

Robotics

Robotics - Sumo Wrestlers

Assessment Details

#	Level	Credit	Title
5967	3	5	Create a computer controlled robot using a kit set
2789	3	5	Produce desktop published documents for organisation use
2785	3	5	Create a computer spreadsheet to provide a solution for organisation use
18737	3	5	Create a website for organisation use
5953	3	3	Demonstrate an understanding of project management using a computer application

Brief:

You are to design and build a robot using the provided Lego Mindstorm kits that will compete in a sumo wrestling competition.

You will work in teams of 2-3 to complete this project. Each team member will have a designated role but will be expected to contribute to the design and construction of the robot in a meaningful way.

Each team will create and maintain a web based journal for recording progress and modifications throughout the design process. Each team member will be expected to contribute to this record.

You have 4-5 weeks of class time to complete the robot. The project will end in a class competition to find the most successful robot.

Robot Sumo Wrestling Rules:

1. The competition will consist of a series of knockout rounds until two finalists emerge. The winner of the finals will be determined the winner of the competition.
2. Each round will consist of three matches.
3. Two robots per match.
4. Matches will begin with the competing robots facing each other.
5. One designated team member will activate the robot and hold it until the match official indicates the match has started.
6. The winning robot will be determined as the one who successfully maneuvers the opposition over the edge of the match ring.
7. The losing robot will be determined by any part that touches the ground crossing over the edge of match ring.
8. A tie will be determined if neither robot wins or both are incapacitated. In the event of a tie the winner will be decided by the number of previous wins.
9. All robots must have at least one part touching the ground.
10. The match ring will be constructed of a black ring with a white center. There will also be a white area outside the match ring.
11. The match officials' decision is final. No correspondence will be entered into.

Requirements

You need to provide the following elements:

Brief documentation that includes:

- An overview that describes the project in summary, the purpose of the robot and the development process (in summary)
- Research that identifies:

- existing uses of robots
- requirements of robots: reliability, obedience, strength, ability for contextual learning
- how robots interact with humans, AI, issues with self-awareness
- components to be used in the sumo robot (Touch sensor, Light sensor, Gears, Wheels).
- A list of components required to build the robot. This should include a list of the key mechanical elements and the software you will use to programme the robot.
- The role of each member in the group each with a list of tasks to complete
- A budget: includes time and money (\$80/hour)
- A plan of time allocation of each group member
- Planning for the print material including: target audience, concept sketches, tasks and milestones

Concept Design:

- Sketches and notes that outline and justify a final solution based on research and exploration
- STAIR documentation that identifies the logic required for the robot to achieve the set task

Testing and Evaluation:

- Test plan that includes functional testing
- Final test results documented
- A final check that verifies the robot meets the requirements of the brief and is well constructed and robust

Web Site:

- A journal that records progress: date, name of reporter, progress report, modifications made, future plans, photo (if relevant)
- An evaluation of the final solution that:
 - Verifies the robot is capable of accomplishing the set task
 - Verifies the robot is not hazardous to people, itself or other robots (ie. It should not destroy the other robot)

Print advertising for Robot:

- Folded document
- Includes at least one photo of the final robot
- Outlines the features of the final robot

A final robot that has:

- Passed all requirements of 4 Mini Tasks
- Successfully completed the main set task
- Been tested and modified

Timesheet

- Completed timesheets that report on each member's time spent on the project and related tasks
- Weekly reports that identify resourcing and milestone issues

Resources

- [Rescue Robots](#)
- [Isaac Asimov: Three Laws of Robotics](#)
- [Cutting it - Intelligent robots in the meat industry](#)

Software Development: Virtual Pet

Assessment Details

#	Level	Credit	Title
18749	3	5	Create a simple graphical user interface (GUI) for a computer application
18741	3	6	Create a computer program to provide a solution
5953	3	3	Demonstrate an understanding of project management using a computer application
5955	3	5	Demonstrate an understanding of documentation for computer applications
2789	3	5	Produce desktop published documents for organisation use
90613	3	8	Develop a conceptual design to address a client issue

Brief:

You are to design a virtual pet for *Outside the Square*. Canterbury Development Corporation Outside the Square (OTS) works with aspiring young people, schools, businesses and the wider community to build an enterprising culture in Canterbury. Outside the Square is presently working with Secondary Schools to assist with "Education for Enterprise". The overall goal for the virtual pets will be to act as a tool for students to develop enterprising attributes.

You will be required to arrange times and meet with Outside the Square staff to discuss and document the requirements for this project and will liaise with them over the course of the project to ensure the final solution meets their requirements.

You will design the visual interface and functionality for the virtual pet to fit the specifications and programme using C#. Outside the Square staff will choose a range of virtual pets for release on their web site for students to download.

Project management is a key component of this project and you will be expected to provide a breakdown of the tasks and timeframes before you begin concept work. Ensure that you include time for the design of the GUI, programming, testing and user documentation.

You will be required to provide schedules for user testing and functional testing throughout the design process. It is particularly important that you ensure you test during your concept development stage and report back your customer.

