 **MINISTRY OF EDUCATION AND TRAINING**

**FPT UNIVERSITY**

Capstone Project Document

**Timetable Management Support Tools**

|  |  |
| --- | --- |
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| **Capstone Project code** | TMST |

-Ho Chi Minh City, 05/01/2015-

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# Definitions, Acronyms, and Abbreviations

|  |  |
| --- | --- |
| **Name** | **Definition** |
| TMST | Timetable Management Support Tools |

# Software User’s Manual

## Installation Guide

### Setting up environment at server side

The web application must be installed into the server side:

#### Hardware requirements

Personal computers for developing with the minimum configuration:

* Processor: CPU Intel Xeon E3 2.0GHz.
* Memory: minimum 2GB of RAM.
* Available Disk Space: minimum 30GB hard disk (10GB install Window server).
* Wi-Fi Internet (> 2Mbps).

#### Software requirements

* Web Server:
* Apache Tomcat 8.0.34: <http://tomcat.apache.org/download-80.cgi>
* Java Runtime Environment 8 update 45 (jre-8u45) or above: <http://www.oracle.com/technetwork/java/javase/downloads/jre8-downloads-2133155.html>
* Microsoft Windows Server 2008: operating system.
* SQL Server 2008 R2: used to create and manage the database for web application.

### Deployment at server side

#### Set up system variable.

**Control Panel\All Control Panel Items\System\Advanced system settings**, in “Advanced” tab select **Environment variables**… button.

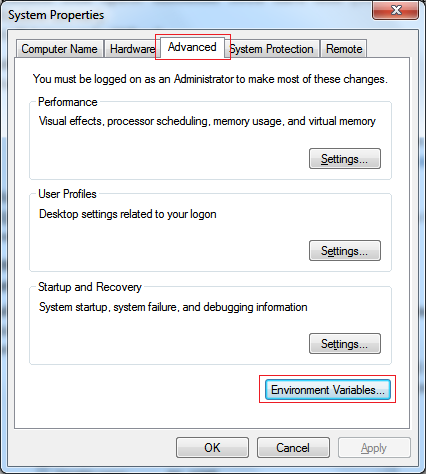


Figure : Set up system variable

* Set up JRE\_HOME:
  + Click “New…” button in User variables for Admin and fill variable name with JRE\_HOME and variable value with your JRE path installed on your computer.

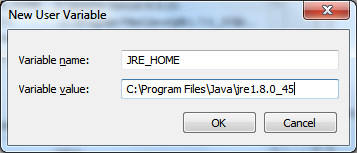


Figure : Set up JRE\_HOME

* Setup CATALINA\_HOME:
  + Click “New…” button in System variables and fill variable name with CATALINA\_HOME and variable value with your Tomcat server path on your computer.

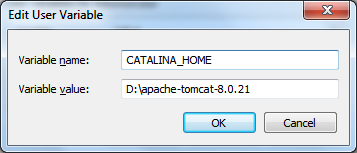
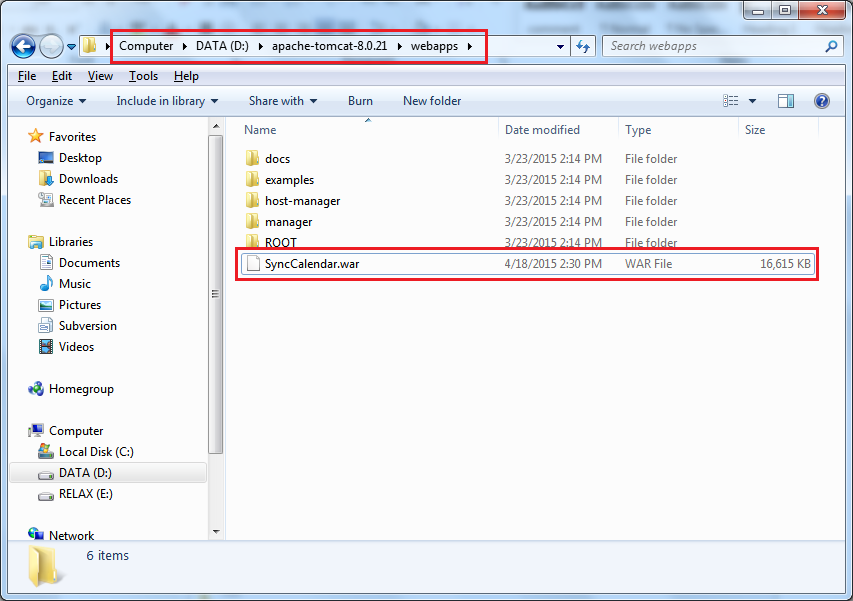


Figure : Setup CATALINA\_HOME

#### Prepare deployment package

* Copy the deployment package (SyncCalendar.war) to a webapps folder on the Tomcat server.



#### Deploy database

Open Microsoft SQL Server Management Studio.

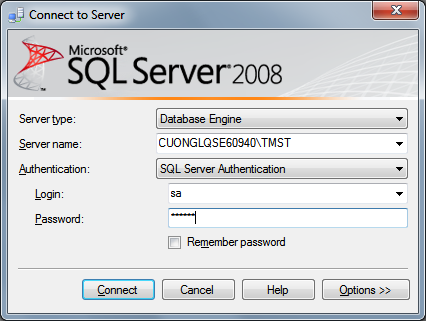
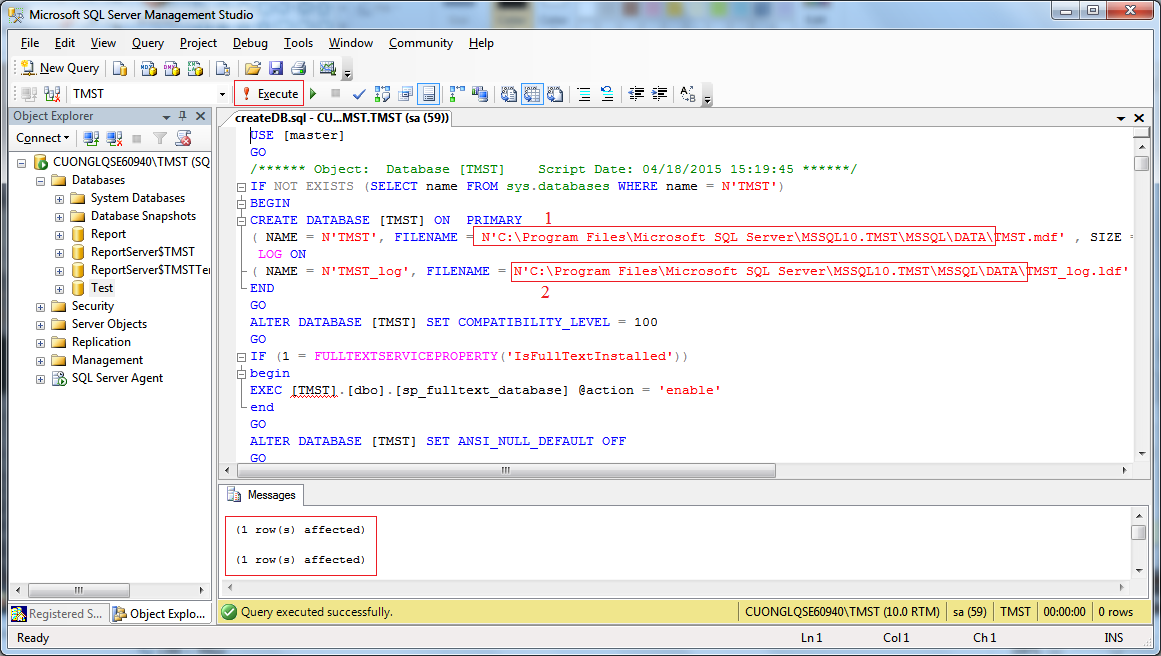


Figure : Connect SQL Server

Open and execute the createDB.sql file



* Replace 1 and 2 with Microsoft SQL Server local installed path

[local\_path]/MSSQL\DATA

* Run script file by click Execute
* Program notify (1 row(s) affected) and database TMST will be created.

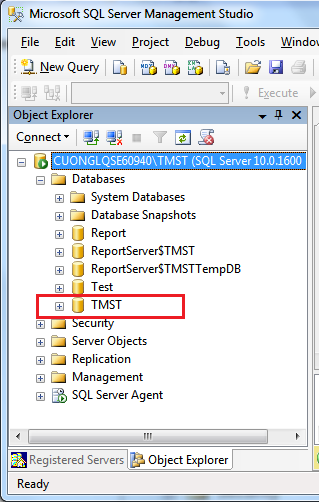


Figure : Create Database Success

#### Deploy web application on server

* Start server to unpacked SyncCalendar.war.

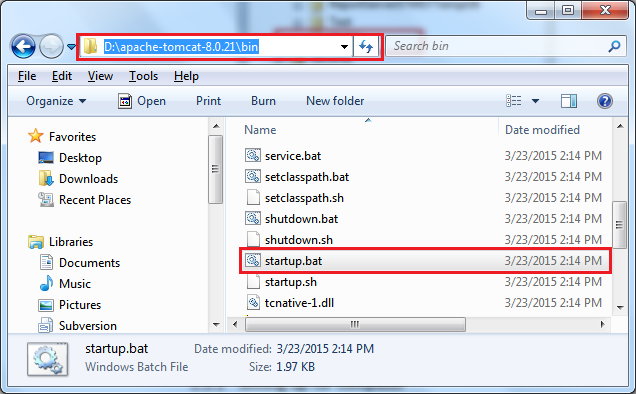


Figure : Start server

* Change the connection string in “D:\apache-tomcat-8.0.21\webapps\SyncCalendar\WEB-INF\classes\ DBConfig.properties”

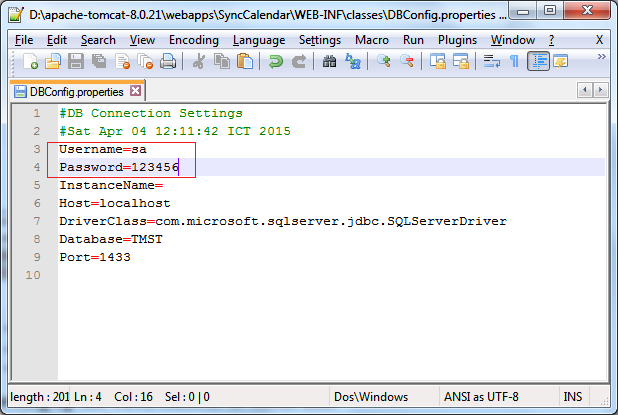


Figure : Change the connection string

* Restart server for the changes to take effect.
* Open localhost on server to see if deployment successful or not.
* Ex: http://localhost:8080/SyncCalendar/

### Setting up the environment at client side

#### Software requirements

* Java Runtime Environment 8 update 45 (jre-8u45) or above.

