

Teaching Office Database Modification Journey

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1 Introduction

This is to describe the customisations that were made to the Teaching Office Database system during the JISC project including those that were retrofitted to departments involved earlier in the project. The Teaching Office Database forms one of the modules that was developed under the JISC funded E-Administration of Teaching Project

2 Project History

The Teaching Office Database system was developed with the Cambridge University Engineering Department as a tool to help them keep track of who has been assigned to each Teaching Duty. This allows the Teaching Administrator to enquire about and summarise responsibilities.

A copy of the system was later installed in the Judge Business School, who have some overlapping teaching responsibilities with Engineering. The two systems were set up so that teaching duties for a given person could be viewed across both departments.

During this JISC funded project the Teaching Office Database (TODB) system was made available and customised to meet the need of other departments in Cambridge. The aim was to take the existing software as a starting point and customize it individually for each participating department who would then take ownership of their own code. They would then be responsible both for hosting the code within their own department and for developing it further.

Matthew Jones has written a discussion document which reviews this development methodology in more detail – Software Development An Unconventional Approach.

A generic implementation of TODB has been produced which includes much of the commonly requested features and will be made available to other institutions under an Open Source Licence.

This document is aimed to give a more detailed report of how the features of the different TODBs differ. It is intended to be used in future both as a tool for support and to provide input into further implementations of TODB.

3 TODB Data

TODB holds data in two main tables – People and Jobs.

Each person is identified by an unique identifier and may also have some of the following:

- their **division** where a department is organised into separate divisions
- various **personal details** such as name, phone, room
- a date flag set when they have **okayed their duties**
- teaching **points and quota** where these are used

Note: Some departments use a points based weighting system for teaching jobs and some also set quotas for each person.

Each job can be classified by several criteria and a filtering mechanism is provided to allow the viewer to select according to these criteria. These may include:

- **Year** – Which student year this job applies to
- **Job type** – eg Lecturing, Practicals, Examining, Administration etc
- **Paper/Unit** – May be used to group several jobs together
- **Group** – Subject Group
- **Term**

A job may also hold notes about the job and the **points** earned by the job – sometimes with a formula used to derive these points. Some departments allow the entry of a venue and timeslot for each job which can be used to produce a **timetable** report.

4 Using TODB

TODB has two main classes of users: the Teaching Administrator who maintains the data and assigns people to jobs and members of the Teaching Staff who can view their assigned roles, comment on them to the Teaching Office and, in some cases, compare their duties with others. Each departmental implementation has a slightly different approach as to who can see what data and access the different functionality. This information is included in this document.

The screenshot below is taken from the Generic System and shows how the main TODB functions are accessed.