Interaction with the customer will be managed carefully and you will need to identify the key stages when you will need their feedback. Ideally they should be made aware of these timeframes during the analysis stage. All email conversations must be copied to College of Computing staff.

You need to provide the following elements:

Brief documentation that includes:

- An overview that describes the project in summary, the purpose of the virtual pet, the target audience (described using persona) and the development process (in summary)
- Research that identifies: existing virtual pets, characteristics of existing virtual pets, and existing target audiences and their expectations of virtual pets
- Descriptions of the key stakeholders of this project
- The key factors that will influence this project prioritised based on their order of influence. You will be expected to justify your prioritisation
- A budget of time required and associated costs. You will charge out at \$40/hour
- A breakdown of tasks with associated resources (time and material) completed using a project management tool
- Planning for the print material including: target audience, concept sketches, tasks and milestones

Concept Design:

- Sketches and notes that outline and justify a range of ideas
- Rendered versions of the best concepts for presentation to Outside the Square staff
- Documentation that outlines the functional requirements (eg. psuedocode) of the virtual pet
- A structure diagram to illustrate your C# program design
- A desk check plan to check if your program's logic and structure is correct
- Printed interface screens based on a final concept that outlines the key functionality and can be used for paper-based user testing
- User test results showing the concept is sound
- Concept sign-off from the customer

Graphical User Interface:

- A final rendered graphical user interface for a virtual pet application
- A print out of the code with interface elements identified and highlighted
- Screen size: 80mm x 55mm

Programming:

- Virtual pet solution using C# programming language
- Executable (.exe) virtual pet programme file. This executable file should be able to run in MS Windows (.NET architecture)
- Programme code used to compile the executable
- The program should include keyboard/mouse input, screen output, loops, decision making, arithmetic calculations, and descriptive comments

User Documentation:

You will need to plan time for the design of user documentation for your virtual pet. This user documentation will be delivered along with the application and must be appropriate to the target audience(s). You will use Scribus, an open source desktop publishing tool to complete the documentation.

You will need to:

- Discuss of the principles of user documentation. This might include but is not limited to: installation, operation, help, quick reference
- Identify the key requirements of your user documentation
- Identify the tools required to build the user documentation
- Research existing user documentation and identify postive elements and design faults
- Design a user document for your virtual pet that follows conventions (based on your research)
- Outline a test schedule for your user documentation (both user and functional testing needs to be included)
- Provide final user document in PDF format

Testing and Evaluation:

- Test plan that includes functional and user testing
- Final test results documented
- A modifications document that outlines key changes made throughout the process
- A final check that verifies the virtual pet meets the requirements of the brief
- A final evaluation outlining what was completed well and what could be improved. This

evaluation will identify the following key competencies learned on this project: self-management, ability to relate to others, participation and contribution, thinking processes, and language use.

- Final sign-off from the client

Technology Assessment

- [Assessment schedule for Conceptual Design Assessment](#)

Resources

- [Outside the Square web site](#)
- [Education for Enterprise](#)

Recommended Reading

- [The Origin of Personas, Alan Cooper](#)
- [Using Personas to Create User Documentation, Steve Calde](#)
- [The Inmates Are Running the Asylum: Why High-Tech Products Drive Us Crazy and How to Restore the Sanity](#)

Web Design

Web Site - Project 1

Assessment Details

#	Level	Credit	Title
18737	3	5	Create a website for organisation use

Brief:

The current Hagley Community College web site has recently been migrated to the Drupal content management system and is undergoing a structural redesign. The visual style is dated and not flexible enough to support the increased level of functionality now available.

You are to provide a visual and structural redesign for the Hagley Community College web site to reflect the current brand more effectively and provide modified markup that can be converted to a PHP template for use in Drupal.

The site will support multiple types of user including: public, teachers, students, administration, management and the site administrators with different levels of control (based on roles set in Drupal). Different roles will see different types of navigation and administration.

The redesign will need to include examples of at least 5 areas of content and demonstrate the final development so the designer setting up content can see how you expected the style to work with different types of content.

You will be required to clearly identify and describe the respective target audiences for the project and provide a simple user manual that outlines the different levels of control available to each target audience.

The site will use *XHTML 1.0 Strict* and *Cascading Style Sheets* and will need a consistent appearance across the range of major browsers including, but not limited to: Mozilla Firefox, Microsoft Internet Explorer Safari. You will need to find an appropriate way to test your templates across a range of operating systems: Windows XP, Linux, OSX (you may use any distribution of Linux and any of the recent versions of OSX).

