Einclusion instructions

1. How to run the program

1. Make sure you have java version 1.8.0 or newer installed on your pc (to check java version in the command console execute this command: **java –version**).

2. Open the Einclusion.zip file and extract the contents.

3.1. On Linux OS double-click the RunMeLinux.sh and click execute or execute with terminal.

3.2. On Windows OS double-click the RunMeWindows.bat and click Run.

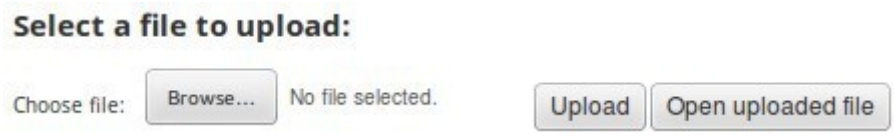
3.3. If you are having problems with the runme files, but you have the right java version open the command console navigate to the folder you extracted the project into and execute this command: **java –jar Einclusion.jar**

2. Graphical user interface

2.1. Edit Database

Page **Edit Database** contains tools for managing underlying database. It provides options to add and update student data as well as remove it from database when not needed anymore. It also includes table of coefficients that are used for calculations.

2.1.1. Select a file to upload



Select a file to upload menu is used to add new students to the database by selecting a valid .xlsx file.

This is a one student example of a valid .xlsx file:

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
1				Tēmas no	Šo tēmu ē	Šo tēmu ē	Savas vis	Savas vis	Video un	Praktiskie	E-vides nā	Saziņa ar	Tēmas pa	Pēc tēmā	Pirms tēm	Tēmā apg	Jūsu kom	Atbildes laiks		
2	ID numurs	Lietotājvā	Pilnais nc	Atbildiet	Atbildiet	Atbildiet	Atbildiet	Atbildiet	Atbildiet	Atbildiet	Atbildiet	Atbildiet	Atbildiet	Atbildiet	Atbildiet	Atbildiet	Atbildiet		kursa ID	Kurss
3	2222222	ieva_vitol	Ieva Vītol	Robotika	2	2	1	1	3	3	3	3	3	2	2	2		Monday, 2	2	MII

Open uploaded file button is used to open the generated .csv file with its default opening program. This file is used to write students to the database (only visible after pressing choose a file).

2.1.2. Create template

Create template button is used to create Update_Database.xls file. This file consists of three columns: Phone, Topic and OU (this button was implemented so it could generate a valid .xls file on any OS).

Open template button is used to open Update_Database.xls file.

2.1.3. Update database

Update database button is used to change existing student data in database by selecting a valid .xls file.

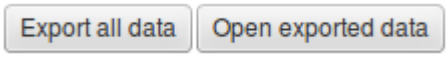
Example of a valid .xls file for updating one students OU:

	A	B	C
1	PHONE	TOPIC	OU
2	2222222	Robotika	2

Example button is used to open the Example.xls file that contains information about creating a valid Update_Database.xls file. It has names of all columns saved in the database.

Phone - students phone number
Topic - students course which he is taking
Name - students name
DS - digital skills (1-5)
ELE - e-learning environment (1-5)
ELM - e-learning materials (1-5)
IWS - instructor willing to share knowledge (1-5)
SAL - student ability to learn (1-5)
SWL - student willingness to learn (1-5)
KLAL - knowledge after learning (1-5)
KLBL - knowledge before learning (1-5)
OU - observed usage (0-2)
PU - predicted usage (1-5)
PUOU - predicted usage observed usage (sum of ou+pu) CANNOT BE CHANGED BECAUSE IT IS GENERATED
M1 - CANNOT BE CHANGED BECAUSE IT IS GENERATED
M2 - CANNOT BE CHANGED BECAUSE IT IS GENERATED
KFA - knowledge flow acceleration CANNOT BE CHANGED BECAUSE IT IS GENERATED
M3 - CANNOT BE CHANGED BECAUSE IT IS GENERATED
SUBMITDATE - CANNOT BE CHANGED BECAUSE IT IS SURVEY DATA

2.1.4. Export



Export button is used to write all contents of database to Exported.xls file.

