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| Room Booking System |
| User Guide |
|  |
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| **January 2016** |

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Contents

[Overview 2](#_Toc441175794)

[Introduction 2](#_Toc441175795)

[System Requirements 3](#_Toc441175796)

[Installation Instructions 3](#_Toc441175797)

[Usage 4](#_Toc441175798)

[Students 4](#_Toc441175799)

[Teachers 5](#_Toc441175800)

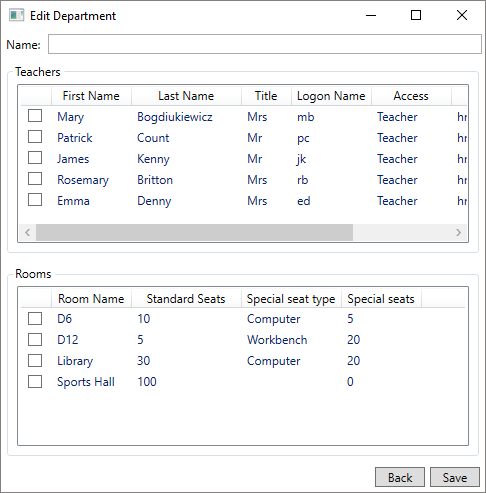
# Overview

## Introduction

The Room Booking System is designed to be an easy to use, scalable system for booking facilities, specifically school rooms. Its main overall features are customisability and inclusion of all users in the system, giving students restricted yet useful access to information usually only available to staff when using a traditional system.   
  
There are two main programs – the Server which is recommended to be run on a dedicated server machine, and the Client, which should run upon log-on on the standard computers used by students and staff around the school. The Clients connect to the Server and can then display and edit information on the system.  
  
The users are intended to be Teachers, Students, and Administrators. Each of these roles represents a degree of access to the system as well as the obvious “real-life” roles. An explanation of the system roles are given below.

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| --- | --- |
| User Type | Role |
| Student | View bookings and receive notifications of scheduled bookings taking place in the room they’re currently logged on in. |
| Teacher | Can create and edit their own bookings, as well as having all the capabilities of Students. Can receive emails notifying them about changes to their bookings etc. |
| Administrator | Can create and edit any bookings, have all the capabilities of a student, and can create and edit more core system entries, such as the Rooms and Periods that Bookings can take place in/during. |

## System Requirements

Server (Minimum)

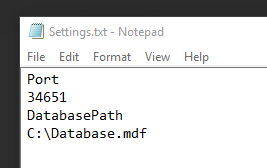
2GB free hard drive space.  
2GB RAM.   
2GHz processor.  
Windows XP or above.   
.NET Framework 4 or above.

Client (Minimum)

500MB free hard drive space.  
1GB RAM.   
2GHz processor.  
Windows XP or above.   
.NET Framework 4 or above.

## Installation Instructions

Server

The server should be set up by an administrator, and simply needs to be executed in order to start accepting client connections. By default it will create or use the database files in the same directory as it, and is otherwise standalone. Clients connect by default on port 34652, so the server machine should have this port open in firewalls etc.

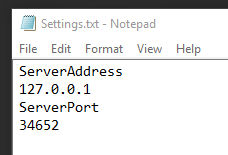
Placing a file called “Settings.txt” in the same directory as the server enables a few customisations to be made.

Adding the lines  
DatabasePath  
<Path>  
will allow the server to use a different database path.

Adding the lines  
Port  
<Port>  
will allow the server to start using a different port for connections – note this must also be changed in the Client settings files (see Client installation instructions below) to allow them to connect.

Client

Client installation is slightly trickier, and again should be done by an admin.   
While the client may be stored anywhere on a computer, it is useful (especially for students) for it to run on logon. This can be done many ways, the most usual being adding it to a list of startup programs given by a Windows Server installation. The easiest approach, and the one most independent of the existing system, is to add a shortcut to the Client.exe file to the “Startup” folder on the start menu – this can be accessed by right-clicking the “Startup” folder, and selecting “Open in new window”, then creating a shortcut to the Client executable there.

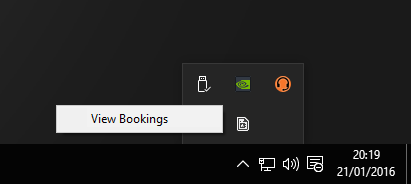
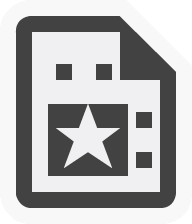
Clients **require** a settings file, different to the Server for which the file is optional. This file must be named “Settings.txt” and be in the same directory as the Client executable. In this file the Server IP address and listening port **must** be specified, in the same format as the server’s file.

