

Industrial Year Report

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Abstract

The purpose of this document is to provide an insight into my industrial year. To give you a brief description of the projects I undertook whilst on my industrial placement. The main topics of the report include;

- An introduction to the industrial year placement
- A description of my employer
- A description of the hardware and software used throughout the year
- The training I received whilst working
- A description of some of the projects I undertook
- Critical evaluation

Introduction

I applied for the industrial year placement with the University of Wales, Aberystwyth (UWA) in early 2004, and was offered an interview on the 18th February 2004 and was successful in my application.

My contract began on the 1st July 2004 and ran until the 20th July 2005, however due to the large amount of work that the degree awarding powers (DAPs) process that the University had recently applied, for my contract was extended to finishing on the 16th September 2005. The original contract end date factored in a two week hand over period from the current Industrial Year Students (Matthew Burt and myself) and our successors.

During my industrial year I worked for two departments, The Design Studio in Marketing and Recruitment and the Web Development Team in Information Services, working alternating weeks in each office.

Organisation

Design Studio

The Design Studio is based in the Old College, King Street. It is responsible for producing most of the University departmental literature, corporate design and work for external clients, this includes:

- Undergraduate and Postgraduate Prospectus
- Website Design
- Display Stands
- Course and Departmental brochures
- Posters
- Flyers

The Design Studio is split over two offices. I was based in the main office with the Design Studio Manager, Howard Adair, and a team of graphic designers.

Every Monday morning the Design Studio Team would hold a team meeting. The purpose of this meeting was to give Dr. Russell Davis (the Head of Department of Marketing and Recruitment) the opportunity to review the teams' work and see who had space to take on new projects on to their work load.

Web Development team

The Web Development team is part of the Information Services Department based in the Llandinum Building on the Penglais Campus.

Working in the Web Development office is Simon Marshall the Web Development Officer and my line manager whilst in Information Services, Stuart Lewis the Web Applications Developer, Kate Wright the E-Learning Development Officer and Gill Price our team leader.

Rather than a long weekly meeting the Web Development office opts for a short daily meeting during which each team member would discuss what they had been working on that day and what they had planned for the following day.

The University of Wales Aberystwyth

“The University of Wales, Aberystwyth was founded in 1872, and it was the first university institution to be established in Wales. Today, it has over 7,000 registered students, including over 1,100 postgraduates across eighteen academic departments.”¹

Technical

Hardware

Design Studio PC
Intel® Pentium® IV 2.80 GHz
512Mb RAM
110 GB Hard Drive
Microsoft® Windows® XP Professional
Wacom Intuos graphics Tablet

Information Services PC
Intel® Pentium® IV 1.50 GHz
512Mb RAM
40 GB Hard Drive
Microsoft® Windows® XP Professional

Software

Macromedia® Dreamweaver® MX 2004

Macromedia® Dreamweaver® MX 2004 is the main programme used by both the Web Development Office and the Design Studio for creating web templates and updating web pages. Dreamweaver has a selection of tools to assist web developers creating websites, some of these tools are:

- Syntax Highlighting
- XHTML support
- Accessibility features
- Find and Replace Features
- CSS support
- PHP Code Library

Macromedia® Fireworks® MX 2004

Macromedia® Fireworks® MX 2004 is a graphics manipulation tool that not only allows you to edit graphics but is also able to create Hyper Text Markup Language (HTML) and JavaScript. This programme was mainly used by the Design Studio and Web Development Office to create complex image maps and JavaScript dropdown menus.

Adobe® Photoshop® CS

Adobe® Photoshop® CS is the main graphics manipulation tool used throughout my industrial year by both Design Studio and Information Services. It was mainly used to convert high resolution images to images suitable use on the websites and creating montage images for use on the web. It was also used to create designs of website to show clients, although I mainly used Adobe® Illustrator® CS to do this. Photoshop has a selection of tools to aid users including:

- History Palette
- Layers

¹ <http://www.aber.ac.uk/en/university/>

- Layer Comps
- Colour Correction
- History Palette



Two Examples of images created for the UWA corporate website using Adobe Photoshop CS

Adobe® Illustrator® CS

I used Adobe® Illustrator® CS on a few of my projects to create vector based graphics to be used on a website.



This is a Vector based image created in Adobe® Illustrator® for the Centre for Widening Participation and Social Inclusion (CWPSI) website

I also used Illustrator® to create website layout and design to show to the client rather than creating actual working HTML pages. This was not only quicker but also allowed me to make changes to the designs whilst working with the client to get a better idea of what the client required from their website.