Requirements:

- XHTML/CSS template that can be migrated to a PHP template
- a clear breakdown of the different target audiences using persona
- examples of the style operating with at least five different types of content
- the template must validate and appear consistently in the major browsers listed above across the operating systems specified
- the Hagley Community College brand must be clearly identified and applied to your visual style

Assessment Requirements

- Brief Documentation that includes:
 - an overview of the project
 - identification of the target audiences using persona to document
 - the project requirements
 - technical specifications that include a site structure
 - a breakdown of the tasks required at each stage of the design process to complete this project
 - a budget
- A web site:
 - based on the requirements and specifications in the brief

- at least 6 ideas explored through concept sketches and design notes
- use valid XHTML and CSS
- upload to server
- hand in a local copy
- Test Plan: this should include, but is not limited to:
 - results for XHTML and CSS validation
 - link integrity
 - brief requirements
 - accessibility
- Simple User Manual:
 - a description of the site and it's purpose
 - explanations of important areas of the site. eg. navigation
 - screenshots where relevant

Resources

- [Best Web Designs Of World](#)
- [A List Apart](#)
- [Jakob Nielsen: Usability](#)
- [CSS Zen Garden](#)

Spreadsheets

Fundamental Skills: Spreadsheets

Assessment Details

#	Level	Credit	Title
2781	2	3	Manage and protect computer data in a personal computer system
2785	3	5	Create a computer spreadsheet to provide a solution for organisation use

Overview:

This unit will be fulfilled in two parts

Part 1

Throughout the year you will be required to record the time spent on projects on a task-by-task basis. To facilitate this you are required to produce a spreadsheet that allows you to record project information and report on the data over time.

You will need to demonstrate the ability to add data to a spreadsheet, format data, use formulae and generate a range of (useful) reports. You will also need to demonstrate, over time that you have implemented a personal system for adding data to the spreadsheet.

Part 2

Integrating the lessons on Linux shell commands, you will do an experiment to find out the compressibility and efficiency of three data compression programs used in Linux. You will be creating a spreadsheet to display and analyse results of your findings. Scroll down to the end of the page to download the experiment sheet.

Brief (Part 1):

You are required to design a template for spreadsheet that you can use throughout the year to record project data and generate reports.

Requirements (Part 1):

- Brief Documentation that includes:
 - an overview of the project
 - identification of the target audience and brief descriptions of each
 - a list of deliverables
 - a breakdown of the tasks required at each stage of the design process to complete this project
 - a budget that estimates times for each of the stages
 - a list of modifications made over time. Each entry should include: a date, the issue, the solution
- Concept Notes:
 - identify fonts and colours for use in the spreadsheet
 - notes should justify your choices
- Content:
 - Your spreadsheet will need to allow for the following information: Date, Project, Stage (Design Process), Task, Start Time, End Time, Total Time (formula)
 - all data needs to be formatted correctly
- Reports:
 - Sort data
 - Use filters for easy access to specific information
 - Use a datapilot to customise data for reporting purposes

- Graph data to provide a relevant report
- Evaluation:
 - write a simple evaluation that demonstrates how your spreadsheet fulfills the requirements of the brief.

Graphic Design

Graphic Design - Pixel Art

Brief:

This project is an opportunity to learn some of the tools in GIMP and to start researching the benefits and constraints of using a computer for creating graphical elements.

Requirements:

As a class you will be given a choice between creating a virtual tower or a virtual town. Templates will be provided to give you a base to start from.

- Concept Sketches: outline your ideas with sketches
- A final piece: either floor in the tower or a town block

The final pieces will be combined and uploaded to the College of Computing web site.

Resources

- [Army of Trolls](#)
- [Zoggles.co.uk](#)
- [Final Redemption](#)
- [Pixel Art Tower](#)

Desktop Publishing and Word Processing

Fundamental Skills: Word Processing and Desktop Publishing

Assessment Details

#	Level	Credit	Title
2789	3	5	Produce desktop published documents for organisation use

Overview:

Throughout the year you will be required to produce a range of documents to support your project work and demonstrate an understanding of the different approaches to producing documentation. Each of the projects will provide you with the opportunity to design specific types of documentation including: Brief documentation and user manuals (single and multi-page documents), specification documentation and test schedules, and promotional material for final solutions.

You will need to demonstrate an understanding of the difference between word processing and desktop publishing and will be expected to select the relevant approach dependent on the type of documentation you are producing.

Brief:

You are required to design a brochure that outlines the ergonomic issues and solutions with using computers on a daily basis.

Requirements:

- Brief Documentation that includes:
 - an overview of the project
 - identification of the target audience and brief descriptions of each
 - a list of deliverables
 - a breakdown of the tasks required at each stage of the design process to complete this project
- Concept Sketches:
 - based on the requirements and specifications in the brief
 - at least 6 ideas explored through concept sketches and design notes
 - explore ideas for fonts, colours and overall style of the page
- Content:
 - formatted using styles
 - correct grammar and punctuation (show a printed proof sheet)
- Evaluation:
 - write a simple evaluation that demonstrates how your template fulfills the requirements of the brief.

Graphic Design 2

Graphic Design - Ubuntu Icon Set

Assessment Details

#	Level	Credit	Title
5956	3	3	Create images using a computer

Brief:

Design a set of icons for the Ubuntu desktop that will be released to the wider community.