Example of Exported.xls file for one student.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1	PHONE	TOPIC	NAME	DS	ELE	ELM	IWS	SAL	SWL	KLAL	KLBL	OU	PU	PUOU	M1	M2	KFA	M3	SUBMITDATE
2	2222222	Robotika	Ieva Vītoliņa	1.0	3.0	3.0	3.0	1.0	2.0	2.0	2.0		2.0	0.0	-1.0	-1.0	6.0	-1.0	2015-05-04 00:00:00.0

Open exported data button opens Exported.xls with its default opening program (visible after pressing Export).

2.1.5. Delete from database

Delete from database menu is used to delete all or specific students from the database.

First selector is used to filter by what topic students will be deleted. It has 2 options: delete students in all topics or one specific topic.

Second selector is used to filter specific students to be deleted. It has 2 options: delete all students in a given topic or delete one specific student.

2.1.6. Coefficient Table

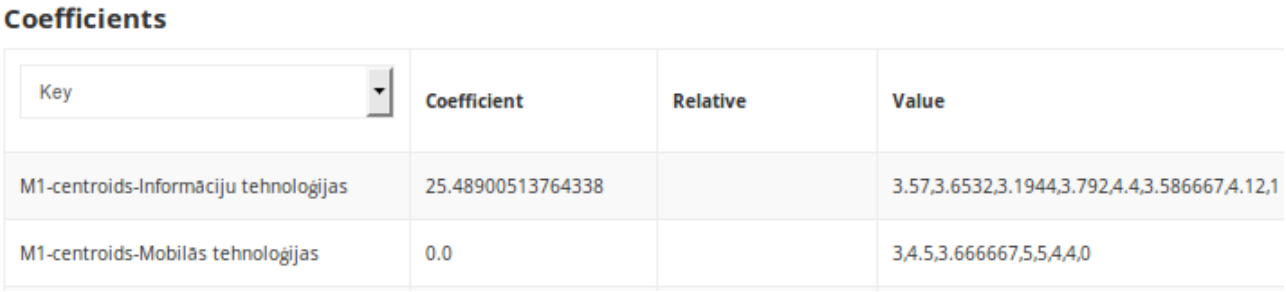


Table **Coefficients** is available in the lower part of the Edit Database page. It contains the list of all the coefficients used to compute predicted values. It can be **filtered** by field Key.

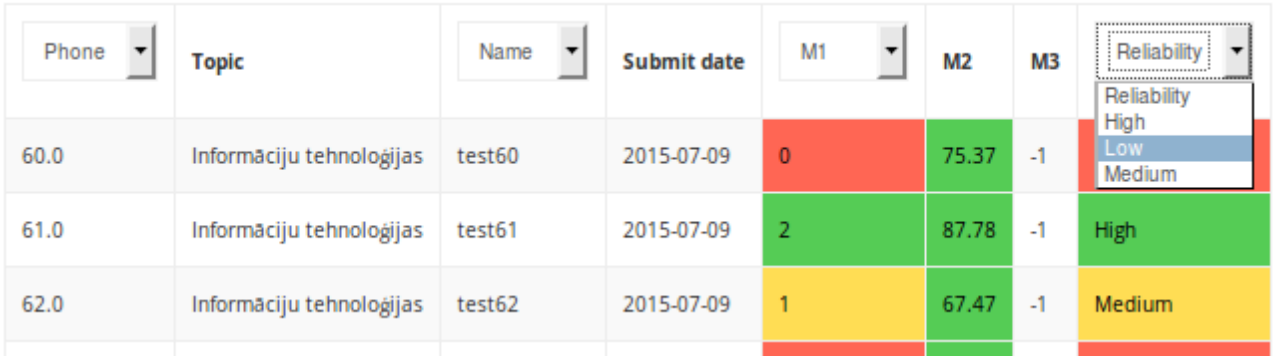
2.2. Table controls

There are 4 different tables accessible in matching pages of the Einclusion web interface: M1, M2, M3 and Prediction. Table M1 shows General evaluation of students, M2 – Evaluation of ability to learn and knowledge sharing, M3 – Evaluation of knowledge flow, while Prediction page shows Prediction of student E-inclusion from these values. In case data for M1, M2 or M3 is not available, negative value is shown instead.