<http://www.oracle.com/technetwork/java/javase/downloads/jre8-downloads-2133155.html>

* SQL Server 2008 R2: used to create and manage the database for web application.

#### Deploy database

Reference **1.2.3 - Deploy database**

#### Run application

* Unzip the file TMST.rar
* Run “TMST.exe” file

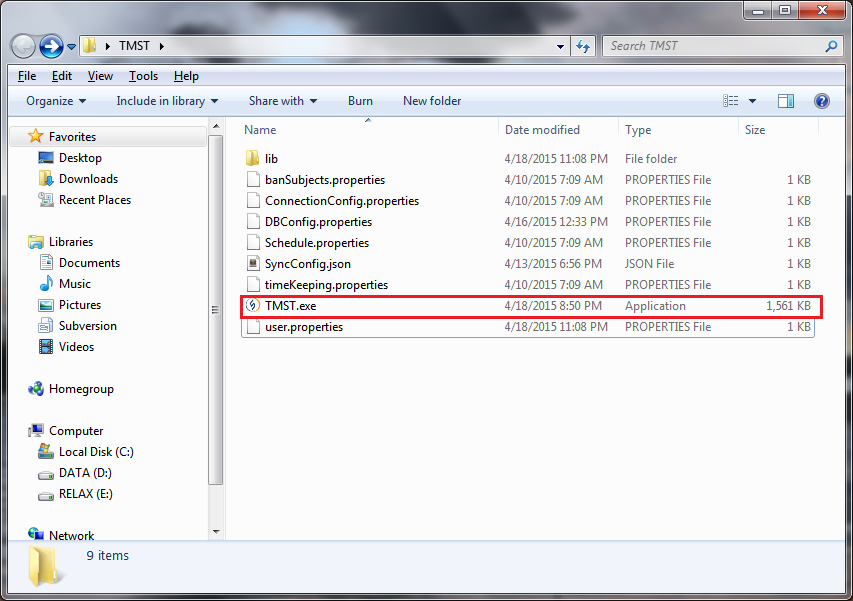


Figure : Run application

### Synchronize data between local and server

Reference: <http://vn.tips4admin.com/post/2011/04/16/%C4%90ong-bo-hoa-du-lieu-tren-2-Database-Server-dung-SQL-Server-2008.aspx>

## User Guide

### Import plan

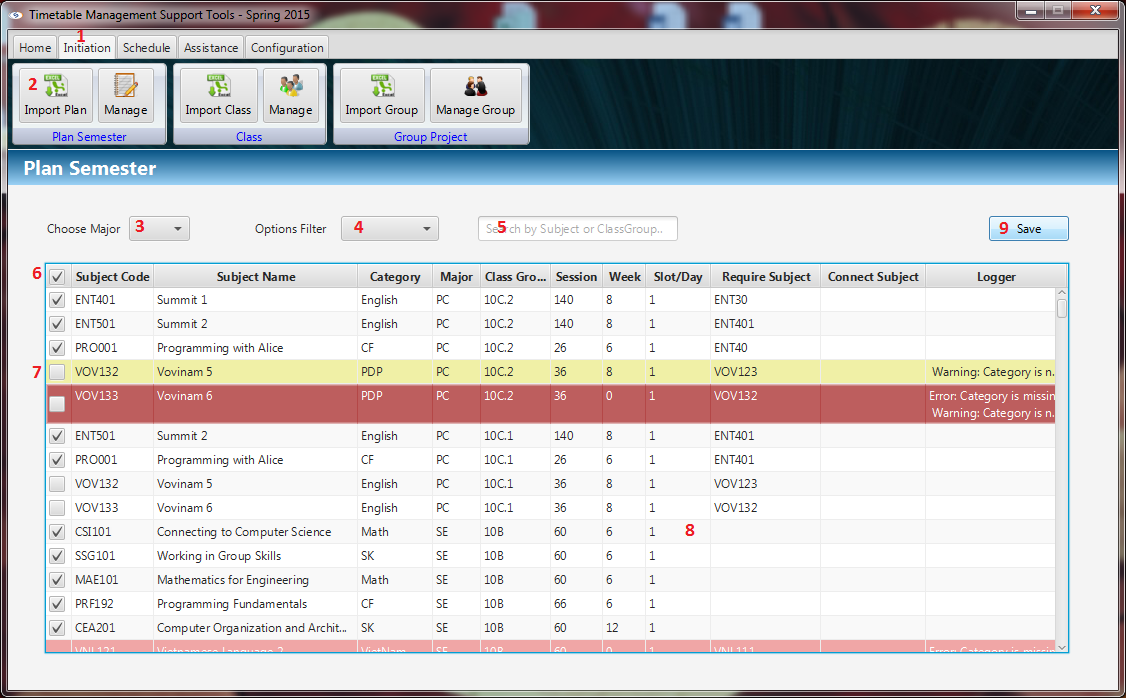


Figure : Import plan

|  |  |
| --- | --- |
| **Step** | **Description** |
| 1 | Click “Initiation” Tab |
| 2 | Click “Import Plan” button |
| 3 | Click major combo box to filter by major |
| 4 | Click options combo box to filter by another |
| 5 | Fill the text field to search by subject or class group |
| 6 | Stick the checkbox to select row on table |
| 7 | Stick to top checkbox to check all rows |
| 8 | Double clicks on row to edit information |
| 9 | Click “Save” button to save imported data |

### Import class

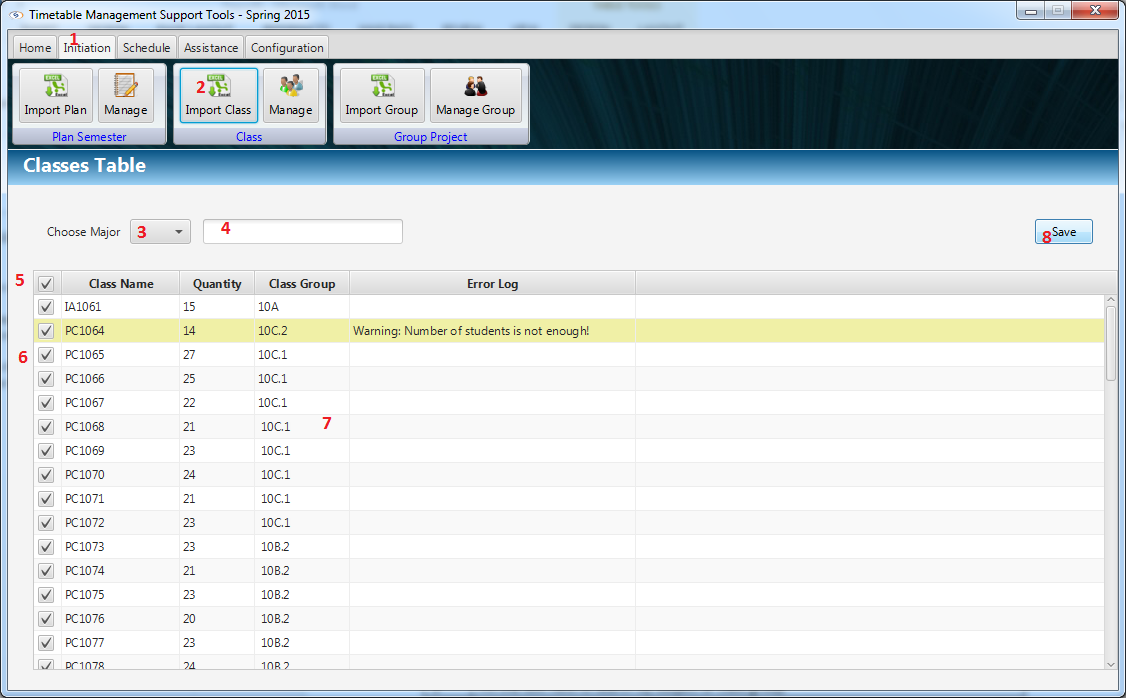


Figure : Import class

|  |  |
| --- | --- |
| **Step** | **Description** |
| 1 | Click “Initiation” Tab |
| 2 | Click “Import Class” button |
| 3 | Click major combo box to filter by major |
| 4 | Fill the text field to search by subject or class group |
| 5 | Stick the checkbox to select row on table |
| 6 | Stick to top checkbox to check all rows |
| 7 | Double clicks on row to edit information |
| 8 | Click “Save” button to save imported data |

### Import Schedule

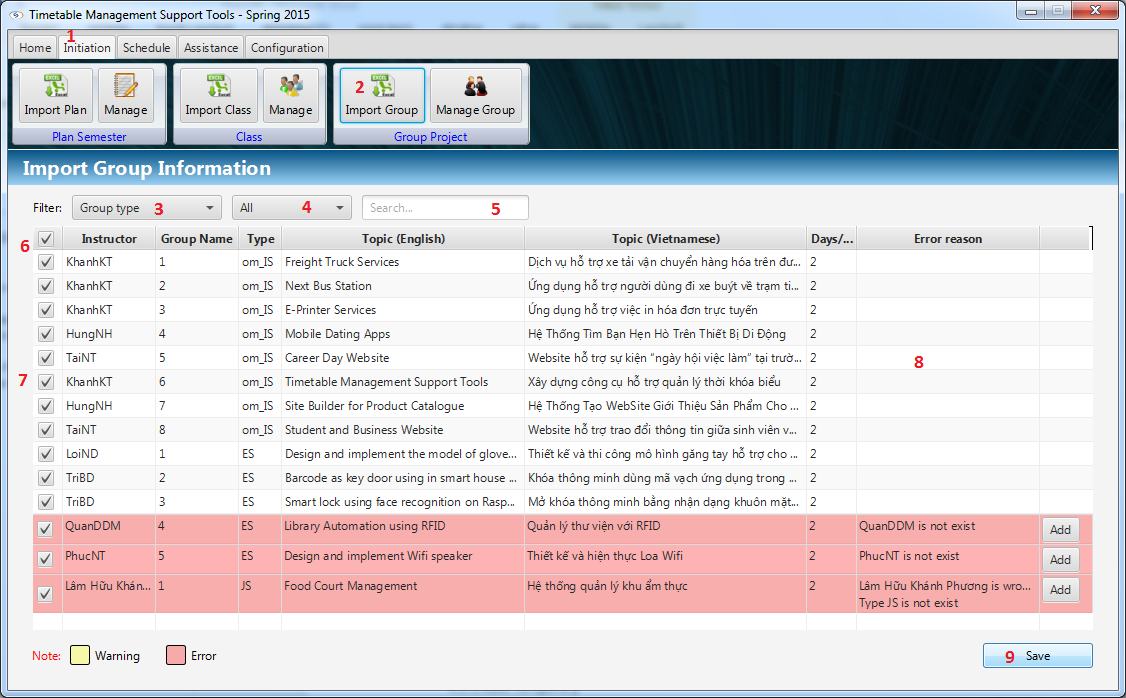


Figure : Import Schedule

|  |  |
| --- | --- |
| **Step** | **Description** |
| 1 | Click “Initiation” Tab |
| 2 | Click “Import Schedule” button |
| 3 | Click filter combo box to filter by group type |
| 4 | Click options combo box to filter by another options |
| 5 | Fill the text field to search |
| 5 | Click “Add” button to add instructors |
| 6 | Stick the checkbox to select row on table |
| 7 | Stick to top checkbox to check all rows |
| 8 | Double clicks on row to edit information |
| 9 | Click “Save” button to save imported data |