Adobe® Indesign® CS

Adobe® Indesign® CS is used by the Design Studio to produce most of the work they do. Indesign® is a professional Desktop publishing programme. We used Indesign to copy text from a document rather than using Portable Document Format (PDF) files. We did this because Dreamweaver® could not understand some of the welsh characters (e.g. Ŵ or Ŷ) when they had been copied from PDF files.

Adobe® Acrobat® Professional

When the University started to apply for degree awarding powers we started to put a lot more PDF files onto the website. We used PDF files on the site rather than HTML pages when we wanted to be able to control what a user could do with a file once they had downloaded it. This is possible with the PDF files created by Adobe® Acrobat® Professional as not only does it make PDF files that can not be edited, you can also set restrictions on PDF files so that you cannot copy or print them. We used Adobe® Acrobat® Professional to create the PDF files from Microsoft® Word® Documents or from Post Script Files.

Microsoft® Outlook® 2003

Microsoft® Outlook® 2003 was the main email application used throughout my industrial year to communicate with colleagues in both the Design Studio and Information Services as well as clients. We also used Shared task lists (Task lists are list of current tasks that are shared with other member of the office so that they can see what you are working on) so that Simon

could keep a track of what work we were working on and shared calendars to keep track of meetings and holiday leave.

- Shared Calendar
- Shared Task List
- Smart Find
- Junk Email filter
- Inbox organisation
- Rules

Putty

Putty is a free Telnet/Secure Socket Shell (SSH) client that we used to connect to the corporate website web account to set permissions on webpages. It was also used to connect to the database that we used to control users and web accounts settings.

JAWS® for Windows® and IBM® Homepage reader

IBM® Homepage Reader is a voice browser (A Voice Browser is a Web browser that not only renders web pages on the screen) where as JAWS® for Windows® is a Screen Reader (A Screen Reader is a programme that attempts to read out what is being displayed on the screen). Both of these programmes are provided to blind and partially sighted students and are set up on Green Card Computers (A Green Card computer is a computer set up with software to assist students with special needs to access computers more easily).

We used these programmes in the office to test WebPages whilst we were building them to help us create accessible layouts.

We also used IBM® homepage reader and JAWS® for Windows® on the 'Web Accessibility with FrontPage 2003' course. This was to show how much more accessible websites could be if they used the accessibility features that they had been taught on the course.

Training

Information Services have a formal induction / training session for all new employees. During the week long training programme we covered:

- How to deal with phone calls
- Manual Handling
- Health and Safety
- Data Protection act
- Freedom of Information
- Copyright
- Fire safety

Information Services also have an hour a week set aside to allow staff to develop new skills or attend training sessions arranged by the department. This training hour is on a Wednesday morning between 9.00 and 10.00.

The Information Services Department holds great importance for independent learning and training as well as team work. The annual away day that is held in early summer is used to test and strengthen the team's team work skills.

The first away day I attended was on the second day of working for Information Services, nearly all of the Web Development team went, and it was held at Llain Activity Centre. Whilst we were there we did many different team building activities including; Spiders Web, low ropes, Jacobs's ladder, raft building and raft racing.



Spiders Web Challenge



Simon playing on the rope swing



Every body gets a little closer!

The second away day I attended was with Cambrian Survival. The Cambrian Survival day involved learning different methods of fire lighting, the benefits of different types of shelter and learning different ways to attract attention when you are trying to get help. Lunch was included and consisted of sautéed Locust and Mealworm omelette.



Nigel Thomas testing out a tin foil survival jacket



Stuart Lewis tests out an A-frame bed.



The Locust Cooking

The Design Studio has a more relaxed attitude to independent learning and training. There was great emphasis on learning and improving new skills for particular jobs if it was needed. Once the best solution had been found you would then share your knowledge with the rest of the office.

Also each member of the office specialised in various pieces of software, proving very useful if you were having trouble with certain software as you could seek advice from another member of the office.

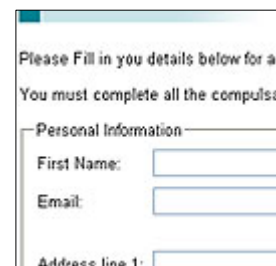
Projects

As I was working between two offices the idea was that whilst working in the Design Studio I would be working on projects given to be by them, these jobs would be mainly the designing and creation of websites for departments within the university and external clients.

While I was working in Information services I was be working on the corporate website site, on projects such as updating on the Cascading Style Sheet (CSS) for the site, updating web pages and writing programmes to be used on the site.