Your icon set will need to incorporate all the key system icons used on the Ubuntu desktop and will need to use file formats that Ubuntu will understand and register as icons. You will also be expected to package your icon set so it can be install using the theme manager in Ubuntu.

You will be required to create at least two of the images used in the design and modify images using a range of techniques (eg. changes to size, contrast, colour, orientation, shape). All work that is used in the design that is not created by you will need to meet all copyright requirements and be noted in your documentation. Remember that this work is going to be available to the public so you will need to make sure you have identified and resolved all copyright issues.

All icon sets will be uploaded to <http://www.gnome-look.org> but you are welcome to upload to other theme communities. Any feedback provided by the community will be documented by you and form a basis for your personal evaluation.

Requirements:

- Brief documentation that includes:
 - a list of tasks required to complete the project
 - brief description of each task
 - a comparison of image creation techniques (eg. sketching, painting, GIMP, Inkscape etc). Lay out as a simple table with advantages and disadvantages of each.
 - requirements list that justifies the use of a computer application to create the images
 - Target audience: Identify the target audience(s) and include a brief description of each audience type and what they will expect from the final solution
 - Specifications: include dimensions of the icons, the types of icons required, file formats, images and photographs used, copyright issues, colours, fonts
 - Resources: include a breakdown of the tools to be used and why. You need to justify the use of particular tools on this project.
 - Modifications: all changes and issues that appeared during development and when and how they were resolved
- Concept Sketches: outline at least five theme ideas with sketches. Include design notes that describe elements and why they are in the design. Justify everything!
- A final set of digital icons
- A final set of icons printed in colour

Specifications

- Dimensions: You will need to research the sizes used by icon sets on Ubuntu
- Resolution: 72dpi for screen, 150dpi for print
- Colour: RGB for screen, CMYK for print
- You should have at least 8 icons in your set
- Final icon set in .tar archive
- Print layout of the icon set using Scribus

Resources

- [Gnome-Look Icon Themes page](#)

Technologists and Society

Web Site - Project 1

Assessment Details

#	Level	Credit	Title
90676	3	4	Describe technologists' responsibilities to the wider community

Note: this is an externally assessed project.

Brief:

You are to prepare a report discussing open source and proprietary business models. We will have three guest speakers this year who will discuss how they run their businesses and why they have chosen the business models that they have. The three speakers will cover: 1) open source, 2) a combination of open source and proprietary, and 3) proprietary and will range from business models to software use.

You are expected to compare the different approaches and contrast them to reveal the impact of each on the community they operate in and the wider community.

Requirements:

- Attend the talks given by our three industry speakers
- Identify the key responsibilities of each of the business models represented and the role(s) they play in the community
- Explore the different constraints (legal and ethical) that are apparent in each business model and use this as a base for comparison
- Compare each of the business models and evaluate how each benefits the community they operate within
- Contrast each of the business models to identify the key differences and the impact these differences have on the community

Independent Project

Independent Project

Assessment Details

#	Level	Credit	Title
90620	3	8	Develop a one-off solution to address a client issue in information and communications technology

Brief:

You are to develop a final solution for a client in a real situation. You will need to choose a project from an area you have studied this year and apply the design process to develop a working solution.

Ideally you should work individually but if the project requires team work and you can justify this you will be allowed to work in pairs.

You will need to be in contact with the client and actively ask for their feedback as you work on the project.

As all your projects will be different it is up to you which tools you use to develop the final solution and demonstrate your ability to manage your time and the project. Take care that you are documenting everything you need to demonstrate your ability to drive a project and apply the design process effectively.

You will have approximately six weeks (from 11/9/06) to complete this project (allowing time for marking). You should submit a tidy portfolio (can be digital) of all the documentation, concept work, client feedback and communication and evidence of the final solution.

Requirements

You need to provide the following elements:

Brief documentation that includes:

- An overview that describes the project and justifies its purpose.
- A breakdown of all key stakeholders that influence the project. These should be described and prioritised according to their influence.
- A breakdown of all key factors that influence the project. These should be described and prioritised according to their influence and you will need to justify the order you have prioritised them in.
- A breakdown of the target audience described as persona
- A budget that includes time. You may associate the budget with money but it is not advised to show this to live clients (you will not be expected to charge for this work).
- Specification documentation that identifies key elements of the project and specifies technical details and requirements

Time Management

- A planning document that identifies all key tasks and milestones
- Identify and allocate resources (ie. time, people, materials) to the identified tasks
- Use the planning to identify and resolve potential dependencies and technical issues
- Track your time and provide reports on a regular basis. Use these reports to identify progress and any issues that arise (eg. time constraints, requirement for client feedback etc)

Concept Design:

- Research that identifies existing solutions and resources that could influence your solution. You will need to demonstrate how this research has directed your solution
- concept sketches and documentation that explores ideas and progresses towards a final solution
- prototypes and/or mockups that you can use to present ideas to the client
- Client feedback that is documented and clearly used to direct the solution

Testing and Evaluation:

- Test plan that includes functional and user testing as appropriate
- Test schedule that will be used during testing. This must clearly test all key aspects of the solution identified in the Brief and Specification documentation
- Final test results documented
- A final evaluation that verifies the solution is fit for purpose, includes a report of the test results and client feedback on the solution's suitability

Evidence of a final solution

- You will need to provide evidence of a final solution that is operable, tested and fit for purpose

Presentations

Fundamental Skills: Presentations

Assessment Details

#	Level	Credit	Title
5940	3	5	Produce a presentation using a desktop presentation computer application
2780	2	9	Demonstrate and apply knowledge of a personal computer system

Overview:

Communicating your ideas is an important part of the design process and this year you will be required to present your design work to your peers on two separate occasions.

