Software Hut

Second year students undertake the Software Hut project which runs for 12 weeks every year in the spring semester and is a required module choice for all second year students. Students work in teams to develop software for an external business client. This year there were 4 clients, including two from Deutsch Bank and each team of students comprised 4 members. The projects were: an SMS texting business game, a social networking web site, a human resources management system and a web-based system for a collaborative research project in urban environments.
At the end of the semester each client assesses the software provided by each team, and picks a winning team. **This year the winning teams were each given £250**. An overall winning team was chosen and they were entered in the **IBM Think Pad Challenge which is held at Hursley Park, IBM UK headquarters.**
The Software Hut project is a precursor to the Genesys course.

Genesys Solutions

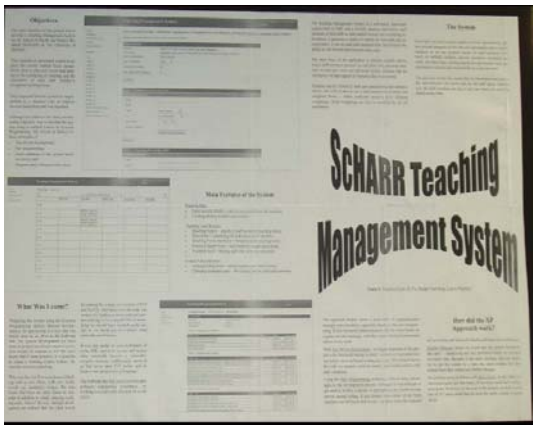
Genesys Solutions is a software development house run by 4th year undergraduates and masters students at the University of Sheffield. The students are responsible for all aspects of the company, from the pricing of contracts to maintaining their own intranet.
The University of Sheffield is the only university in the world which runs a course such as this, giving students the chance to gain invaluable experience in the running of a company whilst simultaneously providing quality software solutions for industrial clients. The company consists of a number of teams that work together to deliver solutions to our clients. The **marketing team** is responsible for providing first contact between the company and potential clients. They discuss the general requirements and draw up feasibility reports and contracts. **Systems administration** is responsible for maintaining the company network and servers. These are entirely independent of the University. The company also has several **development teams** who are responsible for the production of bespoke software for our clients. They are required to be able to grasp new technologies quickly, and be able to adapt to new requirements. Students from any discipline are eligible to join the company for a Semester and take part in a variety of activities and any 3rd year student can take this 10 credit module. Genesys Solutions is part of the epiGenesys company.
If you would like to know more about the Genesys course and the student experience, then you can visit the company website: www.epigenesys.co.uk

epiGenesys

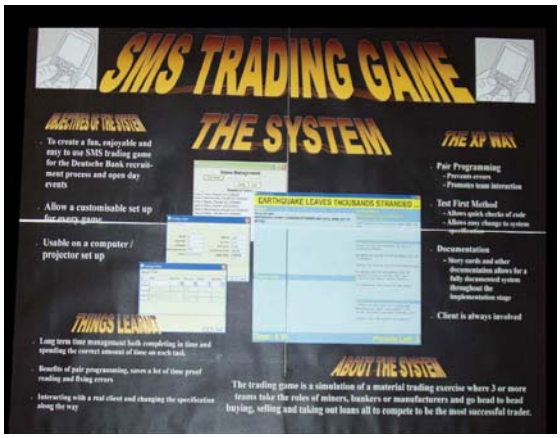
The success of Genesys has prompted the University to set up *epiGenesys,* a real commercial company that provides software solutions and consultancy services for a variety of business clients, charities and public sector organisations. It works from 'state of the art' premises in the Enterprise Zone, Portobello Street. Genesys Solutions is part of the epiGenesys company and will carry out projects using the epiGenesys facilities and with their professional managers. The permanent staff in epiGenesys are all graduates from Genesys. Valuable experience of working in a highly responsible position will be gained – employers are always impressed by students who have worked with real customers on projects. Activities include: Working with external clients and customers, negotiating contracts, carrying out consultancy, customer relations and financial planning.
Training will be provided and most personnel will work in client-facing project teams.
Further information from Chris Murray, epiGenesys at c.murray@epigenesys.co.uk or Professor Mike Holcombe - m.holcombe@dcs.shef.ac.uk
epiGenesys is supported by IBM, Accenture, Deloitte, Microsoft and others.

Some recent Software Hut projects.