### Suggest Temporary

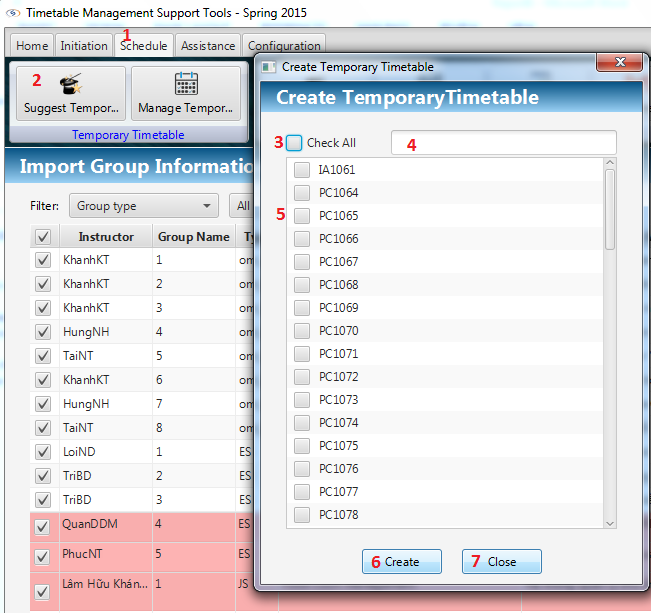


Figure : Suggest Temporary

|  |  |
| --- | --- |
| **Step** | **Description** |
| 1 | Click “Schedule” Tab |
| 2 | Click “Suggest Temporary” button |
| 3 | Stick to top checkbox to check all rows |
| 4 | Fill the text field to search |
| 5 | Check to select instructor by check box |
| 5 | Fill the text field to search |
| 6 | Click “Create” button to create temporary timetable |
| 7 | Click “Close” button to close the window |

### Edit Temporary Data

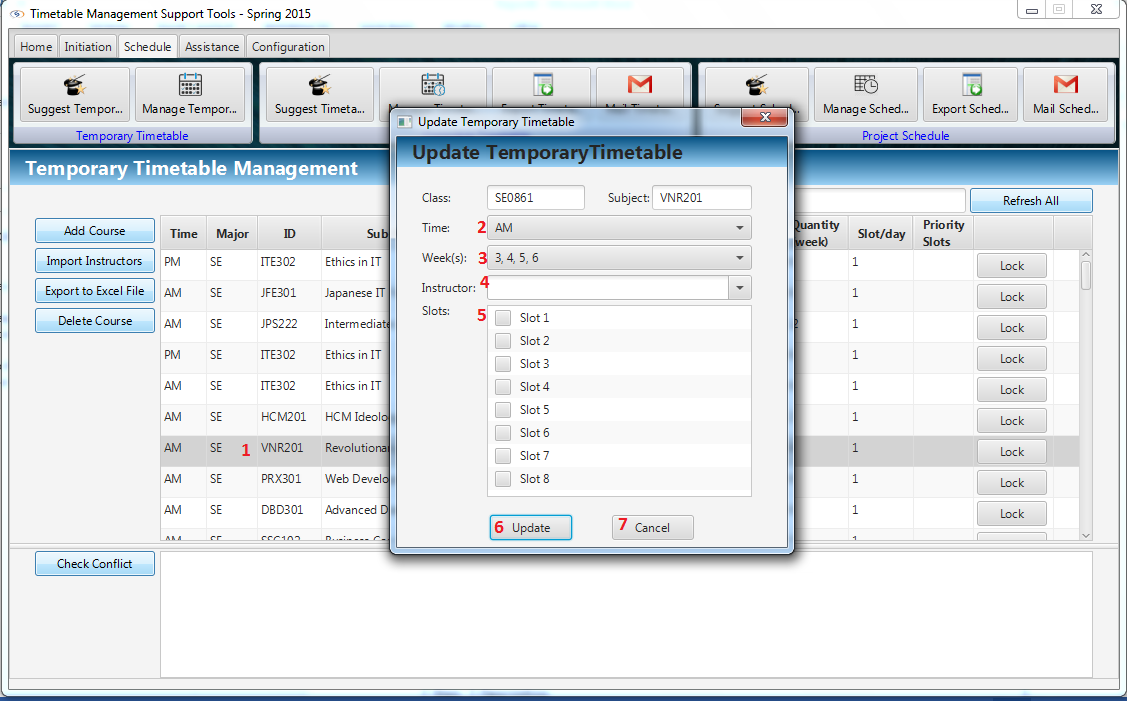


Figure : Edit Temporary Data

|  |  |
| --- | --- |
| **Step** | **Description** |
| 1 | Double clicks on a non-clock row of table |
| 2 | Select Time by Combo box |
| 3 | Select Week by Combo box |
| 4 | Select Instructor by Combo box |
| 5 | Check slots that course will study |
| 6 | Click “Update” button to update changed information |
| 7 | Click “Close” button to close window |

### View Temporary Data

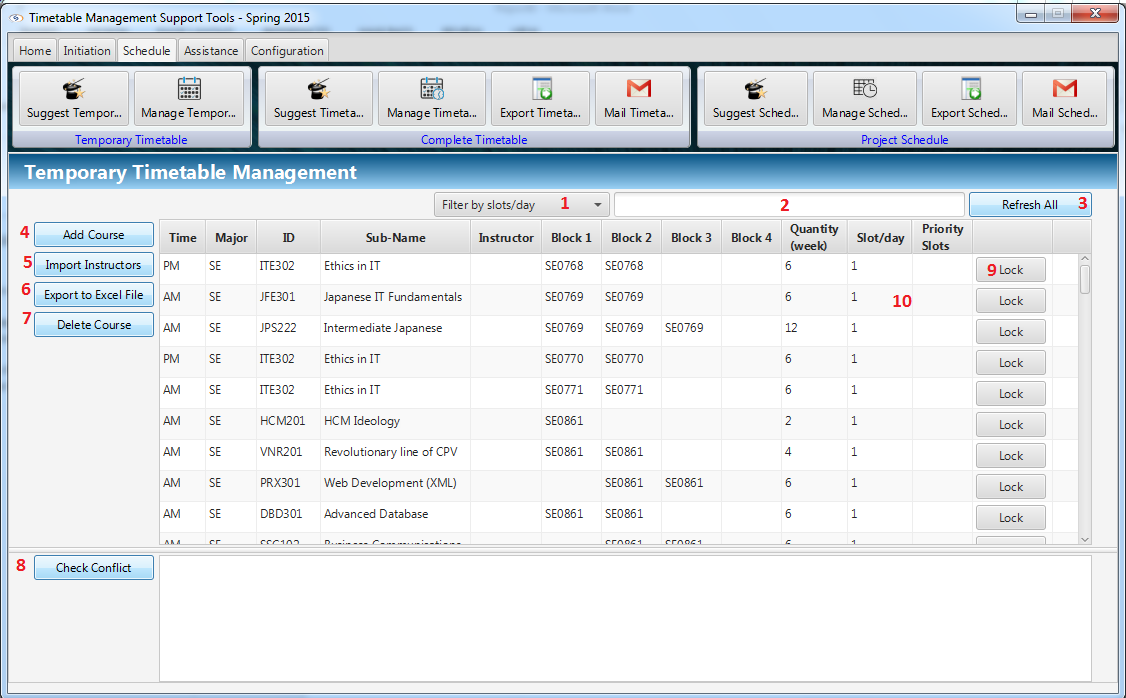


Figure : View Temporary Data

|  |  |
| --- | --- |
| **Step** | **Description** |
| 1 | Filter slot/day by combo box |
| 2 | Filter by attributes |
| 3 | Click “Refresh” button to reshow data |
| 4 | Click “Add Course” to add new course |
| 5 | Click “Import Instructors” to import instructor file |
| 6 | Click “Export to excel file” to export temporary timetable |
| 7 | Delete course |
| 8 | Check “Check Conflict” button to check conflict |
| 9 | Click “Clock” button to lock the row |
| 10 | Double clicks to row to edit data |

### Add Course

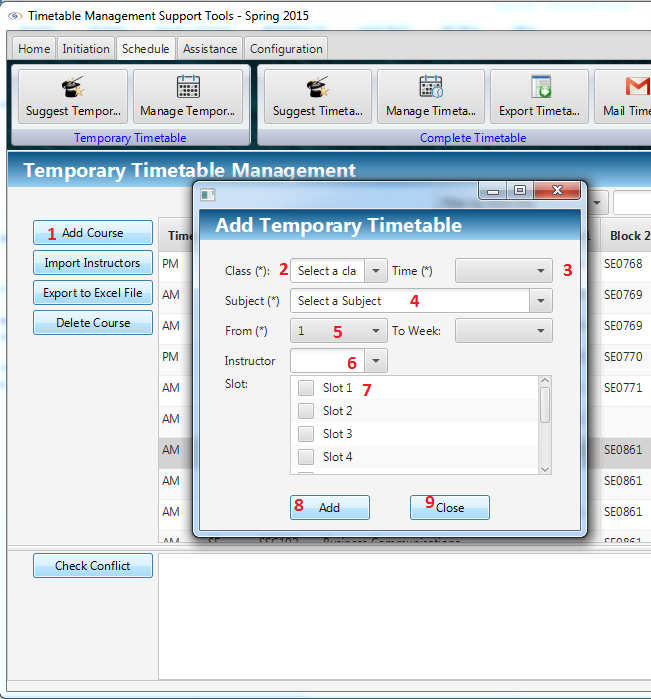


Figure : Add Course

|  |  |
| --- | --- |
| **Step** | **Description** |
| 1 | Click “Add Course” button |
| 2 | Select Class by combo box |
| 3 | Select time AM/PM by combo box |
| 4 | Select Subject by combo box |
| 5 | Select From week number by combo box, To week number will suggest automatically |
| 6 | Select Instructors by combo box |
| 7 | Check what slots that new course will study in |
| 8 | Click “Add” to add new course |
| 9 | Click “Close” to close window |