Although this was the plan for how the work was supposed to be spilt it was not always the case and it depended on which jobs I had on and how important they were. Here is an example of some of the projects I worked on over the year;

The Centre for Health and Environment Research and Expertise (CHERE) Website



www.chere.org.uk

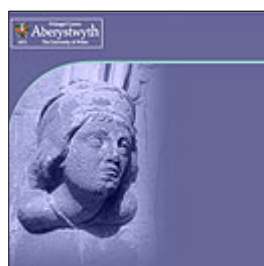
This site was designed so that once pages have been created the client can fill in all the information using Microsoft® FrontPage® 2003.

When I started my industrial year this was a job I inherited from one of the previous industrial year students, all that was left for me to do was to create the drop-down menu that the client had specified.

Once this was done the job was handed over to the client for them to add all information using Microsoft FrontPage.

After the website had been handed over I had to fix and update the Java Script dropdown menu and produce PHP pages to control access to certain pages of the website. This system used text files to hold the data rather than a database.

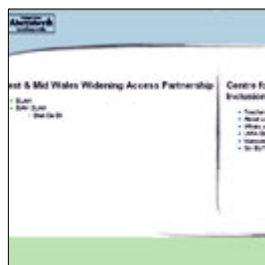
The School of Education and Lifelong Learning (SELL) Website



www.aber.ac.uk/sell/

This project was almost complete when I started; all that was left for me to do was to make some final changes to the template and set up the structure of the website and link it all together.

The Centre for Widening Participation and Social Inclusion (CWPSI) and West & Mid Wales Widening Access Partnership Website

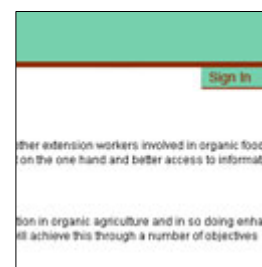


www.aber.ac.uk/designstudio/mark/cwpsi/

This job started off as a redesign of the CWPSI website, but when I was showed the first designs to the customer I was asked if I could create one website that incorporated the two departments. Therefore I had to redesign the site. The second design I came up with used two different colours to differentiate between the two departments. The First page of the website is split into two allowing the user to choose which of the two departments' websites they wished to enter. The layout and design of the two sites stayed the same to show the link between the two departments. The colours used were different to allow the user to know which departments' site they were using.

This site was created using Server-Side Include Hypertext Markup Language (SHTML) and three CSS, one CSS for the main page of the website and a CSS either of the two departments.

Institute of Organic Training Advice (IOTA)

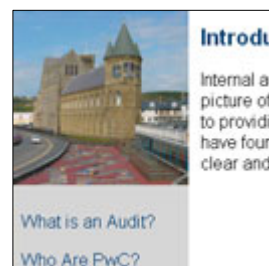
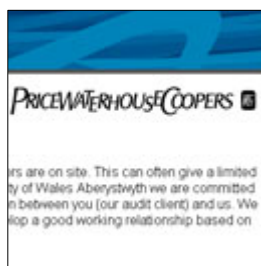


<http://www.aber.ac.uk/designstudio/mark/iota/>

The Institute of Organic Training Advice (IOTA) is a spin off company of the Organic Centre Wales (<http://www.organic.aber.ac.uk/>). When I was given the job to create a website for IOTA I was told to use some subtle elements of the Organic Centre Wales website so that users of both would see the link between them. I used a similar wave for the banner at the top of the page and used a green and a red colour similar to those used on the Organic Centre Wales website.

This site was created using HTML and two CSS one for the home page of the website and a CSS for the rest of the site.

The University of Wales Aberystwyth – Internal Audit



www.aber.ac.uk/audit

The Internal Audit website was created for the auditors Price Waterhouse Coopers, who wanted a little website to give information on the internal audit that was going on in the university. The site uses a basic Extensible Hypertext Markup Language (XHTML) template with a small CSS. The design is based on the layout of the UWA corporate website but used the colours of the Price Waterhouse Coopers UK Colours. Website (<http://www.pwcglobal.com/uk/eng/main/home/index.html>).

Abbreviation/acronym database

www.aber.ac.uk/designstudio/mark/abbr-database/

The abbreviation/acronym database started off just being a PHP script that checks the 'message of the day' for regularly used abbreviations and acronyms and adds the <abbr> or <acronym> tags and title in the correct place before it was rendered on the corporate homepage. This basic system held a list of abbreviations and acronyms in an array. This system had a few floors in its design, it relied on the people that updated the 'message of the day' to write abbreviations the same way every time, otherwise it would not pick up the abbreviations or acronyms. A few weeks after the new design corporate site went live it was decided that the 'message of the day' did not need to be there, so the abbreviations/acronym database was put on the backburner.

