

Business Scenario

As a Systems Developer with expertise in development of Excel/VBA-based solutions, you have been employed by a Business School to further improve an existing Excel model used by the administration team for the processing of final year options. The situation is as follows:

The Business School offers three programmes: Analytics & Management (AM), Finance & Management (FM) and Human Resource Management (HRM). Final year students are required to choose optional credits varying by programme/semester as follows:

Programme	Programme Code	Optional Credits to be chosen in ...	
		Semester One	Semester Two
Analytics & Management	SBUB10	40	30
Finance & Management	SBUB20	30	40
Human Resource Management	SBUB30	30	30

Optional modules			Available to ...		
Semester One	Code	Credits	AM	FM	HRM
International Business 1	SBC110	20	✓	✓	✓
Management Science	SBC120	20	✓	✓	✗
Change Management	SBC130	10	✓	✓	✓
Business Planning	SBC140	10	✓	✓	✓
Leading & Influencing	SBC150	10	✓	✓	✓
Decision Analysis	SBC160	10	✗	✓	✓
Semester Two	Code	Credits	AM	FM	HRM
International Business 2	SBC180	20	✓	✓	✓
Business Finance	SBC190	20	✗	✓	✓
Corporate Strategy	SBC200	10	✓	✓	✓
Project Management	SBC210	10	✓	✓	✓
Business Ethics	SBC220	10	✓	✓	✓
Corporate Governance	SBC230	10	✓	✗	✓
Semesters One & Two	Code	Credits	AM	FM	HRM
Management Dissertation	SBC240	30 ¹	✓	✓	✓

¹ The Management Dissertation can be split in one of only two ways: EITHER as 10 credits in Semester One and 20 credits in Semester Two OR 20 credits in Semester One and 10 credits in Semester Two.

Additional restrictions – Prerequisites:

Some modules have prerequisites that students must have studied in the second year or chosen as a semester one option. It is possible to choose a prerequisite module, without the follow-on module, e.g., a student can choose International Business 1 and not International Business 2.

You must choose / have studied ... (Prerequisite Module)	In order to study ... (Follow-on Module)
Business Transformation (Year 2 SBB020)	Change Management (SBC130)
Corporate Finance (Year 2 SBB050)	Corporate Governance (SBC230)
International Business 1 (SBC110)	International Business 2 (SBC180)

Additional restrictions – Excluded Combinations:

Some options contain very similar material and hence cannot be chosen together:

Students cannot choose ... and ... together due to similar material		
Management Science (SBC120)	and	Decision Analysis (SBC160)
Business Finance (SBC190)	and	Corporate Governance (SBC230)

Additional restrictions – Accredited Modules (HRM programme only):

HRM Students must choose at least 2 modules from the following list:

HRM Students – Select at least 2 modules from ...
Change Management (SBC130)
Leading & Influencing (SBC150)
Project Management (SBC210)
Business Ethics (SBC220)

Data File: xxxxxxxx-22BSB130-S2CW.xlsm

StudentData	Student ID, family name, first name(s), degree programme and email address
Modules	Details of second year and final year modules (code, title, part, semester, credit weighting and whether compulsory, optional or unavailable for each programme)
PartB	Record of modules studied by finalists in their second year by ID number. An “x” indicates that the student studied the module
PartC	Option choices already processed. “x” indicates student has chosen a module. Compulsory modules have already been included for all students (SBC010 – SBC090)
Status	List of student IDs in column A, status of choices in column B
Requests	Option choices which are yet to be processed. Each record contains the student ID in column A, followed by the chosen options, each in a separate column
Utilities	Command button linked to pre-written code to enable data to be reset

The number of students will vary from year to year and hence it is vital that your code should be able to cope with any number of students. Similarly, the number of records in the worksheet Requests will vary and hence your code should be able to process a variable number of requested updates.

System Requirements / Deliverables:

Deliver an Excel Macro-Enabled Workbook (xxxxxxx-22BSB130-S2CW.xlsm) capable of:

1. Displaying the status (Valid, Invalid or Missing) of individual option choices. The status must be shown in column B of the worksheet "Status", next to the student ID.
 - a. Valid – options selected meet all requirements, i.e., credits exactly match requirements for each semester, unavailable modules not selected, no missing prerequisites, no excluded combinations, and minimum number of accredited modules chosen (the last requirement is for HRM students only)
 - b. Invalid – options selected violate at least one requirement
 - c. Missing – no options have been recorded for the student in question
2. Providing more detailed information about the status of each student's option choices in columns C onwards in the Status worksheet. The client has not specified the exact format/layout of the information provided.
3. Processing records in the Requests worksheet, by updating the contents of worksheet PartC. Option choices must be written in the correct row/column. If a student has already chosen options, previous option choices must be removed and replaced with the new option choices.
4. Reporting:
Information provision must include, but is not necessarily limited to the following. The client has not specified the format/layout of the information provided.
 - a. Module registration numbers – number of students registered for modules
 - b. Class lists – list of students registered for modules

Guidance Notes

Allowable changes to xxxxxx-22BSB130-S2CW.xlsm

Worksheet	Allowable changes
StudentData	No changes permitted
PartB	
Requests	
Modules	
Utilities	
PartC	Contents of cells in columns K to W can be changed Values in these cells must only be "x" or empty, i.e. ""
Status	Contents of cells in columns B onwards can be changed Column B must only be "Valid", "Invalid" or "Missing"

Utilities Worksheet

The buttons on worksheet Utilities reset a specific worksheet back to its original state – all other sheets will be left unchanged. There are hidden worksheets used to reset data that must not be removed (StudentDataOrig, PartBOrg, PartCOrg, RequestsOrig, ModulesOrig, StatusOrig).

Do not make any changes to the Utilities worksheet, or amend the related code (Sub ResetData).

Additional worksheets

You may add additional worksheets to this file prior to submission. You may also add worksheets and/or create files as a result of processing requests and/or using the reporting facilities.