### Export to Excel

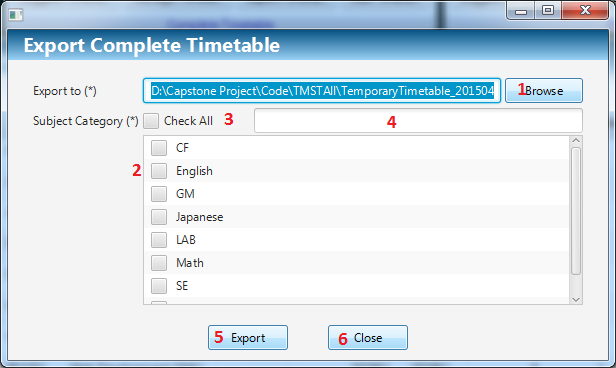


Figure : Export to Excel

|  |  |
| --- | --- |
| **Step** | **Description** |
| 1 | Click “Browse” button to select path to export |
| 2 | Check category checkboxes need to export |
| 3 | Check “Check All” button to check all category |
| 4 | Search category |
| 5 | Click “Export” button to export to selected location |
| 6 | Click “Close” button to close window |

### Create Complete

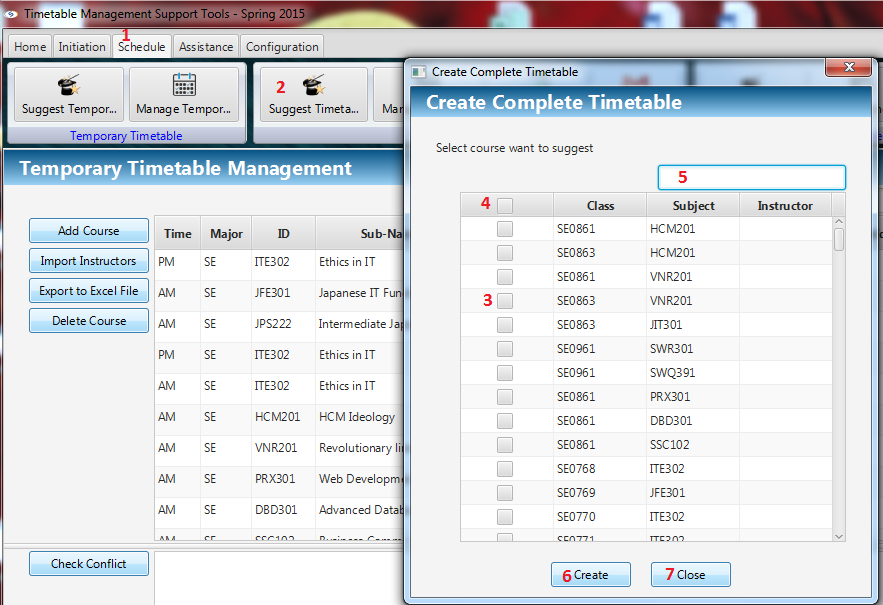


Figure : Create Complete

|  |  |
| --- | --- |
| **Step** | **Description** |
| 1 | Click “Schedule” Tab |
| 2 | Click “Suggest Timetable” button |
| 3 | Select classes will be suggested |
| 4 | Click top checkbox to check all classes |
| 5 | Filter data by Class, Subject, Instructor |
| 6 | Click “Create” button to create Complete timetable |
| 7 | Click “Close” button to close window |

### Show Complete

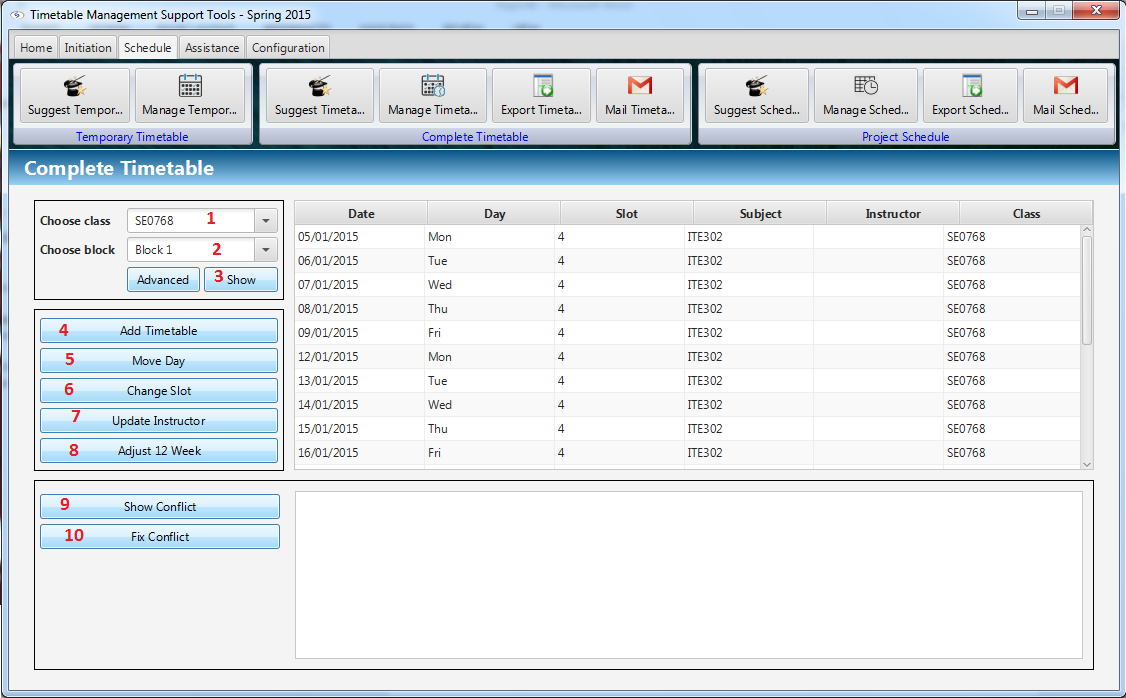


Figure : Show Complete

|  |  |
| --- | --- |
| **Step** | **Description** |
| 1 | Select Class by combo box |
| 2 | Select Block by combo box |
| 3 | Click “Show” button |
| 4 | Click “Add Timetable” button to add more timetable |
| 5 | Click “Move Day” button to move day |
| 6 | Click “Change Slot” button to change slot |
| 7 | Click “Update Instructor” to update instructor for a timetable |
| 9 | Click “Show conflict” to show conflict in time table |
| 10 | Click “Fix conflict” to fix conflict in timetable |

### Edit Complete

#### Add Time Table

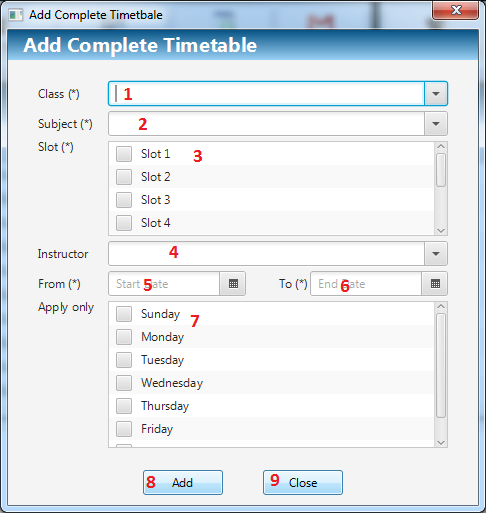


Figure : Add Time Table

|  |  |
| --- | --- |
| **Step** | **Description** |
| 1 | Select Class by combo box |
| 2 | Select Subject by combo box |
| 3 | Check what slots that new course will be studied in |
| 4 | Select Instructors by combo box |
| 5 | Select From day by Date picker |
| 6 | Select End day by Date picker |
| 7 | Check days in week will be studied on |
| 8 | Click “Add” to change information |
| 9 | Click “Close” to close the window |

#### Move Day

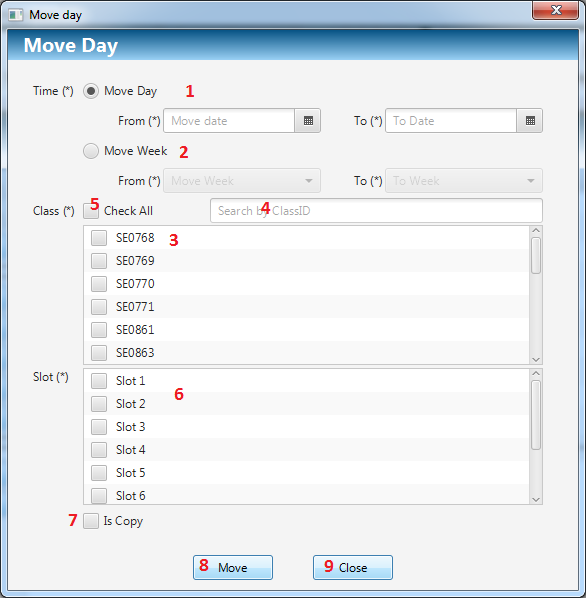


Figure : Move Day

|  |  |
| --- | --- |
| **Step** | **Description** |
| 1 | Select “Move day” to move day of course by radio button |
| 2 | Select “Move week” to move week of course by radio button |
| 3 | Select classes by checkbox |
| 4 | Filter class by text field |
| 5 | Select all Class by check All checkbox |
| 6 | Select slots by checkbox |
| 7 | Check “isCopy” to move to another day but not removing current day |
| 8 | Click “Move” button to move day |
| 9 | Click “Close” to close the window |

#### Change Slot

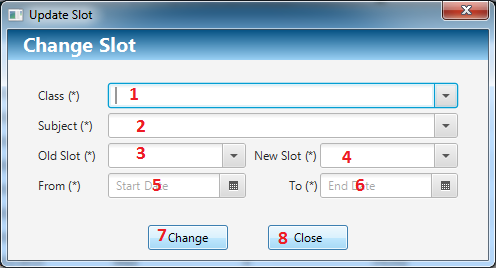


Figure : Change Slot

|  |  |
| --- | --- |
| **Step** | **Description** |
| 1 | Select Class by combo box |
| 2 | Select Subject by combo box |
| 3 | Select new slot by combo box |
| 4 | Select old slot by combo box |
| 5 | Select From day by Date picker |
| 6 | Select End day by Date picker |
| 7 | Click “Change” button to move day |
| 8 | Click “Close” to close the window |