Adding the lines  
ServerAddress  
<IP Address>  
will change the IP address of the server to connect to.

Adding the lines  
ServerPort  
<Port>  
will change the port the Client attempts to connect through.

# Usage

## Students

To open the timetable, look for the icon  in the system tray. Left clicking this icon, or right clicking and selecting the “View Bookings” option in the displayed context menu, will display the main window.

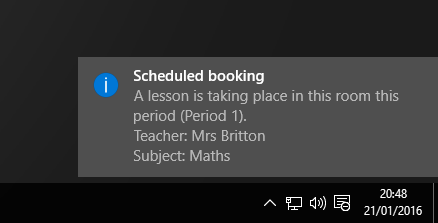


Previous/Next buttons for changing days.

The current date being viewed.

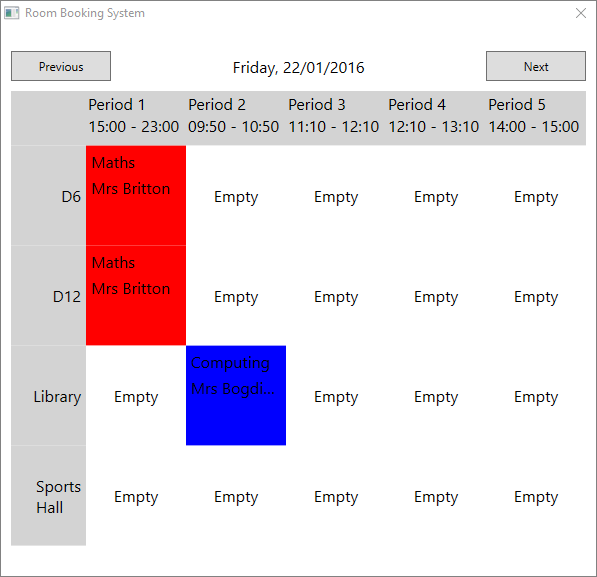
A Booking made by Mr Kenny for Physics during period 3 taking place in both D12 and the Library.

The timetable window displays today’s bookings – your view might look different depending on the rooms/periods you have. You can use the “Next” and “Previous” buttons to navigate between days – the timetable will update to display the desired day. Hovering over a room will display more information about it, including the number of seats it has and the type of special seats (eg computers) that it has.

You may see a popup when you’re using a computer in a room that’s been booked for the period you’re in – it will appear for a few seconds, displaying information about the booking, before vanishing. Again, this will look different depending on the booking and operating system.

This is to inform you that you may be interrupted while using the room by a class that have booked the room previously.

## Teachers



A Booking made by “Mrs Britton”.

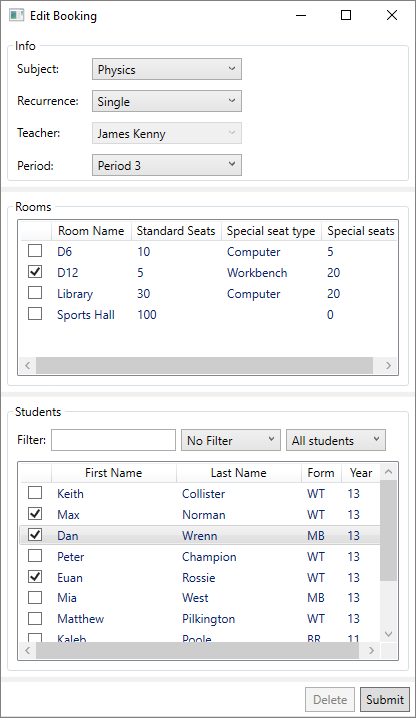
An empty slot that can be booked.

Please first read the Student information section for an introduction to the most basic parts of the system. As a Teacher, you have all the rights of a student plus more – all the features accessible by you are from the Timetable window.

To add a new booking, click an empty cell. This will open the “New Booking” window and let you edit the details of this booking. Some data should be filled in initially, such as the room and period based on which empty cell you clicked.  
Note that you can’t book over an existing booking – if you try to submit a booking that conflicts with an existing one, you’ll receive an error message (see error message section at the end of this guide). Press the “Save” button at the bottom to save the booking to the system, and close the window to cancel making the booking.

The basic fields (explained in the text)

Rooms – tick all those desired.  
  
  
  
  
  
Students (optional) – select all that will be in the booking, and use the filters to reduce hassle.