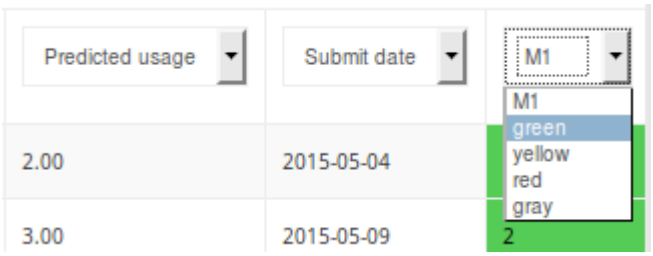
2.2.1. Export to xls

File name field is used to give user the opportunity to name the filtered export file. This field does not allow the user to input invalid characters. It only allows the input of alphanumeric characters and "_". **Export to xls** button writes all data visible in the table into a file (the text entered in File name field + ".xls") and offers to download it to local computer. If no file name is given in File name field, the default filename "Students.xls" would be used.

2.2.2. Filters



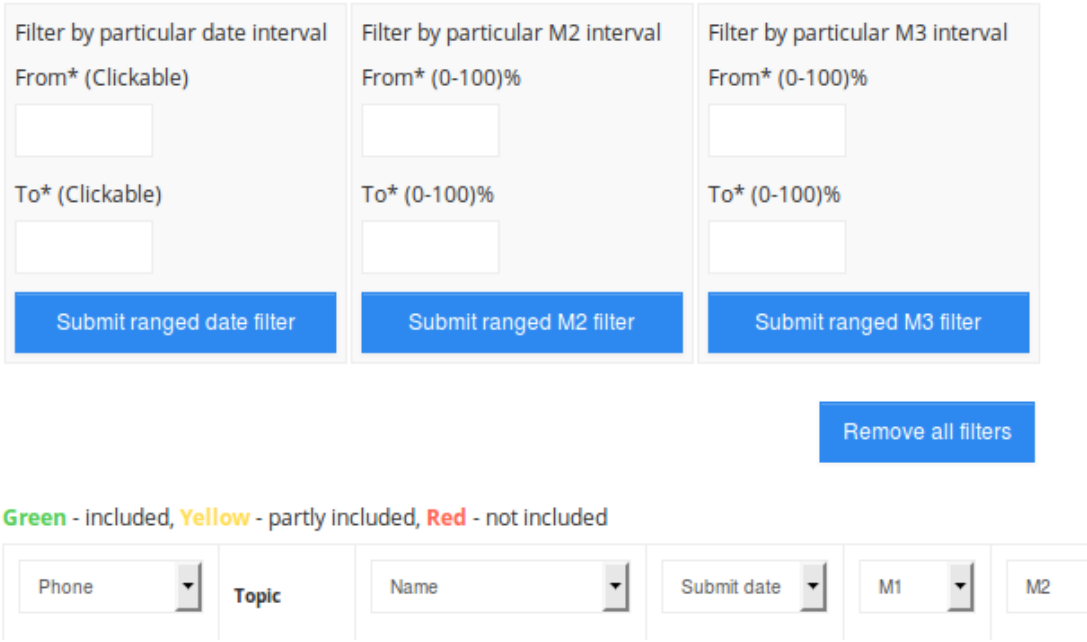
Every table column that contains multiple different values offers a **selector** that enables a **filter** on the column name row. If every row contains the same value it shows column name instead of it. Most columns are filtered by values visible in fields. When a value is selected, only rows containing it are shown.



Columns M1, M2 and M3 is filtered by levels of inclusion instead, coded by color (**Green** - included, **Yellow** - partly included, **Red** - not included, **Gray** – not available). Table can be sorted by multiple columns at the same time.