The first version was superseded by a more advanced script when we saw potential uses for it in many online systems including the online prospectus editor and news editor.

The latest version of the abbreviations/acronym database is held on an Oracle Database. There were a few big improvements to the first version of the abbreviation/acronym database. The First being giving the user the decision of whether or not had chosen the right abbreviation or acronym before it the text would be used. Another improvement on the system was giving users the ability to add and update the database.

Restricted PDF script

www.aber.ac.uk/en/pdf/pdf-check.php

This script was written during of the degree awarding powers (DAPS) process. The university decided to put many of its documents on the website, but as some documents were intended for staff only, they needed to be restricted so that it was not possible to gain access to certain documents without entering your user name and password. The script works using some basic PHP it firstly check whether the username and password you entered is valid and that you are an authorised member of staff.

Information Services Web Development Training

I started off assisting Simon Marshall on the Introduction to FrontPage 2003 course. My job was to help anyone taking the course with its practical elements. After I had done this a couple of times Simon asked me if I wished to teach a section of the course. I accepted and on the next course taught the section on inserting images and how to use alternative text.

I also assisted Simon in researching and writing the Web accessibility with FrontPage 2003 course. This process involved long discussions on what we believed the World Wide Web Consortium (W3C) Web Accessibility Initiative (WAI) level A guidelines required you to do. We then used JAWS and IBM homepage reader to test how they dealt with WebPages we created to test our theories. After that we went about finding the easiest way to do each of the WAI guidelines using FrontPage 2003. As there are some technologies that we had not used before (e.g. video or sound) we had to find examples of these used in an accessible way on the internet to demonstrate what we believed the WAI guidelines required. (Course notes Appendix 1).

Web Accessibility training for Design Studio

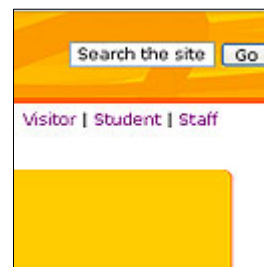
As the Design Studio use Dreamweaver to create websites the web accessibility FrontPage 2003 course would be no use to them. So I was asked to write and give a 'web accessibility with Dreamweaver' training session.

I based my notes on the 'web accessibility FrontPage 2003' course notes. I went through all of the examples and then found the easiest way to do each of them in Dreamweaver MX 2004 (Course Note Appendix 2).

This gave me an interesting insight into which of the two programs allowed a user to create an accessible website the easiest without having to edit HTML. I discovered that both programs had their strengths but neither allowed you to create a completely accessible website just using the design view.

Once the notes had been written I presented the course to eight members of staff which was quite a nerve racking experience even though I had more than a years work experience with them.

The University of Wales Aberystwyth Website



When I began my industrial year placement the entire UWA corporate website was undergoing a redesign.

The old version of the website was created using SHTML. It used a small amount of Server Side Includes (SSI) scripting to include regular elements that had been used throughout the website (e.g. Header information or banners). The site used a very basic CSS to control the style of the website.

The layout of the website was very inaccessible.

After the Disability Discrimination Act (DDA) was updated by the Special Educational Need Act (SENDA) to cover universities. The university has had to put in place regulation to ensure that it accessible. This does not just include things like putting in wheel chair access and on physical changes to the university and surrounding area but also changes to things like websites. This was one of the key reasons for the change to the UWA corporate website.

The new website is produced using XHTML and uses tables to control layout. It makes use of a complex PHP template system devolved within the Web Development office. This template system allowed us to separate content and design making design changes to the site a possible. The ability to keep content and design separate became very apparent to us we had

to copy all of the content from the old site and paste it into the new one. The process was a long and arduous task. The site also uses a complex CSS to control the look of the website.

To conform with the guidelines set out by SENDA we ensure that all were WAI-AA compliant (the minimum requirement of SENDA being WAI-A compliant). We also incorporated some of the WAI-AAA standards as we believed them to be very useful not all uses. This includes things like marking up abbreviations and acronyms (e.g. `<abbr title="University of Wales, Aberystwyth">UWA</abbr>` or `<acronym title="National Aeronautics & Space Administration">NASA</acronym>`).

