



Systems Development Project Briefing

INF3003W IS3 2008

Objective

The major development project is designed to give students first hand experience of the management issues and complexities of running a real-world system development project. Students experience the subtleties and complexities of interacting with users in real organisations, some of whom will have no prior exposure to computer technology and applications in business. An important benefit is that students gain experience of working in teams and realise the challenges that this entails.

Teams

Students are guided to choose team members who may bring different skill sets to the team of 5 members, and are urged to follow ICT charter standards at

(<http://www.ictcharter.org.za/content/ICTbeecharter04may2005-Minister.pdf> or
<http://www.ictcharter.org.za/content/ICT%20BEE%20Charter%20Commission%20reports.pdf>)

when selecting members. An impartial facilitator will assist to monitor the process and make amendments to teams if necessary. This size, 5 members, is optimal in terms of spreading the required work and achieving an adequate mix of skills and personalities. At the same time it does not allow members to "coast" and benefit from the work of others without contributing. It is also a size which permits reasonably easy logistics in terms of arranging physical meetings and walkthroughs.

Technical Environment

The designated technical environment for the development work is Visual Basic.Net 2008 using the SQL 2005 database engine. This environment is installed on a dedicated server of the Information Systems Department to which all third year students will have access. Students will also have access to two dedicated servers hosting Microsoft Project Server 2007, Microsoft Project 2007, SQL Server 2005 and SharePoint Team Services. These tools will allow groups to upload all deliverables electronically, monitor and manage project plans, and enable communication with course co-ordinator, project managers and team members. Students are also free to work on (legal) personal copies of the software on their own machines if they prefer. The final system must be demonstrated using the Information Systems (IS) Department network or a configuration provided by the team. Although students are discouraged to use alternative development environments, groups with excellent skills in other programming languages

wishing to do so may motivate this in writing (e-mail) to the course co-ordinator. It is however necessary to note that the Object Oriented (OO) paradigm must be used for development and no other environment not fully supporting this, will be accepted. Teams using any environment other than Visual Basic.Net 2005 under Windows XP must accept that the University cannot provide support or infrastructure for the alternative environment, and that their project is consequently at higher risk.

Business Problem

This year the business problem is a comprehensive web-based Customer Relationship Management (CRM) system to capture procedures and business processes programmatically in order to enhance customer satisfaction and encourage greater business coherence. CRM can be defined as a customer-focused business strategy that dynamically integrates sales, marketing and customer service in order to create and add value for the company and its customers (Chalmers, 2006). Examples of typical systems would be helpdesk systems or call centres, small and medium size businesses (SME's) with the challenge to acquire and retain customers, systems tasks to manage delegates or students, etc.

The following are important items to consider:

- Employee details
- Customer details
- Products/Services

Functionality guidelines which could be valuable might include:

- Managing employee/customer details
- Centralisation of customer data
- Monitoring processes and setting standards
- Managing sales (services or products), marketing and customer service
- Tracking services or products
- Reporting and status information on the completion of tasks, etc.
- Statistical information, e.g. to support tracking
- High level billing system or exporting of figures to an existing package
- Access system control (visitors)
- Sorting/retrieving information to assist in effective management
- Rich data retrieval with easy keystrokes/macros
- Public interface / advertising portal on screen to make announcements
- Interfacing with MS Office

- Reporting feature to provide statistical information and assist management with efficient control of inventory accuracy

In addition, the system should incorporate the normal generic system functions, such as:

- Security
- Recovery and transaction management
- Help
- Backup and archiving

You are free to enhance the functionality of your application by making use of facilities in other commonly available desktop systems, such as word-processors, spreadsheets, graphic applications, etc. For the purpose of demonstration, it might be wise to stick to the MS Office and other applications available on our IS Network.

Sponsor Community

You will be responsible for finding a suitable organisation to provide the specifications and the functionality for your system. You should identify at least two individuals within the organisation who are prepared to become involved. You are free to approach any suitable organisation on or off campus, with the provisions as spelt out later in this document. Attached to this document is a letter of introduction, explaining the project and the role of candidate users to assist you in this task. Individual sponsors will need to commit to providing a minimum of two days worth of time between now and July to assist in drawing up requirements, prototyping user interfaces, and assessing documentation and installation procedures. A form is provided which users should sign and which you must return to the project coordinator. Sponsors should understand that they will not necessarily receive a system at the end of the process. They may gain an appreciation of how a modern system could benefit their time and practice management. They might use the system, but maintenance cannot be guaranteed and the system may not sold for financial gain. At all times, these individuals should receive due respect and courtesy. This requires you to behave professionally, dress neatly, to be punctual and to meet any commitments which you make. In short, treat them as valued clients.

You should use time with your sponsors wisely. Prepare well by building your own model of how the system might function before meeting with the sponsor. Prepare questions which you would like to ask, but be prepared to deviate from the prepared list if it is found inappropriate. Plan a number of short sessions and do your homework between these. Allow time to go back to verify the models which you build. Try to arrange time to simply observe in the workplace without taking up staff time. Also, collect and analyse sample documents and reports if available. Respect the confidentiality of the sponsor's information at all times. In short, invest your time so you can save the sponsor and his/her staff's time.

Scoping

The scope of the project could become quite large. The required system for 2008 will exclude an accounting system. High level invoices can be produced for exportation to external systems. To limit the size to something manageable within the project deadlines formal estimates will be performed using work breakdown and Use Case Point (UCP) analysis. UCP is an estimation

measure based on Use Cases that enables the estimation of a software application's size and effort (Clem, 2005).