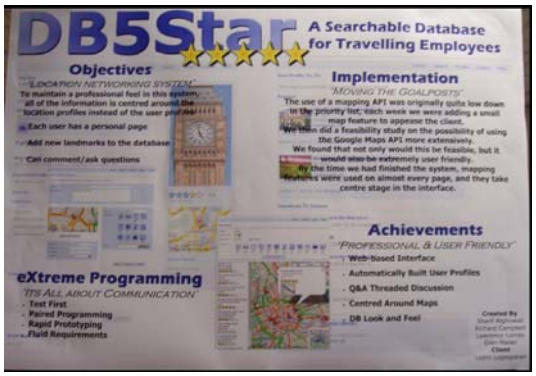
2007-8



University department management system



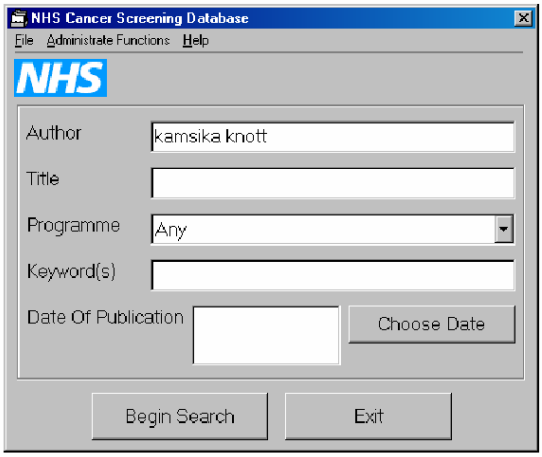
Deutsch Bank SMS-based trading game

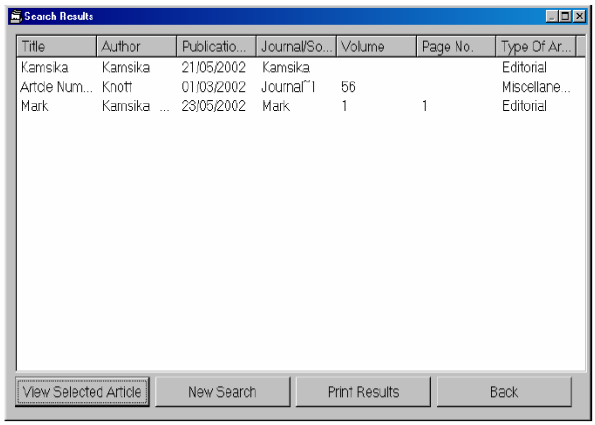


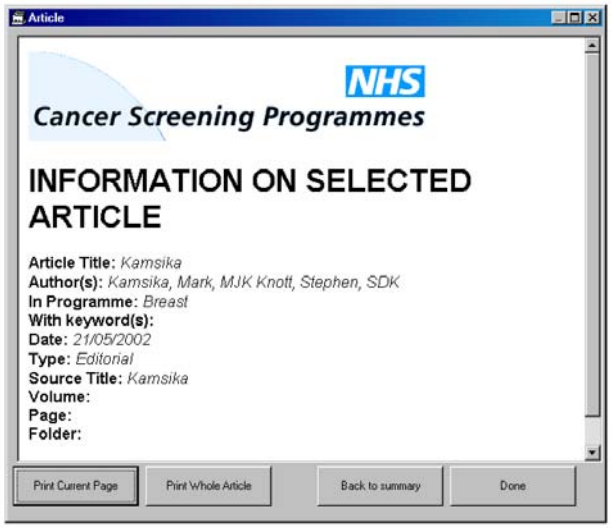
Deutsch Bank social networking site engineering

Web site for research group in environmental

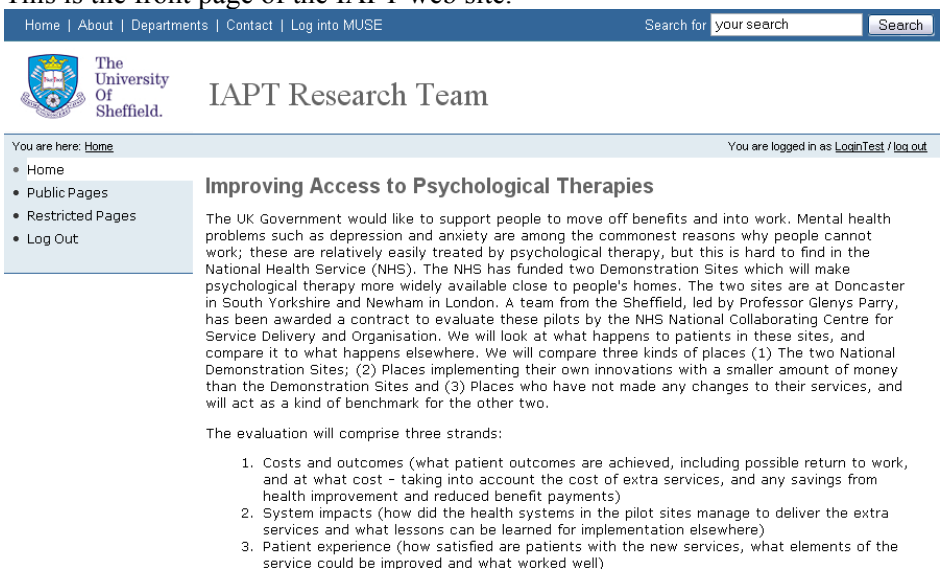
Here is an example from another Software Hut project that involved building a document management system in 2003.