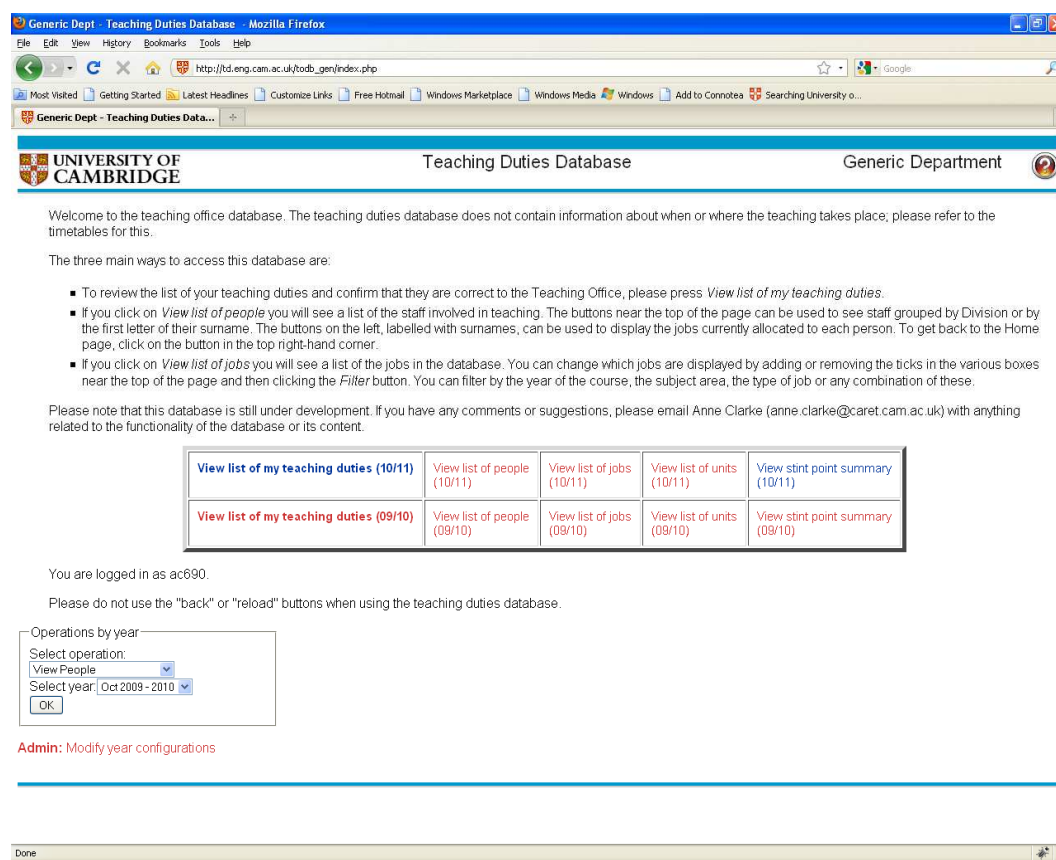


Figure 4-1 Main Screen for TODB

The functions here are:

- **View list of my teaching** duties – provides an interface used by the Teaching Staff to see their teaching allocation and to communicate with the Teaching Office about this.
- **View list of people** – used to maintain details about each person and includes a link to the jobs they do. This may also show a jobs breakdown and a timetable style report
- **View list of jobs** – used to maintain details about each teaching job and assign people to those jobs.
- **View list of units** – used to maintain units which may be used to link a group of jobs together
- **View Stint Point Summary** – an overall report detailing the teaching points earned by each person by job type.
- **Modify year configurations** – used to start a new academic year and maintain existing years.

An on-line User Guide is accessed by pressing the question mark icon on each screen. It is also available for download with the software. This provides full details on how to interact with the system.

5 Overview of Departmental Differences

The table below gives an overview of the distinct differences between the required functionality for different departments. Much of this has been retrofitted to other departments and is available in the Generic System.

Feature	Department*							
	Eng.	JBS	Chem.	Engl.	Vet.	Div.	Bio.	Gen.
People	x	x	x	x	X	x	x	x
Jobs	x	x	x	x	X	x	x	x
Divisions/subject groups (jobs and people)	x	x	x	x	X	x		x
Points	x	x		x				x
Quotas		x		x				x
Inter-TODB communication	x	x						-
Staff payment field							x	
Affiliation status						x	x	x
Detailed staff information						x		x
Access control		x	x	x				x
Granular access control		x	x					Some
Hidden data columns for read users						x		X
Aggregated data summaries		x		x			x	X
Timetables				x	X	x	x	X
Points calculator		x	x					X
Points formula	X		x					X
Own duties feedback	X			x				X
Units / papers	X	x					x	X
Jobs in multiple units				x				X
People in multiple divisions				x	X			X

The following provides a more detailed breakdown of the differences and unique features for each department. They give more details pertaining to the above table and also look at further changes made after the initial customisation. This is broken down into those changes made by a configuration file change and those that needed code and database changes.

6 Retrofitted Code

The following functionality was developed during the project and retrofitted across the board to other departments where relevant.

- Added facility to manage years – creating a new year, changing its status to ‘influx’ (so only certain users can view the data) and deleting a year.
- Provided facility to access functionally for years
- Points breakdown available from view people
- Last updated column for People/Jobs/Units to show when an item was added or last edited
- Name autocompletion when entering a person for a job
- Ability to hide certain columns from a non administrator user together with a switch to use when user testing this
- Fixed a problem when using ‘Others’ in conjunction with Points Breakdown
- Improved formatting eg table style for View People/Units/Jobs, Points Totals being aligned under points.
- Changed contact details including email addresses to be department specific
- Tooltips on column headings from View People/Jobs/Units
- Help Button linked to User Guide

7 Engineering

People Table

- **Engid** - Engineering Department’s own Id
- **Division** - Each person is in a single Division

Jobs Table

- **Points** are held for each Job. They are multiplied by 100 before being stored on the database – this holds for all departments where points are used.
- **Points formulae** are held for some jobs.