2.2.3. Ranged filters

At the top of the “prediction” page above the table there are another 3 modules for filtering, which allows you to filter students by particular column with starting and ending value.



First filter is responsible for filtering students by their assignment date. This filter is clickable, by the click on one of the text areas (either From or To), a small calendar appears, which allows you to choose desired date that going to be either starting border (From) or ending border (To) for your filtering. Also desired dates could be typed manually in the text fields with required mask: yyyy-mm-dd.

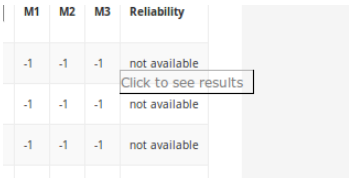
Another two filters is responsible for filtering students by M2 and M3 columns with the same principles as first filter do, except that it don't have graphical feature like small calendar, that appears by the clicking on text fields. All values should be typed manually and must be in range of 0, 1, ..., 100(%).

If you want to submit one or few ranged filters, both values (From and To) must be fullfilled, or filter won't work and nothing will be changed after applying it.
Each of ranged filters is compatible with another ones and with every filter from 2.2.2. paragraph.
“Remove all filters” button is responsible for clearing and refreshing page, so all students from database will be shown in table without any filtering.

2.2.4

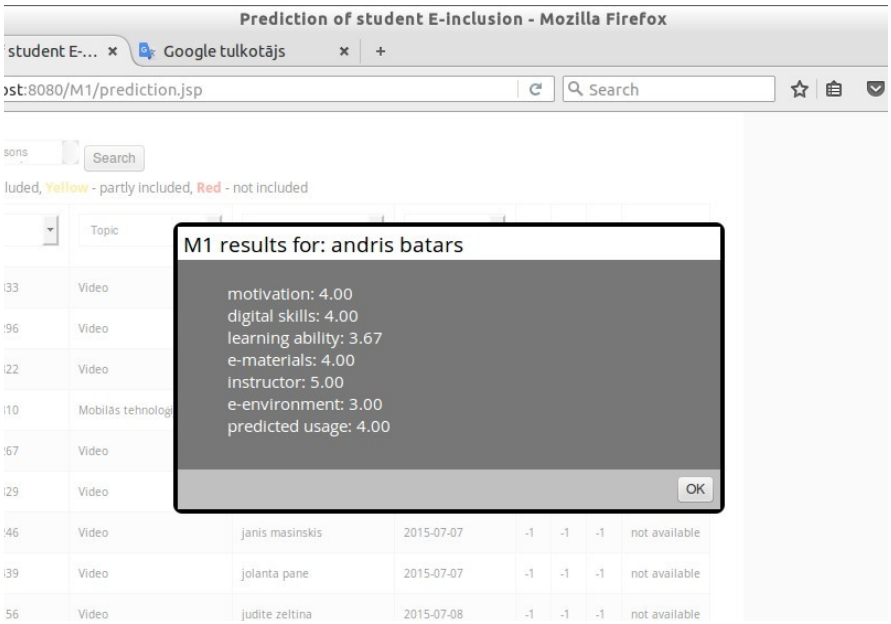
Linked views

When user hovers over some cells within the range M1 : M3 , box pops up with informative message
"click to see results". That means that this cells are clickable and are linked to the tables M1, M2 and M3.



When users clicks on this cell, customized alert shows up with the linked results from previous pages.

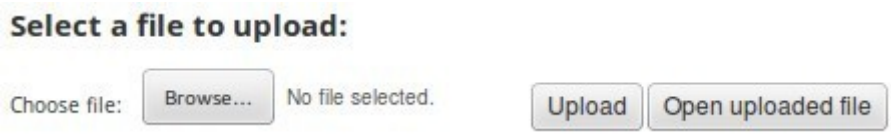
This coefficients , like motivation, digital skills learning ability and so on correspond to chosen student and are found on previous pages.