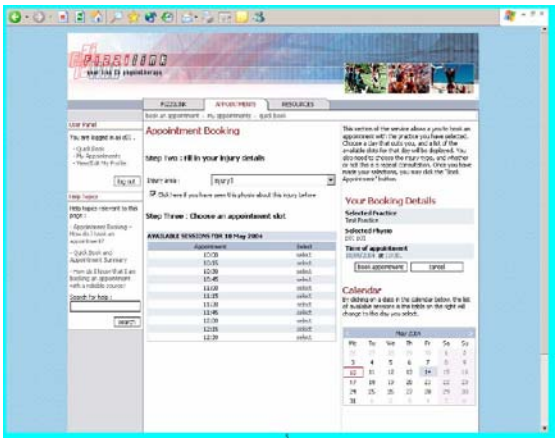




This is the front page of the IAPT web site.



DELTAH Leadership development programme for the Health Service



FIZZILINK 2004

COM3420 Software Hut.

Information for clients.

Background.

The course is organised around teams of students, usually 4 or 5 in a team, competing to produce software solutions for their clients. Typically a client will work with 5 or 6 teams. The course takes place in Semester 2 (February – May).

The students need to meet with the client on a regular basis for about 5 weeks until they have established the *Requirements* for the project.

It is very helpful if the client brings, to the initial meeting, as much information as they can about the system that they would like. This should include information about:

the intended operating environment - type of computers,
their configuration (where known),
the software available (this might be Microsoft Office - including Access, Excel, Word etc.)
any paper copies of data and information relating to the proposed system (for example, if it is to replace a manual system)
any special circumstances that will affect the project.

Then each team will produce a draft *Requirements Document* for the client to amend and eventually agree and sign off over the next 5 weeks. This document is a description of the software that the teams propose to build for their client. It is important that this is correct - as far as possible. Although the students have had some teaching related to communication with their clients, the construction of a requirements document and working in teams this is possibly the first time that they have done it *for real*. It is an excellent experience for them and highly valued both by

the students and their ultimate employers. It may also be the first time that the client has experienced being a client for a software project! The students may ask you questions about what you do that may enable you to look at your operations in a new light. It might mean that your initial thoughts about what you actually want will change during the discussions you have with the students. This can be very valuable but it can also result in you wanting to change your mind at a late stage in the process. Please exercise care in this regard as late changes invariably threaten projects. If you feel that there is still a lot of uncertainty or confusion 3 weeks or so into the project then please speak to the lecturers. We will endeavour to discuss with you progress each week in the initial stages of the project. We also monitor the students carefully, throughout. Each team has to produce minutes of team meetings, project plans as well as a considerable amount of technical design documentation which you are welcome to see but may not be easily understood.

It is strongly urged that changes to the requirements document should not be made after it is finalised, unless absolutely necessary, since this could seriously affect the likelihood of a team being able to deliver software of high quality. Naturally it is possible to make “cosmetic” changes at a later stage but whatever is decided should be considered very carefully.

The students will then spend the next few weeks building and testing the software. During this period it may be necessary for the students to contact the client to clarify some aspect of the project, an e-mail address or fax number is useful in this regard.

Around weeks 9 and 10 the students may invite the client to view a prototype in the Department’s teaching labs (Lewin Laboratory, Regent Court). This is an opportunity to make minor adjustments to the system, perhaps improvements to the interface or some prioritisation of the functionality of the system. It is often the case that original plans turn out to be rather optimistic and that the difficulties of programming can result in it all taking longer than was expected. At this point it is better to agree on the

delivery of a high quality basic solution rather than one with lots of features and lots of bugs!

By week 12 all teams have to deliver their solution to the client, usually this will be on a CD and include a simple to use installation program. There should be a User Manual and an Installation Guide (unless this is automatic). Some teams may offer to install the software on the client's computer. If the target operating environment is a computer network then it is advisable to seek advice from the local system administrator concerning installation as the network configuration may pose particular problems that the students cannot deal with.

Once there are some solutions to evaluate (hopefully all the teams will produce something) then the client is asked to assess the different solutions with the aid of a simple mark sheet. This involves identifying a number of attributes of the software and awarding a mark from 1 (low) to 5 (high) for each one. The total mark awarded by the client counts for 50% of the assessment for the course. These marks are needed by the time the exam board meets, (it's helpful if they are available a few days beforehand).

Once the client's marks are available a presentation is held and the teams that receive the top marks from the client are awarded a prize (£50 – 100) per person in the winning teams). Thus, the cost of the software to the client is £250 - 500.

The client is then free to use the winning software in their business. However, clients are asked not to sell on the software in any form without the prior agreement of the Department of Computer Science and the University's Research Consultancy Office.

We hope that the software chosen will be trouble-free and productive, however, we realise that problems may occur after the students have finished the course. It should be possible to contract someone to carry out maintenance if that is necessary, we will help if we can and there are occasional mechanisms for our senior students to take on

this work, at a nominal cost, usually. In the past, however, our clients have been very pleased with their software and problems have been few and far between. It is difficult to estimate the commercial value of the software which is developed, suffice it to say that a typical application of the type we have delivered to many of our clients would cost tens of thousands of pounds if produced by consultants!

We might like to follow up the client's experience at some time, to help us assess the professionalism of the students and to identify any improvements we can make to the project arrangements.