You will need to demonstrate the ability to create a presentation that clearly communicates your ideas, is well formatted, uses the projection technology effectively and engages your audience.

Brief:

You are required to design and deliver a presentation on the following subjects:

- Hardware: a) identify and describe at least 6 components and their functions; b) explain how data moves between the components
- Software: a) identify and describe at least 2 operating systems; b) identify at least four open source applications and describe their purpose; c) explain how the applications interact with the operating system
- Ergonomics: Identify and describe at least 4 key ergonomic issues and solutions with regard to: physical well-being, environmental, and machine components

Requirements:

- Brief Documentation that includes:
 - an overview of the project
 - a list of deliverable elements
 - a list of resources required (eg. projector)
 - a breakdown of the tasks required at each stage of the design process to complete this project
 - a description of the target audience
 - a budget that estimates times for each of the stages
 - a list of modifications made during development. Each entry should include: a date, the issue, the solution
 - descriptions of ethical issues associated with presentations. This might include (but is no limited to): copyright and privacy
- Concept Sketches and Notes:
 - explore at least 6 different ideas
 - identify the order of the presentation's content
 - identify suitable font sizes, colours and layouts
 - identify imagery that is suitable for the content and audience
 - explore transitions that are suitable for the content and audience
 - notes should justify your choices
- Delivery:
 - the presentation will be delivered via a data projector in front of the class
- Evaluation:
 - A peer evaluation will be used to provide you with feedback

Video and Animation

Promotional Video or Animation

Assessment Details

This project provides evidence for the following standards:

#	Level	Credit	Title
AS90342	2	6	Develop and model a conceptual design in information and communication technology
AS90349	2	6	Develop and implement a one-off solution in information and communication technology
AS90368	2	4	Demonstrate skills in information and communication technology

Project Overview:

On this project you will be working in small teams to produce a video or animation to promote [some place] within a tight deadline (3 - 4 weeks).

You will be expected to work together to produce a storyboard, produce the media (video, sound, stills etc) and edit it together. You are free to arrange the team as you feel is appropriate but all members must contribute equally and you will be expected to demonstrate how this is occurring.

Project management will be critical on this project. You will be required to outline the tasks and a plan before you start along with the resources (Digital camera etc) you will require.

We will work towards uploading the final videos to YouTube to present the work and if appropriate will display them on the school web site.

Specifications

The following elements must be present in your design:

- no longer than 2 minutes in length
- final solution exported in a common video format (.avi, .mpg)
- branding (logo, colours, typefaces) must be incorporated

Requirements:

- brief documentation including a breakdown of the **target audience** and **stakeholders**
- concept sketches exploring ideas and notes justifying your design decisions
- a final **storyboard** showing the imagery, timing, transitions and effects to be used
- project management evidence (timesheet, planning, milestones etc)
- **evidence of changes** made to the brief and planning
- ongoing evaluation of your ideas
- a final evaluation of your solution
- Demonstrate knowledge of video editing: non-linear video editing, stills for animation, timing, text use in animation, sound editing.

Achievement Requirements

To achieve in this project you will be required to complete the following tasks:

- Produce a brief using this project outline as a base
- Produce a final solution that meets all the requirements of your brief
- Produce a plan that outlines costs (time) and milestones that allow you to complete the project on time
- Manage the project and your time using computer-based tools

Word Processing and Desktop Publishing

Design a Print Programme for a Fashion Show

Assessment Details

This project provides evidence for the following standards:

#	Level	Credit	Title
AS90342	2	6	Develop and model a conceptual design in information and communication technology
AS90349	2	6	Develop and implement a one-off solution in information and communication technology
AS90368	2	4	Demonstrate skills in information and communication technology

Project Overview:

The Textiles Technology course at Hagley Community College is looking at running a fashion show and require a programme that profiles the designers and the work they are showcasing.

You are being asked to design a page for print programme that showcases one designer and their work. The final pages will be put together to produce the final programme which will be printed in colour.

You will be required to interview a textile designer from the Textiles Technology course and produce a short profile for them (including a photo). You will also need to get any imagery that demonstrates their work (might include photos, sketches, rendered drawings).

As a class you will decide on final concepts for layout and visual style of the programme and each be responsible for producing a page that adheres to that concept.

You are expected to communicate with the designer you are profiling at key milestones (final concept, final solution) for approval of your solution. They will be your key stakeholder on this project and you will need to ensure that you are presenting them and their work in an appropriate way.

