## User Guide

#### 1) Data pre-processing

• Download the pre-processing executable by clicking either on the .exe or the .jar option:



• If you have downloaded the .exe option, you only need to open it and a command prompt will appear. Please, enter the original file path (without extended characters) and press 'Enter':



• If you have downloaded the .jar option, you will need to manually open the command window and enter the following command:

java -jar pre-processing.jar "original file path"



- The command window directory must be that where the .jar file is stored.
- If the path contains spacings make sure that you type it into quotation marks ("").
- If the process has been completed successfully the pre-processed file (preprocessed\_data.log) will appear in the same directory as the original file (anon.log).



# Troubleshooting

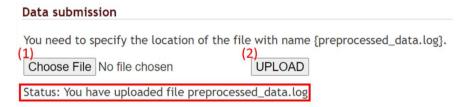
- Windows Defender and other kinds of antimalware programs can cause problems when executing the file. Please, make sure that you have given the required permissions to download and execute it. If these problems still appear, please, disable the antimalware and proceed again to its execution. Another alternative is using the *.jar* option.
- If the command window suddenly disappears without generating the output file, please, repeat the process and make sure that you have written the original file path correctly. Please, mind that it cannot contain ASCII extended characters (https://theasciicode.com.ar/).

## Note

- The process can take several minutes depending on the processing capacity of the machine and the original file size.

#### 2) Data submission

- By clicking in the "Choose File" button (1) a File Explorer window will appear. Please, navigate through the directories and select the *pre\_processed.log* file.
- Once the file has been selected, please, click the "UPLOAD" button (2).
- If the process has been executed successfully the Status will change to: "You have uploaded file preprocessed\_data.log".





- The process can take several seconds depending on the file size and uploading speed.
- Session time is 20 minutes, so, after this time has passed, the user needs to upload the file again.

#### 3) Skills

a. Define the skills of the course

#### The user has two options:

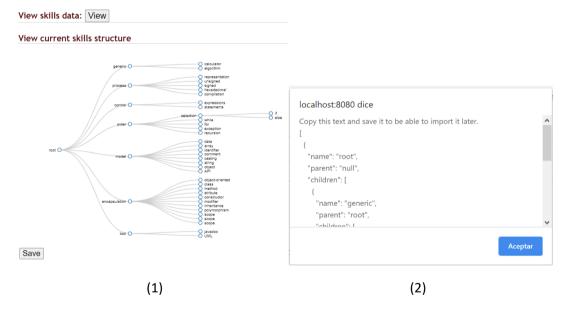
 Import skills data: In this case the user needs to paste the JSON structure with the skills definition.

Import skills data			
Import			//

• Add new skill: The second option is adding the skills one by one. In this case, there is a default root skill defined and the user can add the desired skills by typing their name and selecting their parent.

Add new skill	
Skill	
Parent	
Add element	

• View skills: The skills structure is automatically updated and showed when the user add a new skill (1). He/she can also view the skill data in JSON format in a prompt showed when the user presses the View button (2).



• Is important to **press the 'Save' button** before leaving the page.

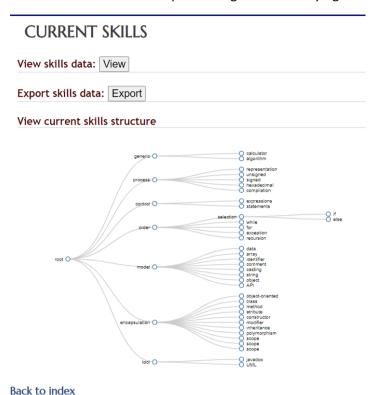


- For modifying or deleting a skill it is necessary to change the JSON structure. This is done by exporting the structure (see next subsection), importing it again and changing the desired skill(s).

## b. Visualize the current skills of the course

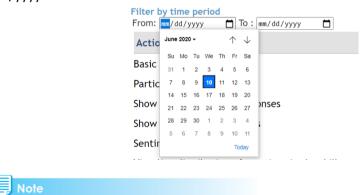
• The user can visualize the skills in the same both ways explained above.

• Additionally, the export button downloads a file named "skills\_data.json" with the current structure. This file can be modified and uploaded again for modifying the skills.