#### Update Instructor

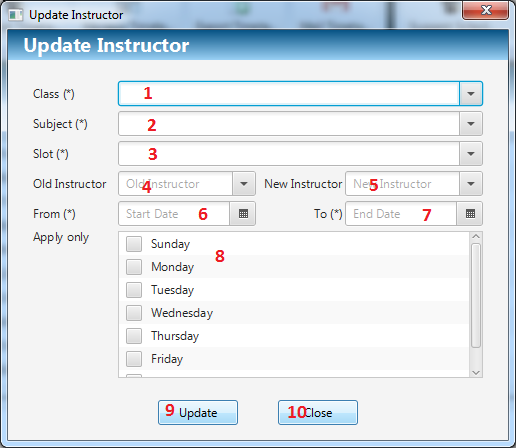


Figure : Update Instructor

|  |  |
| --- | --- |
| **Step** | **Description** |
| 1 | Select Class by combo box |
| 2 | Select Subject by combo box |
| 3 | Select Slot by combo box |
| 4 | Select old Instructor by combo box |
| 5 | Select new Instructor by combo box |
| 6 | Select From day that instructor will teach by Date picker |
| 7 | Select End day that instructor will teach by Date picker |
| 8 | Select Day in week by checkbox |
| 9 | Click “Update” button to move day |
| 10 | Click “Close” to close the window |

#### Adjust 12 week

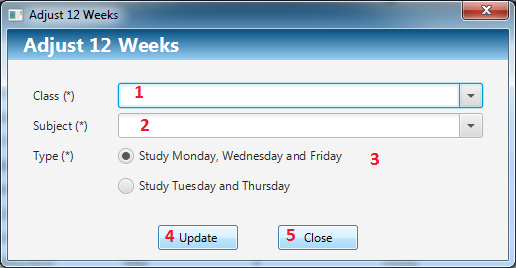


Figure : Adjust 12 week

|  |  |
| --- | --- |
| **Step** | **Description** |
| 1 | Select Class by combo box |
| 2 | Select Subject by combo box |
| 3 | Select types of days that will teach by radio button group |
| 4 | Click “Update” button to move day |
| 5 | Click “Close” to close the window |

### Export Timetable

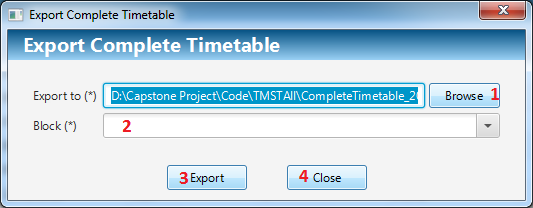


Figure : Export Timetable

|  |  |
| --- | --- |
| **Step** | **Description** |
| 1 | Click “Browse” button to select path to export |
| 2 | Select Block by Combo box |
| 3 | Click “Export” button to export to selected location |
| 4 | Click “Close” button to close window |

### Mail Timetable

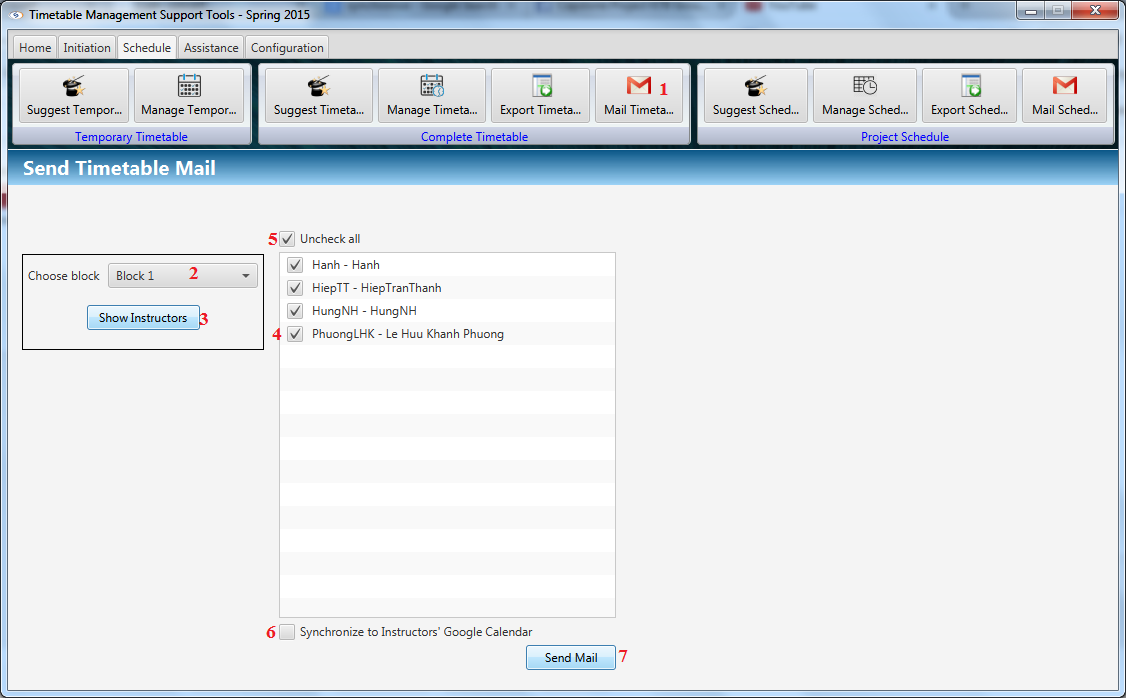


Figure : Mail Timetable

|  |  |
| --- | --- |
| **Step** | **Description** |
| 1 | Click “Mail timetable” button on Schedule |
| 2 | Select Block by Combo box |
| 3 | Click “Show Instructor” Button |
| 4 | Check instructor by checkbox |
| 5 | Check “Check all” button to check all instructors |
| 6 | Check “Synchronize to Instructor’s to Calendar” to synchronize with Google calendar |
| 7 | Click “Send Mail” button to send for selected instructors |

### Suggest Guide Project Schedule

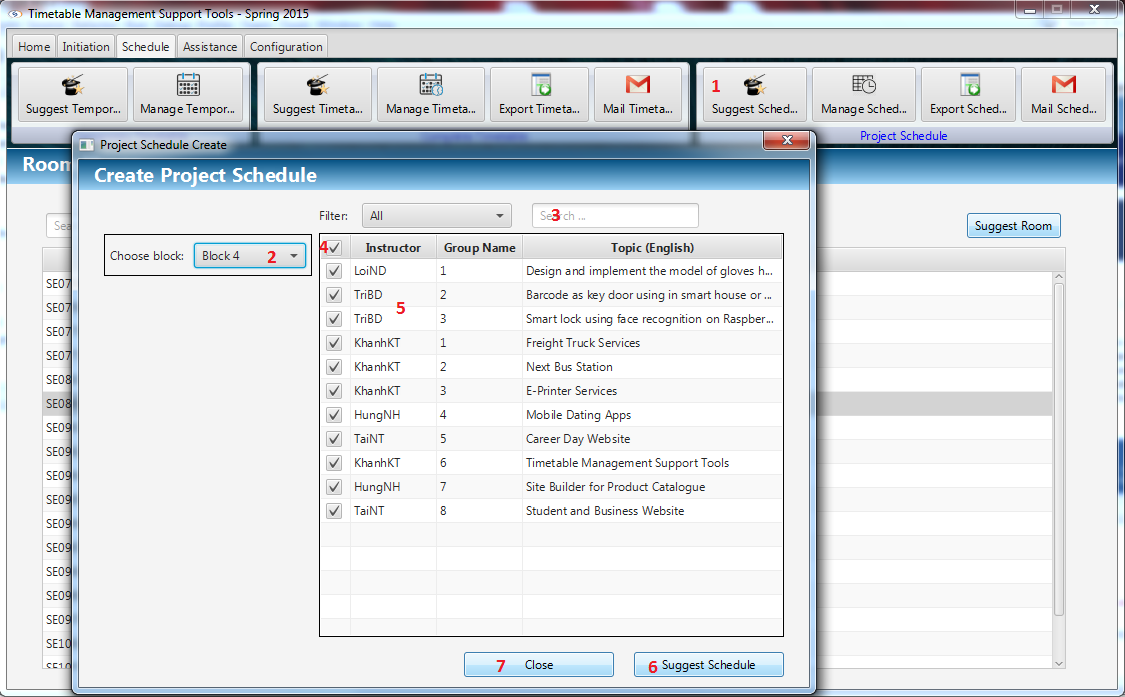


Figure : Suggest Guide Project Schedule

|  |  |
| --- | --- |
| **Step** | **Description** |
| 1 | Click “Suggest Schedule” button on Schedule Project |
| 2 | Select Block by Combo box |
| 3 | Search data by filter field |
| 4 | Check “Check all” button to check all instructors |
| 5 | Select Project by checkbox |
| 6 | Click “Suggest Schedule” button to suggest project schedule |
| 7 | Click “Close” to close the window |

### Manage Schedule

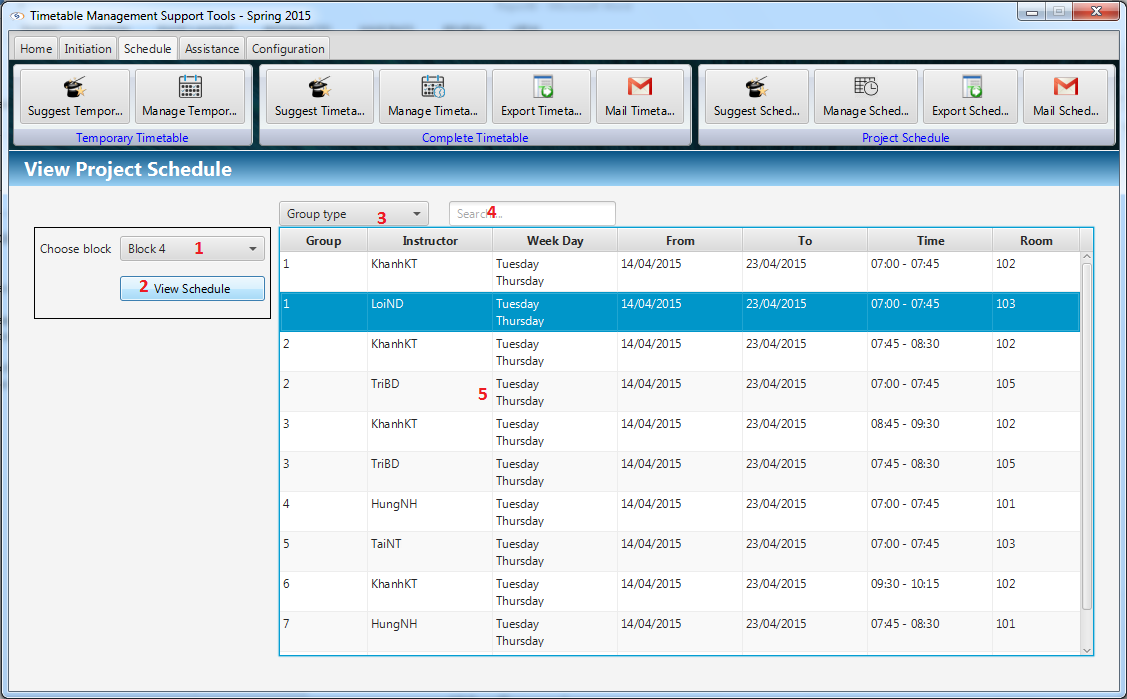


Figure : Manage Schedule

|  |  |
| --- | --- |
| **Step** | **Description** |
| 1 | Select Block by Combo box |
| 2 | Click “View Schedule” button to view |
| 3 | Schedule Selected Group Type by Combo box |
| 4 | Search data by filter field |
| 5 | Double clicks to edit data field |

