



## **CNP553 IT for Project Managers The Assignment**

### **Objectives**

This assignment is to act as a refresher in the use of elementary aspects of spreadsheets and databases and to extend students' knowledge in more advanced features and their applications including the integration between the two types of computer software.

This assignment will also give students an opportunity to develop an application using MS Excel and Access which will be useful to their current work and study in the construction industry or research areas.

### **The Assignment**

The assignment will produce a practical application of spreadsheets and databases by solving a realistic problem with the use of MS Excel and Access. Students will be required to identify a practical problem based from their professional experience, research and study at QUT that requires the processing of numeric data such as calculations and the manipulation of data such as sorting and queries. The job must be divided into two parts as equally as possible to cover the use of database features as well as the spreadsheet features. These features must include:

(In MS Excel):

- A series of calculation using formulas and mathematical functions.
- The incorporation of at least one of the statistical functions introduced, namely: histogram (for frequency distribution), what-if tables (for scenario analysis), solver (for optimisation) and regression (for regression analysis). Note that goal-seek does not count if used stand-alone.
- An area of worksheet that is a direct import from Access. This area should be free of any formatting work and be left the way it was originally imported.
- Reference to different worksheet areas (e.g. ranges) or worksheets
- Enhanced worksheet appearance (eg. texts, colours, and borders)
- Graphs for data presentation
- Macro(s) for automated tasks

(In MS Access)

- A database with at least two data tables. Each table will have a minimum of eight fields and eight record entries. One of the data tables must be directly imported from EXCEL then further expanded to include more data.
- Forms for viewing and adding records to the tables. These forms should be customised forms which incorporate enhanced appearance and a layout of your own design.

- Sort or Filter functions to organise records under different conditions, eg. Show activities with delays over 5% of original durations or building projects in Brisbane with a total costs in excess of 100 million dollars between 1995 and 1998.
- A query which draws the relationship of the two databases. Gather certain information that is not immediately available from any one of the databases.
- A report that represents results of your query. Use grouping and total functions where appropriate.

In addition, students must develop a mini-instruction manual to explain how their applications work. The instructions should relate to individual applications only and cover features such as how to load a file, where to retrieve information, what to enter as input data, how to see graphs, reports, etc, and how to generate reports. It is not about how to use Excel. Rather it is about how your application works.

### **An Example for the Assignment**

An example task that can be handled using spreadsheets for the assignment is set out below to give students some ideas of the amount of work they have to do individually. However students are strongly encouraged to devise an application for their own professional needs.

Applications with a demonstrated practicality (i.e. closely relating to your current work or research) will be given better marks.

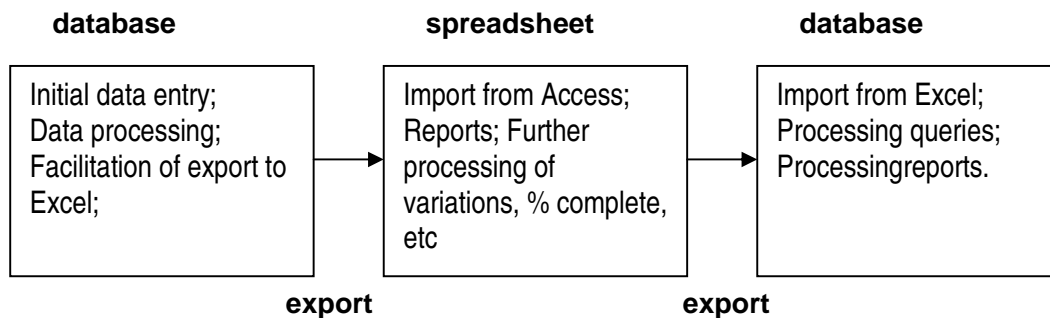
The Example Scenario:

Yang and Sons Constructions Pty Ltd requires a computerised process for their estimation and cost control procedures for onsite applications. Currently upon receiving job details, the contract administrator will need to record information as below:

Activity code; Unit rates;	Activity name; Budgeted quantity	Descriptions;	Unit;
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This information will then need to be so processed that budgeted costs are developed and column/pie charts presented to provide comparisons between trades/activities. As the job progresses, actual commitment data will be recorded. This will be in the form of completed quantities and committed costs, along with names and contact details of superintendents who are responsible to these activities/trades. Together with the previously recorded data, the percentage complete, cost variations, costs at completion can be calculated. A range of processing needs can be catered for such as querying which activities have been completed or who are in charge of those activities with cost overruns.

The computerised process will need to start with a database application, transfer data into spreadsheet, record and further process data within spreadsheet, then finally transfer information into the database again for processing and reporting. The following flow chart illustrates this procedure:



In this case, the natural link to the management and manipulation of data will be the consideration of how estimation information can be used for cost control, forecasting and procurement, and how new information can be fed back to estimation/job cost set-up.

Other requirement:

Printouts of all worksheets, calculation modules, printed graphs (separate or inclusive in worksheets), data tables, example of forms, queries, reports and other relevant data are required. A step-by-step user instruction is also required.

Other suitable topics for the assignment could be - discounted cash flow analysis for investment, the routine management functions of in a real estate agency (eg sales, lease, valuation, etc); a development appraisal procedure; a cost control system; a time based estimating process (i.e. using standard times for work elements along with revised hourly costs), etc.

### Steps of Completing the Assignment

- (1) Identify a task relating to your current working situation or a topic of interest to your study of your course.
- (2) In one double-sided page, define an application to handle the task by using Excel and Access and incorporating all of the features listed above. You must attach a flowchart or diagram to indicate the information flow.
- (3) Have the definition approved by the lecturer on or before **21 August 2007**.
- (4) After completing (1) to (3), develop the application and produce printouts.
- (5) Produce user instruction documents sufficient for other users to apply your application without you being present.
- (6) Prepare A4 sized, a bound submission incorporating definition, the printouts, other supporting information and a floppy disk containing the Excel and Access files (no CDs please).

### Note

- There are three essential components in this assignment: (a) identification of a practical problem (b) problem solving by combined use of Excel and Access (c) reporting through hardcopy printouts and a disk.
- Within the application, you should use sufficient text to make clear what the various elements are. In addition, user instructions must be written as an operation manual for the application developed.

- The assignment **must** use MS EXCEL and Access. Students are free to choose any version from Windows XP.
- The assignment work is to be completed by individual students and is **not** a group exercise. Students may be asked to demonstrate in class how they approached their problems and how their applications work.

**ASSIGNMENT DUE:**

**Tuesday 4 September 2007, via the Blackboard Digital DropBox**

**Late submission will be penalised at 20% of assignment mark per day**