The new site also makes use of a lot more server side scripting. The PHP is used throughout the site to make it easier to update and maintain. For instance there is a PHP script that changes the images on all home pages at the beginning of each week. With the old site this would be done by one of the industrial years every Monday morning.

There is also a PHP script to create the text only version of each page that makes use of a PHP driven CSS to give users more control over background colour, font colour and font size.

I have been involved in the creation of a large amount of pages for the new style website as well as keeping the website up to date and updating the news items on the home pages.

I also made many edits to the CSS many to control large amounts of nested ordered and unordered lists which was not taken into account when the CSS was originally created. An example of where my nested ordered and unordered list control can be seen is the Rules, Regulations and Information for Students (2005 - 2006) web pages (<http://www.aber.ac.uk/en/student/academic/rules-regs/>).

Other Jobs

As well as producing websites and web programs my responsibilities also included dealing with any email that were sent to www@aber.ac.uk or www.is@aber.ac.uk, this included emails regarding; people registering for PHP usage, Can I bring my (horse, hamster, cat) to university with me and ensuring that departmental web accounts did not get locked.

Once the new industrial year students started work one of my responsibilities was to teach them the basic skills they would need on their industrial year. Things that they were taught included;

- XHTML
- CSS
- Basic PHP
- Web Accessibility (including how to create WAI-A and WAI-AA webpage's)
- What to do with emails sent to www@aber.ac.uk and www.is@aber.ac.uk
- Basic Photoshop Skill

When Simon Marshall went on paternity leave there were no plans in place for who was going to be responsible for organising the work coming in and take responsibility for ensuring that the two new industrial years and Liam Goldstein, who was employed to help with the large flow of work produced by DAPS. Whilst Simon was off work Matthew Burt and myself split many of the jobs the Simon would have been doing between us. These extra responsibilities included:

- Reporting to Gill Price on the progress of the new industrial years.
- Writing a report on the progress of the DAPs work
- Attending meetings regarding the DAPs work
- Assigning jobs to the two new industrial years and Liam

I have also been out taking photographs to be used in the prospectus and website produced by the design studio. I was sent to different events and occasions to take photographs including:

- Radio 1 'In new music we trust' tour (Students' Union)

- Westwood (Students' Union)
- The Alternative May Ball (Students' Union)
- Aberystwyth Mardi Gras
- Cadair Idris
- Pictures Of Aberystwyth



Two girls at the Students' Union.



Bethan Elfyn, BBC Radio 1 DJ.



Smokehand playing at the Alternative May Ball.



The Singer from Weapons of Mass Belief.



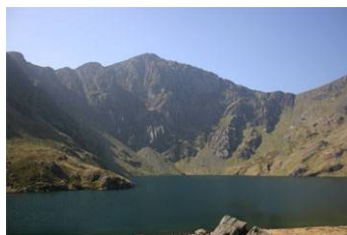
Tim Westwood - a BBC Radio 1 DJ.



Balloon Release at the Aberystwyth Mardi Gras.



[Spunge] playing the Alternative May Ball.



A photograph of the lake at Cadair Idris.



A photograph of UWA written in the sand.

Critical Evaluation

My industrial year has given me a good insight into what it is like to work in the computer industry. I have learnt a lot about working in a professional environment as well as a lot of new web development skills.

Over the course of the year I have been able to develop existing skills and learn new ones. I feel my knowledge of HTML, CSS, PHP and file permissions has improved dramatically. I now have a better understanding of using Command line interfaces and Dreamweaver and Photoshop.

The skills I have learnt over the past year have given me more confidence to try out new things on my personal website. I have used Adobe Photoshop and Illustrator to create graphics to give my website its own style. I have used a complex CSS to control style and some positioning. I have written a few PHP scripts for the website including a photo gallery.

As web accessibility was such an important part of my industrial year. I have put all lot of time and effort in to researching and understanding what makes a website accessible. I found this very interesting thing to learn and have tried to apply all that I have learnt to my own personal site and any sites I created throughout my industrial. I found my self ensuring that all of the sites I had worked on complied with at least the WAI-A standards.

Having the year split over 2 different offices has show how two offices in the same institution can work completely differently, with different attitudes to work, training and working environment. Although throughout the year I could never decided on a favourite office to work in. Reflecting on the year now I preferred working in Information Service for the programme jobs they gave me to work on as I found this more challenging.

I have enjoyed all aspects of my industrial year. I feel that the year has given me a good idea of what I would like to do once I have completed my degree and in the more immediate future it has given me an idea of the direction I would like to take my regarding my dissertation.