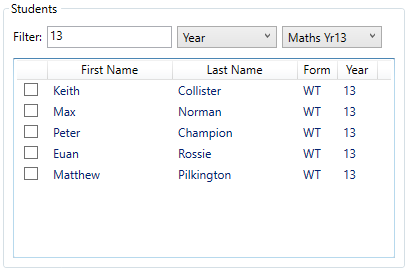
To edit an existing booking, click a cell containing one of your bookings. You cannot edit other teachers’ bookings. This will open up the same window as when creating a new booking, but the fields will be filled in as they were when you created it originally. You’re now free to adjust them until you’re happy, then press the “Save” button to submit or just close the window to cancel.

The Subject field is the Subject of the class you’re going to be teaching – the example here is Physics. Recurrence is how often this booking will recur – you can pick from “Single” (a one off booking), “Weekly” (will recur at the same time each week), “Fortnightly” (every two weeks), or “Monthly” (every 4 weeks). The “Period” field allows you to decide which period you want to make the booking for. Note that you can’t change the “Teacher” field – you can only make bookings for yourself.

The “Rooms” section lets you pick which rooms you want to book – some helpful information is displayed about them including how many and of what type the “Special Seats” are – these are workbenches/computer stations etc.

You can select Students from the Students area to attend the lesson (this is optional, it’ll only make it easier for them to see which lessons they’re involved in). You can filter the students by various criteria – type text into the filter box and select a filter, and the list will update to reflect students where the column indicated by the filter contains the text in the box. You can also filter by classes using the right-most drop-down box.

Field selector

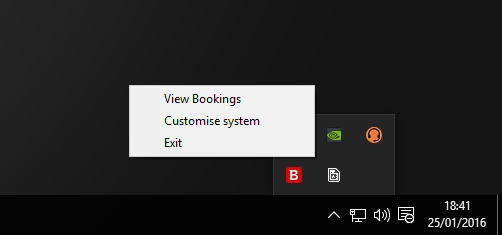


Filter text

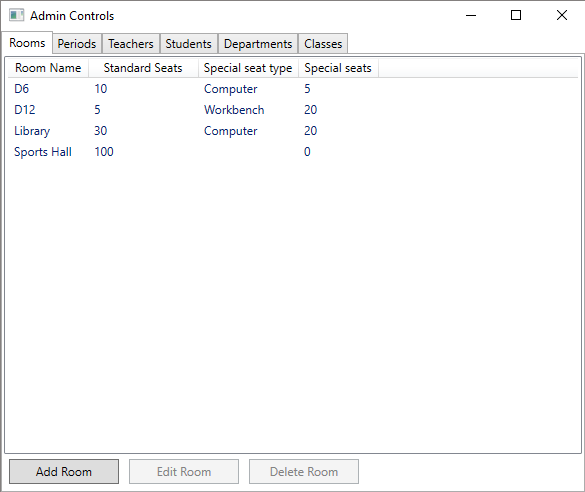
Class selector

To delete a booking, simply open the window as if you were about to edit it, then press the “Delete” button. A confirmation dialog will show, giving you a chance to confirm your choice. Hitting “Yes” will permanently delete the booking, pressing “No” will cancel the deletion.

## Administrators

Please first read both the Student and Teacher sections first, as they contain information about useful parts of the system as well as introducing windows etc.

As an administrator, you have access to all features of the system as a teacher and student, plus more. In practice, you’re able to view, create and edit bookings, including being able to create/edit bookings on behalf of any teacher. You can also edit background data, such as the Rooms, Periods, and lists of Teachers etc.



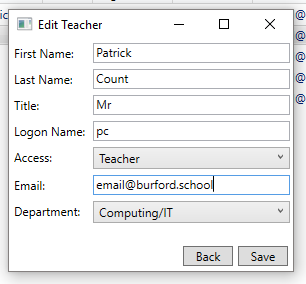
Entity tabs

Central Display

Editing buttons

This is all achieved through the Admin Control Panel, accessible from the taskbar icon’s context menu. There is another item on this menu for admins (compared to teachers), which is “Customise System”.

From the Admin Control Panel, you can modify all aspects of the system – from adding new bookable Rooms to editing Teacher’s email addresses. There are 6 tabs, each corresponding to a type of entity stored in the system – all these tabs have a similar interface, as shown on the right.  
A central view displays the items along with helpful information about them (in this case Rooms and associated data).  
Below the central display, there are 3 buttons – Add, Edit, and Delete, with obvious meanings. Pressing Delete will raise a confirmation dialog before actually deleting the entity (again, this is permanent), while pressing Add or Edit will display a window specific to each type of entity to allow you to customise the entry. Editing an existing entry will automatically fill in the fields on the window for you. Closing the window or pressing the “Back” button will cancel the changes – pressing the “Save” button will save the entry.