Inter TODB communication

Communication with Judge Business School to obtain details of a person’s teaching duties in the other department needs to talk through firewall.

Access control

Nothing other than Raven authentication – everyone is allowed to see everything.

Aggregated Data Summaries

Specialised report (**View UJobs**). A version specially formatted for printing is accessible from within this application.

This summarises jobs by Division which are then broken down into Units for the same Division, Jobs from other Units done by people from this Division and Units of Global Interest.

Timetables

Code, including database changes has been included but is has not been made accessible. Venue and timeslots would need adding to View Jobs and View Timetable checkbox added to View People to switch this on.

Points Formula

These are maintained using **View Points Formulae**. They can then be selected and entered for jobs and calculate points on the basis of the number of students taking each unit. These numbers are entered using **View Student Numbers per Unit** and a recalculate may be requested from View Points Formulae.

Own Duties Feedback

Teaching staff can send a mail to the Teaching Office to give feedback on their teaching assignments

Units/Papers

Are used to group jobs. A Unit may include more than one subject group – these are entered in the Subject Groups column. The Other Groups column is derived and will highlight any Groups associated with Jobs in this Unit that are not listed in the Subject Group column.

Changes Requested after initial customisation

- To link with JBS so they can run on different servers
- **View Faculty Summary** (aka Stint Point summary) provided and customised to show the following for each person:
 - Points from Lectures
 - Points from Coursework
 - Points from Examining
 - Points from Administration
 - Points from Preparation
 - Points from Other Job Types
 - Total Points

8 JBS

People Table

- **Division** – each person is in a single division/subject group
- **View Divs** – if this contains a value this person can view details for all the people in this division/subject group
- **Balance B/F** – Any outstanding points from a previous year can be entered here. This is added to the total points earned before comparing against the target.
- **Buyout/Offset** – Any points that have been bought out or offset may be entered here. This is added to the total points earned.
- **Quotas** – at set for each person

Jobs Table

- **Points** are held for each Job. A points calculator is available when entering jobs. I don't believe this is used rather the points are predefined and just entered.

Quotas

Each person has a quota of teaching points to fulfil. This defaults to 70. There may be a balance of points carried forward from a previous year or an increase in total points awarded (Buyout/Offset) both of which will be entered. These are used to calculate the difference between the total points and the quota which is shown on the View Faculty Summary.

Inter TODB communication

Communication with Engineering to obtain details of a person's teaching duties in the other department needs to talk through firewall.

Access control /Granular access control

This has been implemented such that a person can only see their own 'people' details. A division head can see 'people' details for everyone in their division. A column 'View Divs' on the people table is set to control which Divisions a person can see. This is copied over when a new year is created.

Aggregated Data Summaries

Three reports:

- **View Teaching Allocation Summary** – Totals by Subject Group/Division and Programme/Course
- **View Faculty Summary** - Total Points by Person including breakdown by job type and comparison with quota.
 - Person
 - Subject Group
 - Total Points including Buyout/Offset
 - Target or quota
 - Balance B/F
 - Buyout/Offset
 - Difference
 - Total Points
 - Supervision Points
 - School Duties Points
 - Other Duties Points
 - Sabbatical Points
- **View Quotas** – Shows jobs and people by Subject Group/Division

Units/Papers

Are used to group jobs by course number e.g. core, 3E1

Changes Requested after initial customisation

Made by configuration file changes

- Jobs sort order changed to course, group
- Removed '**Year**' column and renamed '**Paper**' column to '**Course No**' in Jobs View
- Removed unwanted groups U and V
- Division abbreviations changed
- Removed all years other than current from first screen

Requiring Code changes

- Jobs filtering tightened so that MBA does not pick up eMBA
- Checkboxes added to Jobs to select Jobs allocated to 'OUT' or 'ANO'
- Do not show timetabling checkbox
- Do not allow a normal user to see points breakdown for a person. They should be able to see points for a job.
- Remove % column for Faculty Summary
- Add totals to summary reports

9 Chemistry

People Table

- **Unique Name** – Staff codes (not surname) are used to identify each person

Jobs Table

- **Points** are held for each Job. A points calculator is available when entering jobs.