M1 corresponds to motivation, digital skills, learning ability, e-materials, instructor, e-environment and predicted usage.
M2 corresponds to motivation, learning ability, e-materials, e-environment and instructor.
M3 corresponds to instructor, e-environment, e-materials and before learning.

3. Detailed instructions

3.1. Adding new Students to the database



To add new students click **Browse...** button in **Select a file to upload** menu - this will open window which will ask you to navigate to a valid .xlsx file. If the file chosen does not correspond to schema needed, it prints error messages in console feed. It **doesn't** create warning messages in web interface for now – there is opportunity for future development here.

It doesn't generate m1, m2, m3 or prediction models, because the OU (observed usage) variables have not been added to the database yet.

3.2. Updating existing student data

1. Create a template by pressing **Create Template** button. .

2. Open this file either by pressing **Open Template** button or by navigating to the folder you extracted this project into and opening the Update_Database.xls file.

The Update_Database.xls file should look exactly like this.

	A	B	C
1	PHONE	TOPIC	OU
2	enter phone number	enter topic	enter value

3. Press the **Export** button

4. Open the exported file either by pressing **Open** button or by navigating to the folder you extracted this project into and opening the Exported.xls file.

The Exported.xls file should look something like this.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1	PHONE	TOPIC	NAME	DS	ELE	ELM	IWS	SAL	SWL	KLAL	KLBL	OU	PU	PUOU	M1	M2	KFA	M3	SUBMITDATE
2	2222222	Robotika	Ieva Vītoliņa	1.0	3.0	3.0	3.0	1.0	2.0	2.0	2.0		2.0	0.0	-1.0	-1.0	6.0	-1.0	2015-05-04 00:00:00.0

Notice that the OU value is left empty.

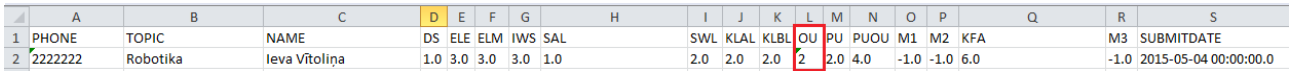
5. Copy the Phone and Topic columns to Update_Database.xls file, enter the OU value, save it and close it.

Example.

	A	B	C
1	PHONE	TOPIC	OU
2	2222222	Robotika	2

6. Press the **Update Database** button - a File Upload window should open. Navigate to Update_Database.xls file and select it. If everything is done properly when you generate Exported.xls again it should look like this. If the file chosen does not correspond to schema needed,

it prints error messages in console feed. It **doesn't** create warning messages in web interface for now – there is opportunity for future development here.



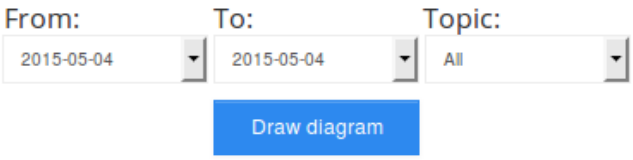
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1	PHONE	TOPIC	NAME	DS	ELE	ELM	IWS	SAL	SWL	KLAL	KLBL	OU	PU	PUOU	M1	M2	KFA	M3	SUBMITDATE
2	2222222	Robotika	Ieva Vītoliņa	1.0	3.0	3.0	3.0	1.0	2.0	2.0	2.0	2	2.0	4.0	-1.0	-1.0	6.0	-1.0	2015-05-04 00:00:00.0

Notice that the OU value has been initialized.

4. Graphical representation of results

4.1. Defining the date range and topic.

Choose one of the available dates in the range for fields From and To. It is also possible to choose a specific topic or just choose “All” to include results from all topics.



4.2 Generating diagrams.

After specifying all the parameters, click “Draw diagram” to generate diagrams, which are added below. Each time new parameters are submitted, the diagrams are refreshed.
The diagrams are based on results from Predictions page.
First diagram shows the number of students for each e-inclusion range for specified date and topic. Second was meant to show risk factor, but it was not done. Therefore it just shows the number of students in each topic for specified date period.