Presentation & Submission**

When presenting work for assessment, all individual pieces of work must be clearly labelled with:

* Student name
* Class
* Project title
* Submission date
* Lecturers name

If you are submitting a presentation piece, ensure that your details are printed on the back of the boards.

**ALL DIGITAL SUBMISSIONS MUST BE COPIED TO THE APPROPRIATE FOLDER ON THE W:\ DRIVE**

**PLEASE FOLLOW YOUR LECTURERS INSTRUCTIONS TO SUBMIT YOUR DIGITAL WORK**

* When presentingwritten work for assessment, all work must be typed and professionally presented in an A4 binder, unless otherwise indicated. Any hand written work will not be accepted and receive a referral.

**Grading Criteria**

Please be aware that you do not achieve a grade on each Unit until all four learning outcomes for that Unit have been achieved. This project may have several of the four learning outcomes that count towards a complete Unit. However you must achieve each of the four learning outcomes to complete a Unit.

***Referral:*** A referral grade is given on a Unit where the students work has:

* 1. Missed the appropriate deadline for submission of the work.
  2. Has not met all of the criteria to achieve a Pass *(EG. The student is asked to produce, three piece of required work applicable to the learning outcome(s) and only produces two. The basic criteria have not been met.)*
  3. The work is not of an acceptable standard, *(poor presentation, poor quality of work. evidence that student has not completed the project by themselves, and failure to achieve each learning outcome for that Unit as required by the brief)*

***Pass:***

A Pass is achieved by you meeting all the requirements defined in the assessment criteria for each particular unit. Keep in mind that you will only pass a Unit once all four learning outcomes for that Unit have been achieved.

***Merit*:**

In order to achieve a Merit, you must achieve at least one element from each of M1, M2 and M3:

1. Identify and apply strategies to find appropriate solutions

* complex problems with more than one variable have been creatively explored
* an effective approach to study and research has been creatively applied

1. Select / design and apply appropriate methods / techniques

* the design of appropriate methods/techniques has been justified
* appropriate learning methods/techniques have been applied

1. Coherently present and communicate work, using technical language correctly

* a range of methods of presentation have been used and technical language has been accurately used
* the communication is appropriate for familiar and unfamiliar audiences and appropriate media have been used
* coherent, logical development of principles/concepts for the intended audience

***Distinction:***

In order to achieve a Distinction, you must achieve at least one element from each of D1, D2 and D3:

1. use critical reflection to evaluate own work and justify valid conclusions

* conclusions have been arrived at through synthesis of ideas and have been justified
* self-criticism of approach has taken place
* realistic improvements have been proposed against defined characteristics for success

1. take responsibility for managing and organizing activities

* substantial projects or investigations have been planned, managed and organized
* the unforeseen has been accommodated effectively
* the importance of interdependence has been recognised and achieved

1. Demonstrate convergent / lateral / creative thinking

* self-evaluation has taken place and demonstrated
* innovation and creative thought have been applied
* receptiveness to new ideas is evident
* effective thinking has taken place in unfamiliar contexts
* All student work is assessed by the Academic Board and results are verified by External Examiner(s) and Academic Board.