### Edit Guide Project Schedule

#### Change Day

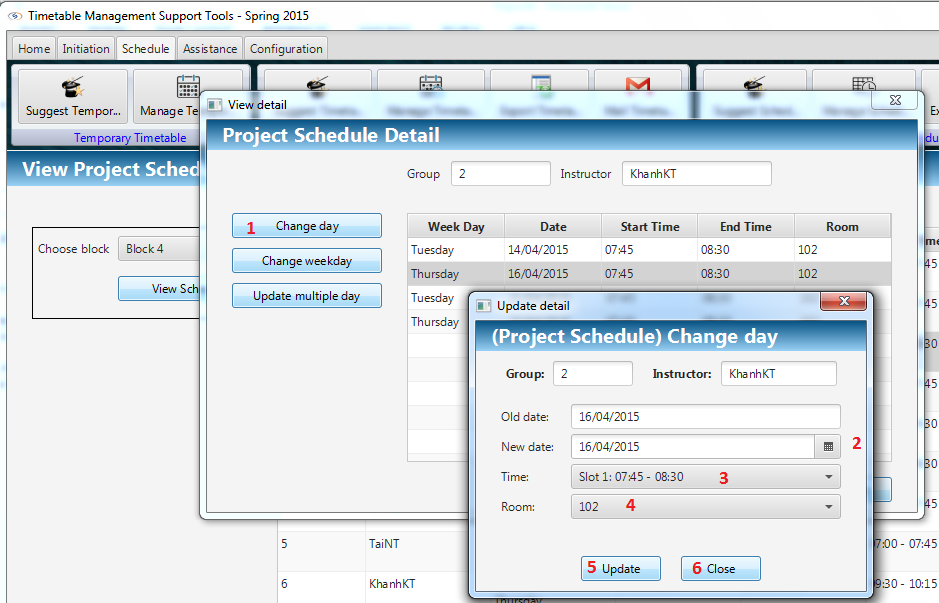


Figure : Change Day

|  |  |
| --- | --- |
| **Step** | **Description** |
| 1 | Click on “Change day” |
| 2 | Select date by day picker |
| 4 | Select time by combo box |
| 5 | Select room by combo box |
| 6 | Click “Update” button to update information |
| 7 | Click “Close” button to close window |

#### Change Week

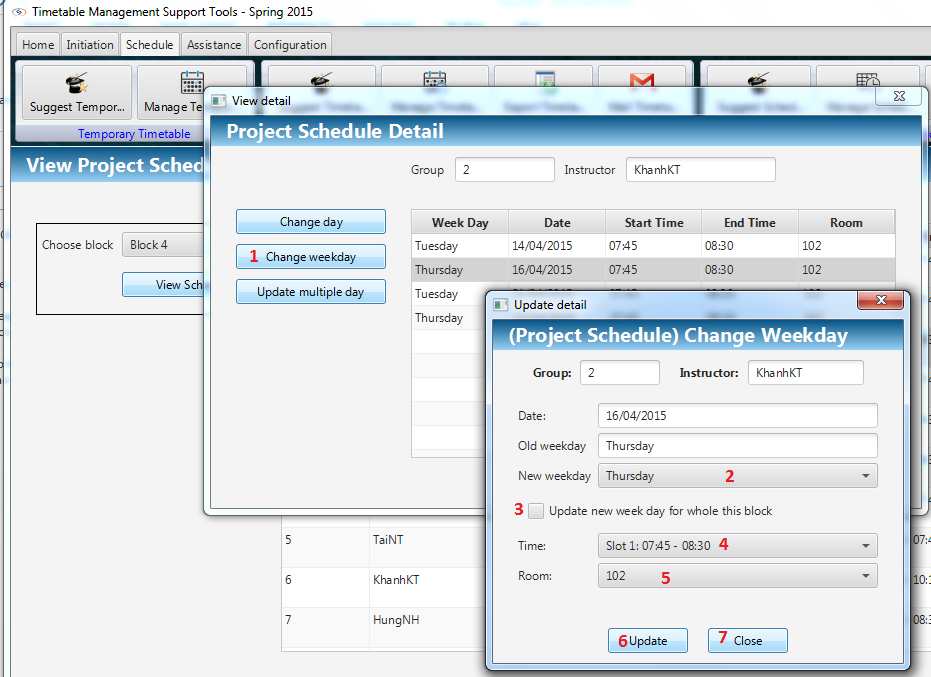


Figure : Change Week

|  |  |
| --- | --- |
| **Step** | **Description** |
| 1 | Click on “Change weekday” |
| 2 | Select new weekday by combo box |
| 3 | Stick checkbox to update week day for whole block |
| 4 | Select time by combo box |
| 5 | Select room by combo box |
| 6 | Click “Update” button to update information |
| 7 | Click “Close” button to close window |

#### Update Multiple Day

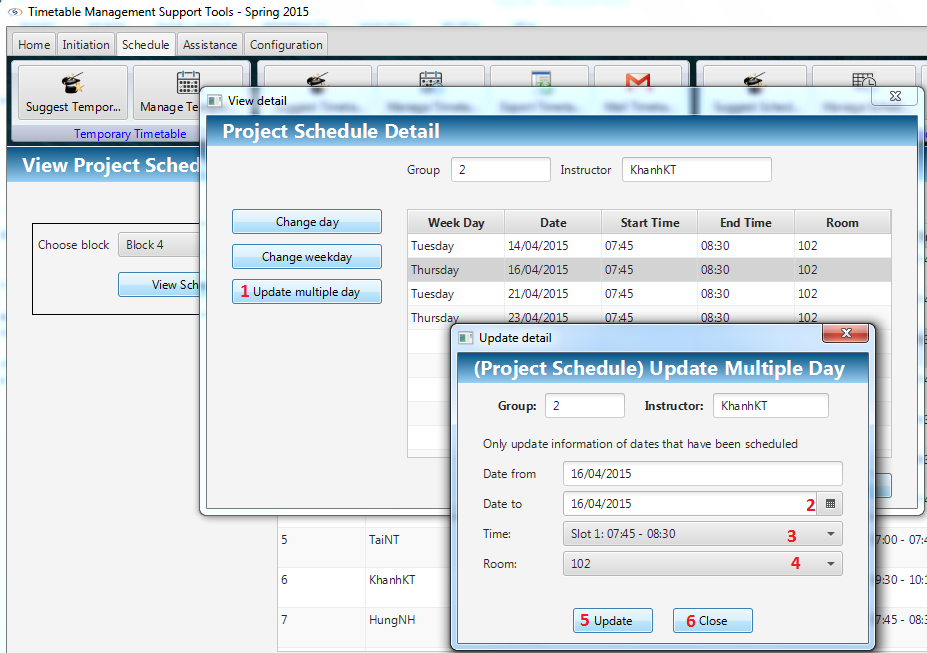


Figure : Update Multiple Day

|  |  |
| --- | --- |
| **Step** | **Description** |
| 1 | Click on “Change weekday” |
| 2 | Select new weekday by combo box |
| 3 | Stick checkbox to update week day for whole block |
| 4 | Select room by combo box |
| 5 | Click “Update” button to update information |
| 6 | Click “Close” button to close window |

### Export Guide Project Schedule

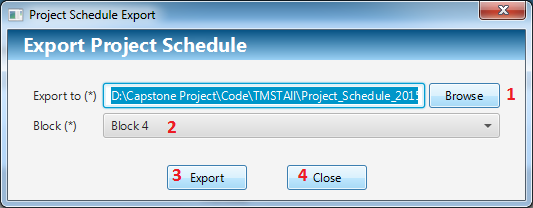


Figure : Export Guide Project Schedule

|  |  |
| --- | --- |
| **Step** | **Description** |
| 1 | Click “Browse” button to select path to export |
| 2 | Select Block by Combo box |
| 3 | Click “Export” button to export to selected location |
| 4 | Click “Close” button to close window |

### Mail Guide Project Schedule

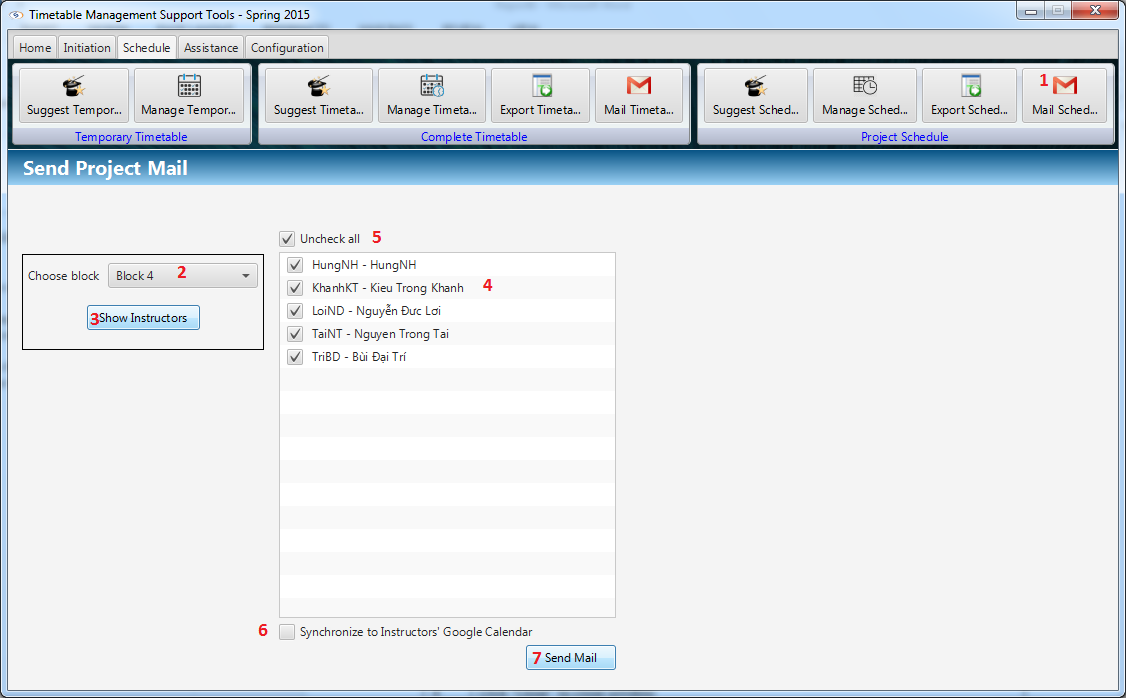


Figure : Mail Guide Project Schedule

|  |  |
| --- | --- |
| **Step** | **Description** |
| 1 | Click “Mail timetable” button on Schedule |
| 2 | Select Block by Combo box |
| 3 | Click “Show Instructor” Button |
| 4 | Check instructor by checkbox |
| 5 | Check “Check all” button to check all instructors |
| 6 | Check “Synchronize to Instructor’s to Calendar” to synchronize with Google calendar |
| 7 | Click “Send Mail” button to send for selected instructors |