Divisions

Jobs are divided by Subject Group – eg Organic, Theoretical

Access control /Granular access control

A new category of user was created – a **Demonstrator User**. These are maintained like Admin and Flux users in the config.inc configuration file. These users have limited Edit rights – they can only edit jobs of a certain type - 'D' for demonstrating. They can not view or edit people or units.

Aggregated Data Summaries

- **View Faculty Summary** - Customised to show the following for each person:
Total Points
Total Hours
Total Teaching Points
Points from Coursework, Examining, Admin, Preparation and Demonstrating

Points Calculator/Formulae

Unlike Engineering, the points formula is not stored with a job as the calculation is based on the number of students answering a question rather than the number of students taking a Unit. The calculator button, available when editing a job, allows the user to calculate points based either on a

multiplier and offset or a stored formula (maintained using **View Points Formulae**) or just enter a value ! Since points are not calculated based on a predictable student number, there is no Recalculate Points facility

Units/Papers

Group jobs by Tripos Part.

Changes Requested after initial customisation

Made by configuration file changes

- Add a new year - facilitated by Modify year configurations

10 English

People Table

People may be in multiple divisions. Points and Quotas were being used during the initial development phase.

Jobs Table

Jobs may be in multiple teaching units (papers).

Divisions

Jobs are divided by Subject Group – e.g. Drama, USA

Points

These are no longer being used by the Department and they have yet to decide what will replace them.

Access control

They currently restrict access to those listed in the Apache configuration file.

Aggregated Data Summaries

View Stint Point Summary - Customised to show the following for each person:

- Total Points
- Total Hours
- Total Teaching Points
- Percentage of points from Teaching
- College Teaching Points
- Percentage of points from College
- Graduate Supervision Points
- Percentage of points from Graduate Supervision
- Administration Points
- Percentage of points from Administration

Timetables

The department evaluated the timetabling features of TODB but felt it did not meet their needs.

Own Duties

They plan to use this feature.

Units/Papers

Group jobs by Paper.

Changes Requested after initial customisation

Made by configuration file changes

- Add a new year - facilitated by Modify year configurations
- Removed all visible links to the Timetabling functionality
- Removed quota from the displays. Points were left.
- Revised build_jobs_select.php to facilitate changes the Computer Officer plans to make to the CSS used for the Jobs Filtering.

11 Veterinary Medicine

People Table

People may be in multiple divisions.

Jobs Table

Venue and Timeslots need to be entered to create Timetabling Information

Divisions

Jobs are divided by Subject Group – e.g. Equine, Farm Animal

Access control

Access is currently restricted to those listed in the Apache configuration file.

Aggregated Data Summaries

View Stint Point Summary - Not used and no plans to use this.

Timetables

Timetables are available both from View Jobs and from the Index Page. They would like students to have access to these so they can check for new venues on line.

Changes Requested after initial customisation

Made by configuration file changes

- References to Teaching Office changed to 'Tutorial Office'

- They would like to provide access to Timetables only to students. This request came too late for implementation within this project but I have sent them a note on how this might be achieved.

12 Divinity

People Table

They want to use TODB as a staff database and requested the following new columns:

In Case of Emergency

Home Number

Postal Address

Status - this column can be used to indicate when an external person needs paying.

Since some of these needed to be restricted from general view, this led to the introduction of displaying a separate set of columns for an admin user from those shown to a general user. This model was extended to Jobs and Units and also to other departments.

Jobs Table

Venue and Timeslots need to be entered to create Timetabling Information

Divisions

Jobs are divided by Subject Group – e.g. Old Testament, Doctrine

Points

Not used but plan to look into this at some point.

Access control

Access is restricted to those listed in the Apache configuration file.

Aggregated Data Summaries

View Stint Point Summary - Basic version provided but of little use while they do not use points

Timetables

The timetabling functionality developed for the Vet School has been provided but Venue and Timeslots for the Jobs need to be entered before this becomes useful.

They wanted TODB to be able to generate timetables for the Reporter which Matthew Jones attempted to do but found to be challenging.

Units/Papers

Group jobs by Paper.

Changes Requested after initial customisation

No further input at this stage.

13 Biochemistry

People Table

New columns added for:

Needs Paying ?

This can be set to indicate that an external lecturer needs payment.