Configuration needed for Visual Basic.Net 2008

Similar configurations to that of the Commerce computer Labs will allow you to develop your software system effectively.

Full systems specification can be found online at:

<http://msdn2.microsoft.com/en-us/vs2008/products/bb894726.aspx>

To install Visual Studio 2008 Professional Edition, you need:

- Computer with a 1.6 GHz or faster processor
- Visual Studio 2008 can be installed on the following operating systems:
 - Windows Vista® (x86 & x64) - all editions except Starter Edition
 - Windows® XP (x86 & x64) with Service Pack 2 or later - all editions except Starter Edition
 - Windows Server® 2003 (x86 & x64) with Service Pack 1 or later (all editions)
 - Windows Server 2003 R2 (x86 and x64) or later (all editions)
- 384 MB of RAM or more (768 MB of RAM or more for Windows Vista)
- 2.2 GB of available hard-disk space
- 5400 RPM hard drive
- 1024 x 768 or higher-resolution display
- DVD-ROM Drive
- Additional features may require Internet access.

Facilities like sound, multimedia etc. may be used, but your system should not necessarily require them to run. You are required to provide inter/intra/extranet facilities (i.e. your user interface layer in a browser environment). You may create the entire user interface in a browser environment if desired.

Code Resources

The main aims of pilot Library (LIPS) and the CodeX systems developed during the first semester are to provide students with an example implementing good programming principles and to act as a coding resource with methods to perform some of the necessary tasks. These methods and skills should be complemented and enhanced by individual research and by using references to coding web sites provided during the development of the course.

Project Management

In a normal systems development environment, project teams report to a Project Manager. In our case, staff members and some Masters students of the IS. Department will play this role for a number of appointed groups. Each Project Manager will look after approximately two groups. Groups will be expected to produce interim deliverables on a regular basis, as outlined in the INF3003W Deliverable sheet, and review these with their Project Manager. Microsoft Project Server 2007 will serve as the technology platform for the teams and each team will build and maintain their project plan using Microsoft Project in this environment. A group/team must meet with its Project Manager at least once every two weeks as indicated on the deliverable sheet. During these sessions the interim deliverables will be tested and assessed and the completion of tasks in the project plan will be monitored. These processes will provide guidance to the group, and act as a quality assurance mechanisms. The onus is on each team to make arrangements with the Project Manager to review deliverables. The marks obtained in these interim deliverables will contribute towards the Ongoing Evaluation Mark. Improved interim deliverables are collated to form the milestone deliverables, which should be of a higher standard than the interim deliverables. A selected group of project managers will act as Quality Managers and will mark the milestone deliverables that will form part of the documentation of the system.

Disclaimer

The project is conducted for educational purposes. It is not intended that the system or any of its components should go into production with any of the sponsor organisations involved. If any sponsor chooses to use the products resulting, they will do so on an unsupported basis and at their own risk. This should be made clear to anyone involved at all stages. The impression should never be created that the sponsor will ultimately get the final perfect system to use. The University of Cape Town owns the copyright to any deliverables handed in during this project. Participating users agree to abide by these guidelines and must sign a declaration to this effect.

Deadlines

The dates for completion of various deliverables can be found on the INF3003W website under Project Deliverables and also in the handout titled Project Deliverable Schedule.

Please note that you are required to demonstrate and hand-in a fully tested software system, with help facilities and the necessary documentation to support installation, operation and maintenance of the system.

Marks

Many students find the IS3 Systems Development Group Project to be one of the most challenging and rewarding experiences of their undergraduate degree. The project experience is enriched by the theory components added to this course. We hope that the same will apply to you. The project component, including all the deliverables, comprises 46% of INF3003W which is a significant portion of the course. You should however carefully plan and budget your time so as not to adversely impact your overall study programmes. Try to work steadily from the beginning, rather than assuming you can catch up with a burst at the end. We do not want to see you do well in the project, only to fail other courses.

Amended Requirements for INF3011F –Computer Science Students

For the requirements of INF3011F ONLY the business case (Milestone1) and the user specification document (Milestone2) will be produced. To assist students in this project a need will be identified in Industry. Computer Studies students will be divided in teams of 5 (or 4). Each team will have to find an individual or partial problem to solve. Students will be expected to present their completed projects to the project sponsor and a panel of examiners at the end of the first semester. Students enrolled for INF3011F will be excluded from the build phase of the project including the documentation pertaining to this phase.

Final Word

The final evaluation of the group project will incorporate a peer evaluation with the other assessment criteria. The peer evaluation will be done as described in the peer review document provided. It is thus vital to ensure that everyone in the team contributes to the best of his/her ability and that workloads are evenly distributed amongst the team members. To effectively monitor the contributions of individual team members, a peer evaluation will be conducted before every milestone deliverable. It remains important to remember that the sponsor personnel involved are volunteers, who might not eventually take possession of a working system. You are a representative of UCT, more specifically the Department of Information System, and should at all times act in a manner which will bring credit to the Department and the reputation of its students and alumni.

Please keep the project coordinator informed, as serious problems or incidents should be addressed and resolved as soon as possible. We are in for a lot of work, but also a lot of fun!

Reach high, for stars lie hidden in your soul. Dream deep, for every dream precedes the goal. *Pamela_Vaull_Starr*

Contact Details

[Elsje Scott](#) – Course Coordinator of INF3003W

e-mail: elsje.scott@uct.ac.za

Phone: 021 6504258

Room 4.14 LC

References

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