### Manage Room Usage

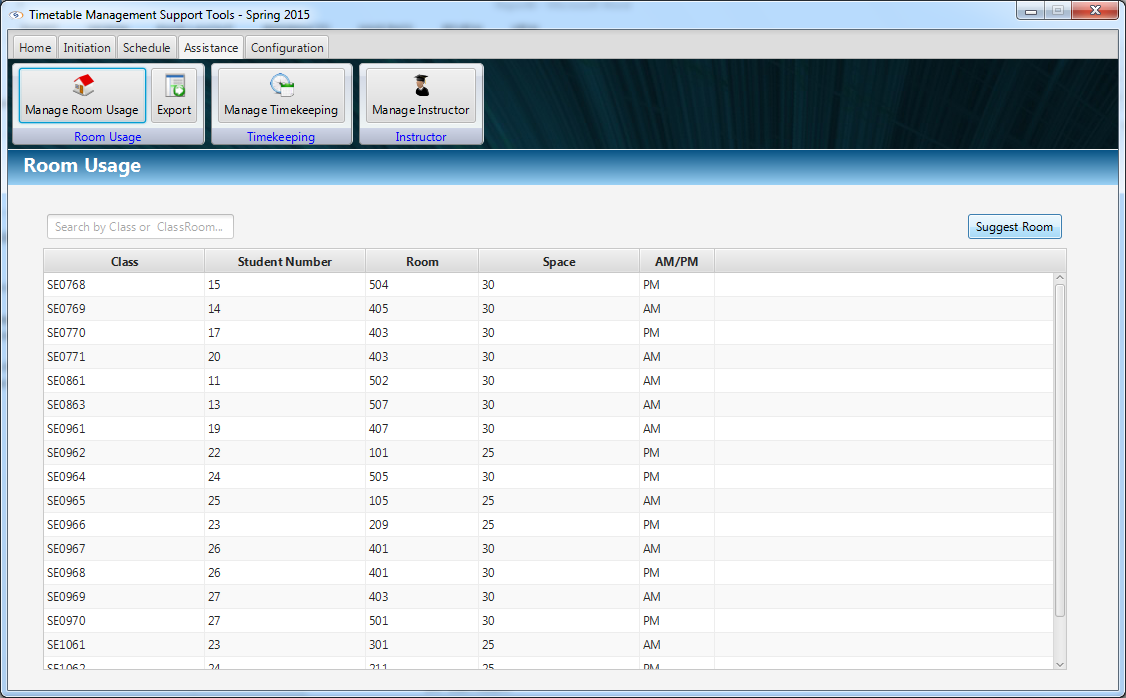


Figure : Manage Room Usage

|  |  |
| --- | --- |
| **Step** | **Description** |
| 1 | Click “Manage Room Usage” |
| 2 | Click “Suggest Room” to suggest rooms for classes |
| 3 | Search data by Class or Classroom by filter field |

### Edit Room Usage

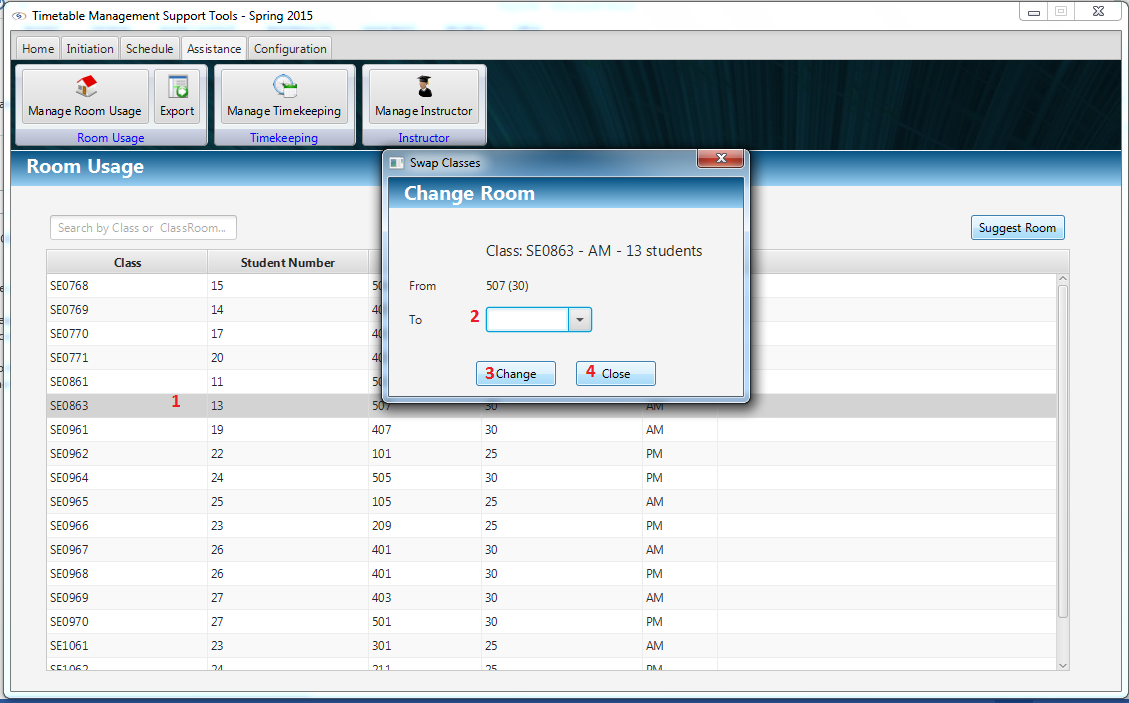


Figure : Edit Room Usage

|  |  |
| --- | --- |
| **Step** | **Description** |
| 1 | Double clicks on row on data to choose class for changing room |
| 2 | Select room by Combo box |
| 3 | Click “Change” to change room |
| 4 | Click “Close” to close window |

### Export Room Usage

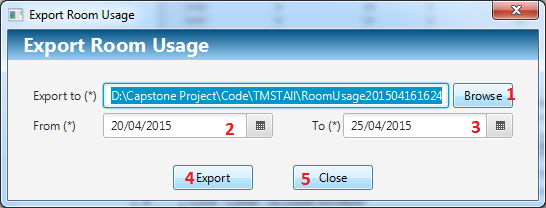


Figure : Export Room Usage

|  |  |
| --- | --- |
| **Step** | **Description** |
| 1 | Click “Browse” button to select path to export |
| 2 | Select From day by date picker |
| 3 | Select End day by date picker |
| 4 | Click “Export” button to export to selected location |
| 5 | Click “Close” button to close window |

### Calculate Timekeeping

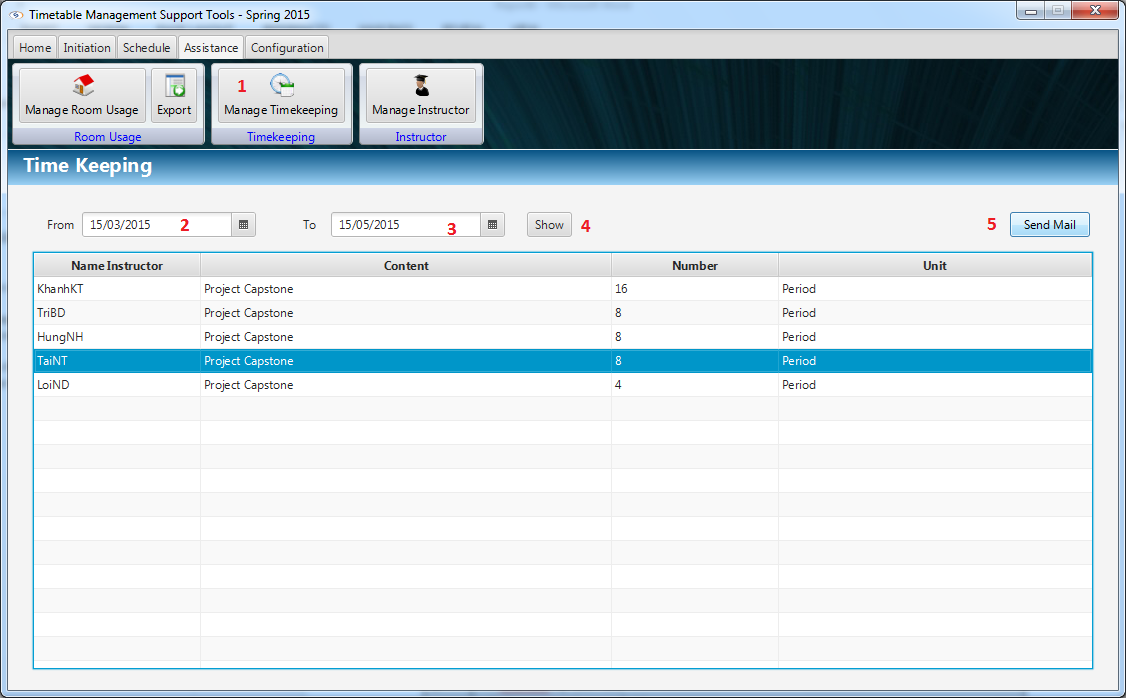


Figure : Calculate Timekeeping

|  |  |
| --- | --- |
| **Step** | **Description** |
| 1 | Click “Manage Timekeeping” button |
| 2 | Select From day by date picker |
| 3 | Select End day by date picker |
| 4 | Click “Show” button to show data filter by From day and End day |
| 5 | Click “Send Mail” button to send timekeeping |