Specifications

The following elements must be present in your design:

Content:

- a profile of the designer that includes:
- a photo of the designer
- text describing the designer's experience and areas of interest/specialisation
- examples of the designer's work:
- photos, sketches or rendered drawings
- written brief descriptions and/or explanations [from the designer] for each piece
- imagery should be produced at print resolution (no less than 300 dpi)

Final Page:

- no larger than A4 (210 x 297). The final size will be decided by the class during the concept stage.
- each page must include a page number that follow the correct sequence when put together in the final programme.
- the final page will be delivered in PDF format at print resolution (no smaller than 300 dpi)
- unless specified by the designer all imagery will be produced for colour

printing

Note: you will need to specify elements such as fonts, colours, photo sizes etc as the concept work is finalised.

Requirements:

Design Process

You are expected to demonstrate that you have worked through the design process to produce your final solution.

We expect to see:

- brief documentation
- concept sketches exploring ideas
- evidence of ongoing communication with the stakeholder (the designer you are profiling)
- documented stakeholder approval of a final concept
- project management evidence (timesheet, planning, milestones etc)
- ongoing evaluation of your ideas
- a final evaluation of your solution

Content

You will need to develop questions that will provide you with the content you need to create a suitable profile. You and the designer are free to choose the style of the content as all the designers will be different.

Final Page

All the final pages will be put together into a book format so you need to ensure that you have page numbers that work with a bigger sequence. We will handle this as a class.

You are free to layout the content as you see fit but the overall visual style of the page must conform to the concept developed as a class. Any changes you wish to make to the overall style must be approved by the rest of the class.

The final book will be printed in colour at 300dpi so it is important that your page conforms to those specifications.

Achievement Requirements

To achieve in this project you will be required to complete the following tasks:

- Produce a brief using this project outline as a base
- Produce a final solution that meets all the requirements of your brief
- Produce a plan that outlines costs (time) and milestones that allow you to complete the project on time
- Manage the project and your time using computer-based tools
- Demonstrate knowledge of word processing and desktop publishing, specifically the differences and what they are used for
- Use a word processor and desktop publisher to publish content

Graphic Design and 2D Animation

Character set and background tile for *Battle for Wesnoth* game

Assessment Details

This project provides evidence for the following standards:

#	Level	Credit	Title
AS90342	2	6	Develop and model a conceptual design in information and communication technology
AS90368	2	4	Demonstrate skills in information and communication technology
AS90773	2	4	Examine how technological practice is influenced by responsibilities to the wider community

Project Overview:

Battle for Wesnoth is an open source, turn-based strategy game with a fantasy theme in which the player takes any number of roles in a range of campaigns based in the fictional country of Wesnoth.

The game uses a top down, isometric graphics style and has an active development community producing new campaigns, maps, graphics for characters/units and background tiles, artwork and multiplayer scenarios.

You are being asked to **design a character** for this game and a **background tile** that is associated with your character and research a designer and techniques required to create this style of graphic.

You will be required to clearly identify and describe the respective target audience(s) for the project.

Specifications

The following elements must be present in your design:

Character:

- a set of sprites that include:
 - base sprite (1 frame)
 - attack (at least 3 frames)
 - defend (at least 3 frames)
 - die (at least 3 frames)
- Size of each frame: 72 x 72 pixels
- Each frame saved as .png format
- .gif animation showing the frames together

Background Tile:

- at least one tile that relates to your character
- conforms to the size constraint and alpha channel of *Battle of Wesnoth*

Requirements:

Design Process

You are expected to demonstrate that you have worked through the design process to produce your final solution.

We expect to see:

- brief documentation
- concept sketches exploring ideas
- project management evidence (timesheet, planning, milestones etc)
- ongoing evaluation of your ideas
- a final evaluation of your solution

Character and Tile

You are free to use an existing character and tile as a base to build from but the final result must be clearly your own work.

The character will need to be rendered to appear 3D, in keeping with the other game sprites.

Research

As part of your **analysis** you are being asked to research at least one graphic designer or graphic artist and explore the process they use to create their work. You may choose any designer as it is the process they use that is important. It is recommended that you also look at the work of designers/artists working with "pixel art" techniques.

You will also need to research techniques for creating small characters like this using a small amount of pixels to portray shading and texture.

Key questions you need to explore and discuss as part of your research are:

- what does the designer do
- how do they work with constraints
- how do they communicate ideas with their customer and get feedback
- how do they plan their projects

Use this information as a base for justifying your design decisions and describe how it has affected the way you work on graphic design projects.