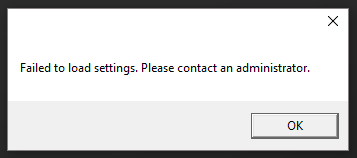
Trying to submit invalid data into certain fields will cause an error message preventing you from saving the entry. These are covered in more detail in the “Error Messages” section of this guide.

## Server (Administrators)

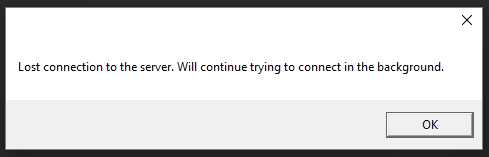
Once the Server is started it will take a few seconds to load the internal model and settings (if present), and then displays a message stating that it’s started to listen for clients. Information on events will be printed as they occur – these include Clients connecting/disconnecting, and Bookings/Rooms/Teachers etc. being added/edited/deleted.  
Pressing any key while the server window has focus will shut down the server and disconnect all clients cleanly, also ensuring the database is detached correctly. This is the recommended method of shutting down the server.  
Opening the server after the first run will resume with the same state as when it was shut down – all Bookings, Rooms etc will persist between shut downs.

## Error Messages (All Users)

This section provides information on all the error messages any users are likely to encounter, along with descriptions of how to resolve them.

Failed to load Settings

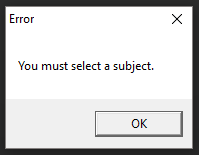
This error message will occur if a client is started and doesn’t have a “Settings.txt” file in the same directory as it, or the file is in an invalid format. To fix this, the file must be created and filled in with correct information in a valid format. See the installation guide for instructions on creating this file, as well as the screenshot as an example of a valid file.

Server Disconnection

If the server goes down or the connection between the client and the server is lost for some reason during operation, this error message will appear. Simultaneously, all windows created by the Client process will close, and the taskbar icon will hide itself. This is to prevent users from interaction with the program while it attempts to reconnect.  
The Client will automatically attempt to reconnect to the server using the information provided in the settings file – this will continue until it either reconnects (at which point it will show the taskbar icon again), or until it is closed.

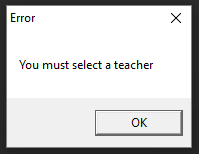
## Error Messages (Teachers and Administrators)

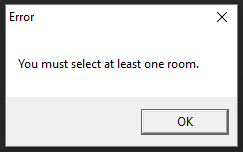
This section provides information on all the error messages that Teachers and Administrators are likely to encounter – students shouldn’t have access to the parts of the system where these errors will occur.

Edit Booking – Subject

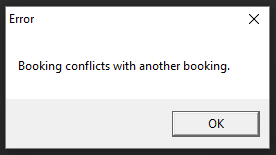
When on the Edit Booking window, attempting to submit the form before filling out all the fields will cause an error message to be displayed – leaving the “Subject” combobox unfilled will cause this specific error.  
This is an easy fix – select a Subject for the Booking to be allocated under, by choosing the relevant one from the drop down menu.

Edit Booking – Teacher

Only administrators should ever encounter this error – when making a booking as a teacher, the “Teacher” field is automatically filled with their ID, as teachers can only make bookings on their behalf. The field is also uneditable by teachers. As such, a teacher should never see this as they lack the ability to change the field from its pre-set, working value.  
Administrators may see this if they attempt to submit a Booking without allocating a Teacher to it. To fix this, select a Teacher from the drop down list.

Edit Booking – Rooms

Attempting to submit a Booking without selecting **any** rooms for the booking to take place in will cause this error message, as all Bookings must be allocated at least one room from the list. To fix this, check the checkbox to the left of the Room(s) that are desired in the list of bookable rooms so that at least one is checked.

Edit Booking – Conflict

Submitting a Booking where some of the Rooms selected are already being used by another Booking in the same period results in a conflict. Priority is given to the already existing Booking, so users aren’t able to overwrite existing bookings. The only true “fix” for this is a human one – reschedule your booking or request that the other teacher changes theirs.

## Error Messages (Administrator)

This section provides information on the error messages that only administrators are likely to see – they’re no more complex than the previous error messages, but they can only be triggered in areas of the program inaccessible to non-admin users.