### Email Configuration

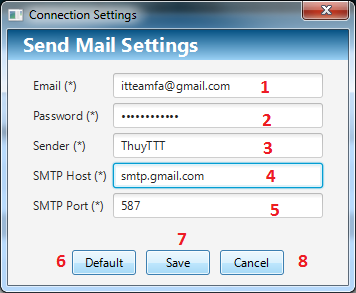


Figure : Email Configuration

|  |  |
| --- | --- |
| **Step** | **Description** |
| 1 | Fill Email by text field |
| 2 | Fill Password by text field |
| 3 | Fill Sender Name by text field |
| 4 | Fill SMTP Host by text field |
| 5 | Fill SMTP Port by text field |
| 6 | Click “Default” button to reset default values |
| 7 | Click “Save” button to save values |
| 8 | Click “Close” button to close window |

### Synchronize Configuration

#### Get JSON file

Reference: [https://developers.google.com/.../#creatingdeletingprojects](https://developers.google.com/console/help/#creatingdeletingprojects)

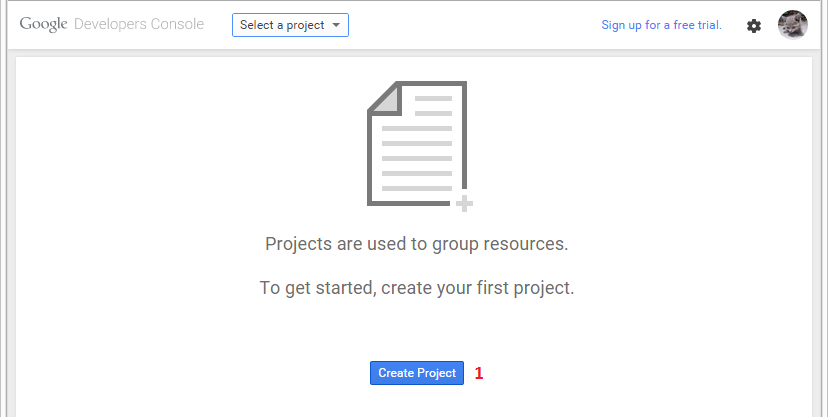


Figure : Get JSON setting - Step 1 – Create Project

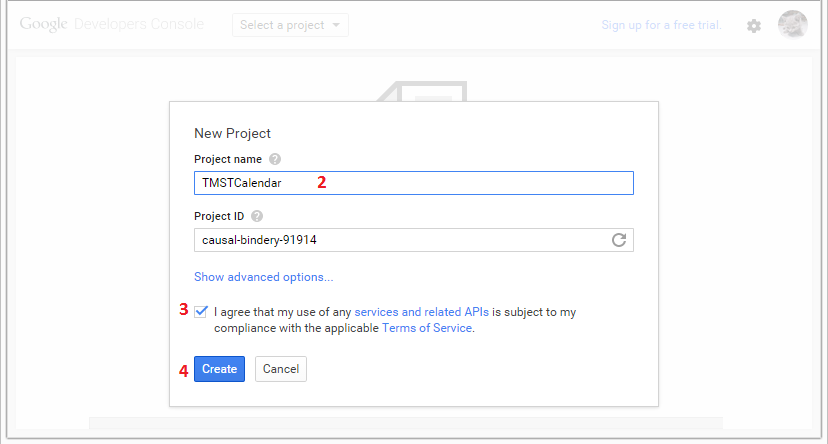


Figure : Get JSON setting - Step 2, 3, 4 – Setting name of project

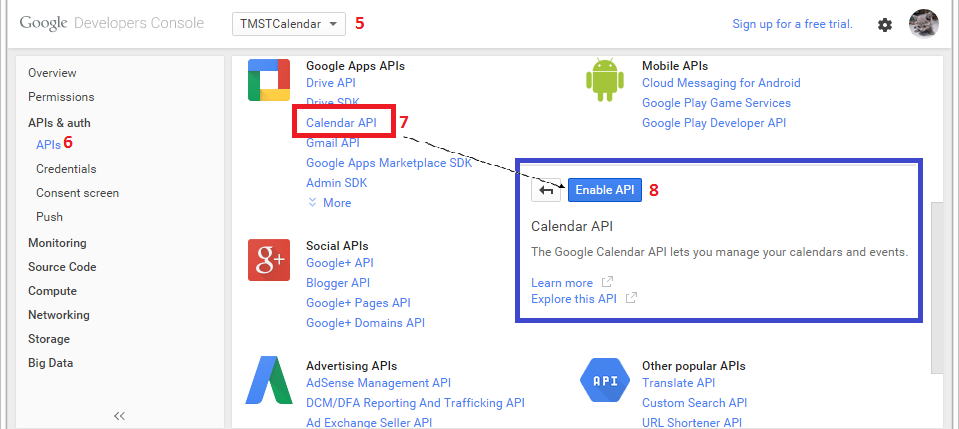


Figure : Get JSON setting – Step 5, 6, 7, 8 – Enable Calendar API

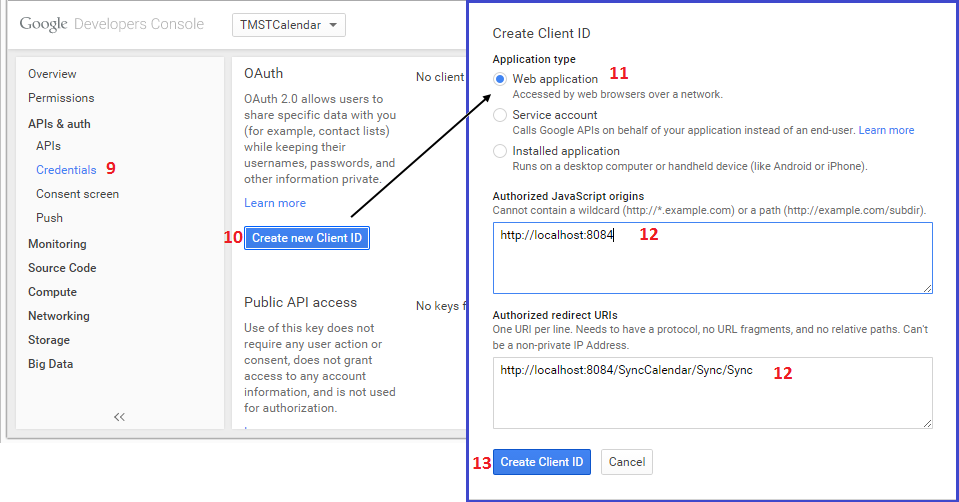


Figure : Get JSON setting – Step 9, 10, 11, 12, 13 – Create Client ID

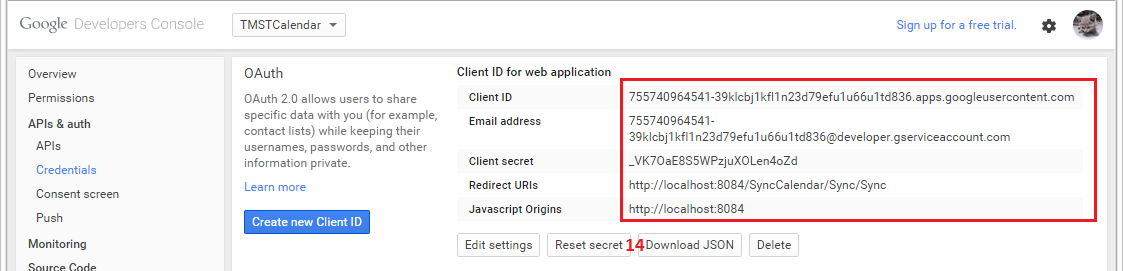


Figure : Get JSON setting – Step 14 – Download JSON file

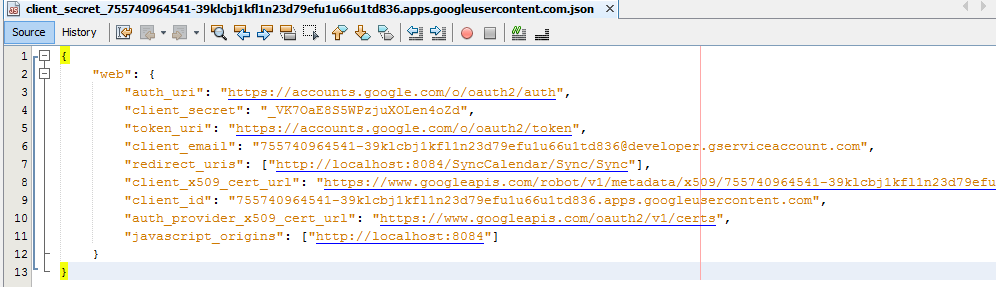


Figure : Get JSON setting – Content of JSON file

|  |  |
| --- | --- |
| **Step** | **Description** |
| 1 | Staff go <https://console.developers.google.com/project> to creating a project. |
| 2 | Fill name of project |
| 3 | Check to agree Terms of Service |
| 4 | Click “Create” button to finish create. |
| 5 | Choose project on combo box. |
| 6 | Click “APIs” in “APIs & auth” link |
| 7 | Click “Calendar API” link |
| 8 | Click “Enable API” to enable calendar API. |
| 9 | Click “Credentials” on left panel link |
| 10 | Click “Create new Client ID” to open window create |
| 11 | Select “Web application” |
| 12 | Enter link JavaScript origins (Optional) and Enter “Authorized redirect URIs” link |
| 13 | Click “Create Client ID” button. |
| 14 | Click “Download JSON” button. |

#### Synchronize Configuration

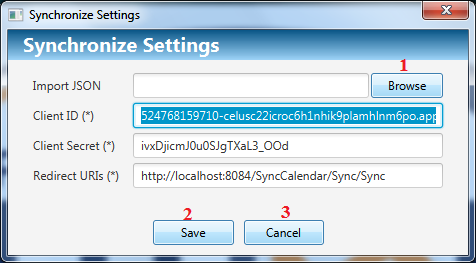


Figure : Synchronize Configuration

|  |  |
| --- | --- |
| **Step** | **Description** |
| 1 | Click “Browse” button to select JSON file created in 2.24.1. |
| 2 | Click “Save” button to save settings |
| 3 | Click “Cancel” button to close window |

# Appendix

1. Google API:

* <http://kieutrongkhanh.net/index.php/google-api/102-google-calendar-part-1>
* <http://kieutrongkhanh.net/index.php/google-api/106-google-calendar-part-2>
* <http://kieutrongkhanh.net/index.php/google-api/108-google-calendar-part-3>
* <https://developers.google.com/maps/documentation/javascript/tutorial>

1. Ribbon menu

* <https://introjava.wordpress.com/2012/04/08/java-fx-2-ribbon-menu/>

1. JavaFX 8 Tutorial

* <http://code.makery.ch/library/javafx-8-tutorial/>