Achievement Requirements

To achieve in this project you will be required to complete the following tasks:

- Produce a brief using this project outline as a base
- Produce a final solution that meets all the requirements of your brief
- Produce a plan that outlines costs (time) and milestones that allow you to complete the project on time
- Manage the project and your time using computer-based tools

Resources

Main Web Site: <http://www.wesnoth.org/>

Development Information: <http://www.wesnoth.org/wiki/Create>

Path to Game Data: /usr/share/games/wesnoth

Pixel Art Animation: http://www.manningkrull.com/pixel_art/tutorials/walking.asp

Black Outlines vs None: http://www.manningkrull.com/pixel_art/wrestler.asp

Web Design

Web site to promote character set and background tile for *Battle for Wesnoth*

Assessment Details

This project provides evidence for the following standards:

#	Level	Credit	Title
AS90342	2	6	Develop and model a conceptual design in information and communication technology
AS90349	2	6	Develop and implement a one-off solution in information and communication technology
AS90368	2	4	Demonstrate skills in information and communication technology

Project Overview:

Designers are required to present their final solutions as part of the *delivery* stage so it is accessible to the target audience and client. The form of this presentations varies dependent on the original issue and the final solution but it is an important part of the process.

You have created a character and tileset for the game *Battle for Wesnoth* and now need to make them accessible to players and other developers and promote you as the designer.

You are being asked to produce a web site that will be used to present your *Battle for Wesnoth* character and tile and a brief profile of you as the designer.

All the sites created by the class will be linked together in two ways:

1. An index page linking to each site
2. Each site will include links to two sites creating a web ring

Specifications

The following elements must be present in your design:

Web Site

- valid XHTML 1.0 Strict
- valid Cascading Style Sheets (CSS)
- Images saved in formats suitable for the web (ie. png, jpg, gif)
- saved as *yourname.html*

Content:

- the separate frames from the character animation separated into actions
- animated gifs for each of the actions
- the background tile (standalone)
- an image showing the background tile showing it tiling
- your profile as the designer including a short bio and photo
- a short description of the character

Requirements:

Design Process

You are expected to demonstrate that you have worked through the design process to produce your final solution.

We expect to see:

- brief documentation including a breakdown of the target audience and stakeholders
- concept sketches exploring ideas and notes justifying your design decisions
- project management evidence (timesheet, planning, milestones etc)
- evidence of changes made to the brief and planning
- ongoing evaluation of your ideas
- a final evaluation of your solution
- a final rendered concept for final approval
- Demonstrate knowledge of image manipulation, specifically the types of images that can be created and a practical understanding of how to manipulate images.

Web Site

You are free to design a visual style for the web site that reflects your character and can create the content as you feel appropriate.

Achievement Requirements

To achieve in this project you will be required to complete the following tasks:

- Produce a brief using this project outline as a base
- Produce a final solution that meets all the requirements of your brief
- Produce a plan that outlines costs (time) and milestones that allow you to complete the project on time
- Manage the project and your time using computer-based tools

Animation / Motion

Animation and graphics to present a piece of writing

Assessment Details

This project provides evidence for the following standards:

#	Level	Credit	Title
AS90045	1	6	Develop a technological solution to address a given brief
AS90046	1	6	Formulate a brief to address a given issue
AS90049	1	4	Demonstrate understanding of technological knowledge
AS90050	1	4	Present a technological solution that addresses the requirements of a brief

Project Overview:

Graphic Design often requires the Designer take an abstract concept (eg. an emotion, belief, expression) and present it in a graphical form. This is known as Visual Communication and common examples of this are found in branding where the culture of an organisation is represented with colours, shapes and imagery; and graphical interface design where icons are used to represent ideas and help people perform tasks (eg. folders represent file storage, a *Home* icon representing the root directory of a web site).

Designers also often have to learn new tools and techniques while designing solutions as different issues will have different requirements. This is one of the things that makes Design a challenging and exciting area to work in.

This project is going to require you to interpret and represent one of three pieces of writing from students in the Year 12 Creative Writing course. These students will be your stakeholders on this project and will also need to identify the target audience for the story. The final solution must take both the stakeholders and target audience(s) into account.

You will be using motion graphics and animation techniques (2D, 3D) and tools (GIMP animation, Pencil, ZenCub3D) and will be presenting the final solution for the Creative Writing students to give feedback on. We will aim to upload the final solutions to YouTube so you are able to publish and then get feedback in a relatively simple environment.

Brief Statement

Visually represent a piece of written work using animation tools and techniques for online presentation to the stakeholders and target audience.

Specifications

The following elements must be present in your design:

- key elements of the written story represented visually
- output in a format that is suitable for presentation (swf, gif, avi)

You will also need to provide your own specifications for:

- the animation style used (ie. 2D, 3D)
- the tool/technique you intend to use (Gimp, Pencil, ZenCub3D)
- the physical dimensions of your animation (width, height)
- intended length of the animation
- target audience
- stakeholders and key factors that influence the project

Requirements:

Design Process

You are expected to demonstrate that you have worked through the design process to produce your final solution.