They can use the Status column to indicate Sabbatical

Jobs Table

Requested additional columns for **Part** (rather than Year) and **Sessions**

Divisions

Does not use Divisions/Subject Groups

Points

These are not used by the Department.

Access control

They wanted to automatically allow access to all those people with CRSIDs on the database together with the Admin Users. Additional functionality to automatically maintain such a list as people are added and removed from the database was added. Apache checks against this list before allowing access.

Aggregated Data Summaries

View Stint Point Summary - Customised to show the following for each person:

- Hours spent Lecturing
- Hours spent in Classes
- Hours in Practical
- Hours spent Web-based teaching
- Total Teaching Hours
- Sessions spent Lecturing
- Sessions spent in Classes
- Sessions in Practical
- Sessions spent Web-based teaching
- Total Teaching Sessions
- Count of Project jobs
- Count of Examining jobs
- Count of Safety Jobs
- Count of Admin Jobs
- Count of Outreach Jobs

Note: Points are not used for this department

Timetables

The per person timetable feature is included but would need Timeslot information to be entered to make this of use.

Units/Papers

Group jobs by Paper e.g. Cells

Changes Requested after initial customisation

Made by configuration file changes

- Addition of job types for Web-based teaching and Outreach
- Adding new year to grid on front page

Requiring some code changes:

- Reporting for Web-based teaching and Outreach in Stint Summary Report
- Change View Units to order by Course
- Provide total hours for each Unit/Paper

14 Generic Version

The intention is to make as much as possible of the different departments' functionality available in the generic version. Much of this can be 'switched off' at a high level by not calling php scripts which provide unwanted functionality. The Developer's Guide details these scripts in more detail.

At a lower level, the configuration files may be used both to control the filtering and which columns are displayed.

People Table

The generic version has all the columns, identified as potentially useful, included. This includes both points and quota – this will default to an empty value if nothing is entered. A given installation will probably want to cull unnecessary columns to make the display simpler.

Both Show Timetable and Show jobs breakdown checkboxes are enabled.
People may be in multiple divisions.

Jobs Table

Again all the columns which have been identified as potentially useful are included. This includes venue and timeslots which are needed for producing a timetable style display.

Divisions

Can be used to divide jobs by subject group.

Points and Quota

These are both supported

Inter-TODB communication

This is not supported.

Staff Payment Field

This is not included but the status or notes column could be used for this

Status

Included

Detailed staff information

This includes:

In Case of Emergency

Home Number

Postal Address

All of these can be switched off from the TODB configuration.

Access control

Much of the access control is configured within your Apache configuration file.

You would normally request users to provide Institutional User Authentication (e.g Raven within the University of Cambridge).

You can then choose how to further restrict access:

- Allow all Institutionally Authenticated Users
- Allow Users who are in a fixed list – may be typed directly into the Apache Configuration file or held in a separate file which this references
- Allow all Users who are either on the TODB People table plus Administration Users. This is achieved by referencing a file (named by default TODB_Raven_Users.txt but changeable within the TODB configuration) which is automatically updated by TODB as people are added and deleted from the People table.

Granular access control

The Demonstration User mode (used in Chemistry) which only allows access to jobs of type 'D' can be switched on from the TODB configuration.

Hidden data columns for read users

This is provided for all departments and is controlled from the TODB configuration.

Aggregated Data Summaries

View Stint Point Summary - A version of this which includes teaching hours and points as well as some counts for each person has been provided. This is likely to need a php code change to customise it to meet the exact requirements of the adopting institution. Full details of how to do this are given in the Developer's Guide.

Timetables

The per person timetable feature and the overall View Timetable are included.

Points Calculator and Points Formulae

These are both available. The Points Formulae view, which allows points formulae to be entered and changed, can be accessed from 'operations by year' and can be added to the 'Grid' on the Index page if required. The Points Calculator can then access such formulae.

The Engineering Department generates points based on the number of students taking a course/unit. To implement this within the generic system, points formula have to be stored with a job – this would need a TODB configuration change. Then 'Students per Course', which is available from 'operations by year', would be used to record the number of students taking the course and View Points Formulae to maintain the formulae and recalculate the points globally.

Units/Papers

Group jobs by Paper e.g. 1P1

Own duties feedback

Supported

Units / papers

Supported

Jobs in multiple units

Supported

People in multiple Divisions

Supported