We expect to see:

- **brief** documentation
- description of the **stakeholders**
- identification of **key factors** that could affect the project
- resources required to complete the project (time, access to stakeholders)
- **concept sketches** exploring different ways of representing the written story
- **project management** evidence (timesheet, planning, milestones etc)
- **Ongoing evaluation** of your ideas
- A **final evaluation** of your solution

Achievement Requirements

To achieve in this project you will be required to complete the following tasks:

- Produce a brief using this project outline as a base
- Identify and describe the target audience
- Evaluate
key factors that influence the final solution
- Produce a final solution that meets all the requirements of your brief
- Produce a plan that outlines costs (time) and milestones that allow you to complete the project on time
- Manage the project and your time using computer-based tools

Web Design

Web site to promote spaceship expansion pack for *Oolite*

Assessment Details

This project provides evidence for the following standards:

#	Level	Credit	Title
AS90045	1	6	Develop a technological solution to address a given brief
AS90046	1	6	Formulate a brief to address a given issue
AS90049	1	4	Demonstrate understanding of technological knowledge
AS90050	1	4	Present a technological solution that addresses the requirements of a brief

Project Overview:

Designers are required to present their final solutions as part of the *delivery* stage so it is accessible to the target audience and client. The form of this presentations varies dependent on the original issue and the final solution but it is an important part of the process.

You have created an expansion pack for the game *Oolite* that includes a new spaceship and now need to make it accessible to players and other developers and promote you as the designer.

You are being asked to produce a simple web site that will be used to present your *Oolite* expansion pack and a brief profile of you as the designer.

Specifications

The following elements must be present in your design:

Web Site

- valid XHTML 1.0 Strict
- valid Cascading Style Sheets (CSS)
- Images saved in formats suitable for the web (ie. png, jpg, gif)
- uploaded to server

Content

- a short bio of you as the designer
- images of your spaceship
- a description of your spaceship and its intended purpose (eg. trader, smuggler, pirate, bounty hunter etc)
- a link to the expansion pack so others can download it

Requirements:

Design Process

You are expected to demonstrate that you have worked through the design process to produce your final solution.

We expect to see:

- brief documentation
- concept sketches exploring spaceship ideas
- project management evidence (timesheet, planning, milestones etc)
- Ongoing evaluation of your ideas
- A final evaluation of your solution

Web Site

We will be using a simple template as a base for the web sites. You are free to design a visual style for the web site that reflects your spaceship and can create the content as you feel appropriate.

Achievement Requirements

To achieve in this project you will be required to complete the following tasks:

- Produce a brief using this project outline as a base
- Identify the target audience for your spaceship
- Evaluate key factors that influence the design of your website (eg. the target audience and style of your ship may influence the visual style etc.)
- Produce a final solution that meets all the requirements of your brief
- Produce a plan that outlines costs (time) and milestones that allow you to complete the project on time
- Manage the project and your time using computer-based tools

3D Modelling, 2D textures and basic XML

Spaceship for Oolite

Assessment Details

This project provides evidence for the following standards:

#	Level	Credit	Title
AS90045	1	6	Develop a technological solution to address a given brief
AS90046	1	6	Formulate a brief to address a given issue
AS90047	1	6	Develop a technological solution by widening the use of an existing technology
AS90049	1	4	Demonstrate understanding of technological knowledge

Project Overview:

Oolite is an open source game in which the player takes the role of a space trader with the purpose of making money, upgrading their ship and increasing their "rank". The gameplay is very simple and the player can choose how they play the game ethically by trading in legal or illegal goods, becoming involved in piracy or becoming a bounty hunter.

The game has been developed so it is easy to modify and expand which has led to a number of expansion packs and a growing community of people developing for the game.

You are being asked to **design a spaceship** for this game and create an expansion pack that allows other players to install your ship.

Specifications

The following elements must be present in your design:

- 3D model created at the correct scale for Oolite
- Saved as .obj format
- Converted to .dat format for use in Oolite
- a texture for the model and .mtl file for Oolite
- a configuration file (shipdata.plist) that defines your spaceship in Oolite

Requirements:

Design Process

You are expected to demonstrate that you have worked through the design process to produce your final solution.

We expect to see:

- brief documentation
- concept sketches exploring spaceship ideas
- project management evidence (timesheet, planning, milestones etc)
- Ongoing evaluation of your ideas
- A final evaluation of your solution

Space Ship

We will be using the 3D modelling tool, Blender to create the 3D models of our ships and use an existing spaceship to get the scale correct.

The configuration file will be based on an existing example and you will be required to modify it so your model is included.

The texture will be created in GIMP.

Achievement Requirements

To achieve in this project you will be required to complete the following tasks:

- Produce a brief using this project outline as a base
- Identify the target audience for your spaceship
- Evaluate key factors that influence the design of your spaceship (eg. the wider community of Oolite designers, existing ship designs, the types of players)
- Produce a final solution that meets all the requirements of your brief
- Produce a plan that outlines costs (time) and milestones that allow you to complete the project on time
- Manage the project and your time using computer-based tools

Resources

- Main Web Site: <http://oolite.aegidian.org/>
- Wiki: http://wiki.alioth.net/index.php/Oolite_Main_Page
- Path to game files: /usr/lib/GNUstep/System/Applications/AddOns