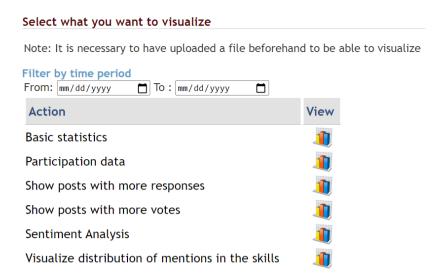


## 4) Select what you want to visualize

• **Filter by time period**: By clicking on this input a calendar prompt will appear. There, the user can select the desired date. Another alternative is typewriting it in the format "mm/dd/yyyy".



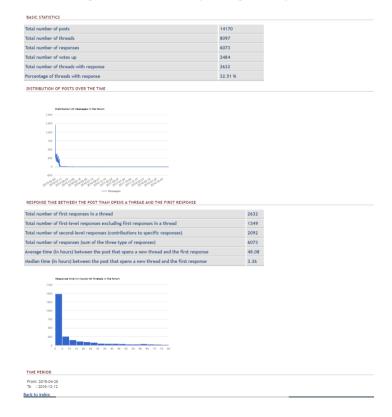
- The user can select the initial date, the final date, both, or none. If the user does not specify any of the dates, the default date(s) will be the corresponding initial and/or final date(s) in the data file.
- By clicking in the graph icon, the desired statistics and outcomes will appear in a new webpage.



You can return to the home page clicking in 'Back to index' at the bottom of the page.

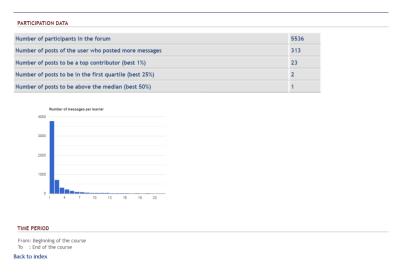
#### a. Basic statistics

• This section shows basic general info about posting activity in the forum:



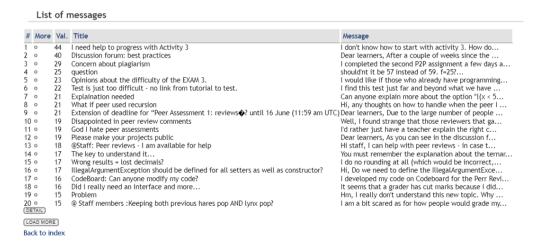
## b. Participation Data

• This section represents the students' interaction with the forum:



## c. Posts with more responses

• This section shows a list with the top 20 posts with more responses:



- Clicking in the 'Load More' button you can see up to the 100 posts with more responses.
- The 'Detail' button allows to see all the responses and comments included in the thread with detail:



#### d. Post with more votes

• This section is like the previous one but in this case posts and responses with more votes are shown.

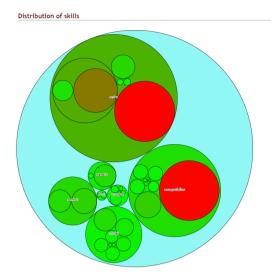
#### e. Sentiment Analysis

 This section shows if the general feeling of the students is positive, negative, or neutral during the course. It directly depends on the number of negative or positive words of the posts.



## f. Visualize distribution of mentions in the skills

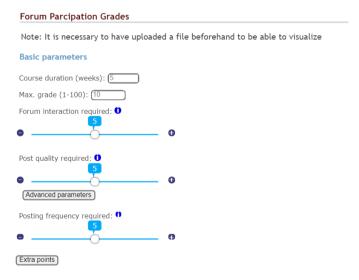
• This section shows a graph including the skills defined in the corresponding section. The user must define the skills before visualizing the graph (See section 3.a. Define the skills of the course).



- The size of the circle depends on the number of mentions that the skill has got in the forum, the more times it has been mentioned the larger will be the circle. The circles inside others represent the hierarchical structure.
- The circles colour also depends on the number of mentions, but in this case it is the mean of the colour of the circles inside it (its child nodes). In this case, the more mentions it has the redder will be the circle.

## 5) Forum Participation Grades

• The user can define any of the inputs. If the user does not specify an input, it will take the value shown as default.

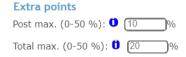


- For number inputs, the user can type the number or select it using the arrows.
- For range inputs, the user must drag the pointer from 0 (minimum value) to 10 (maximum).
- When clicking on the info icon a popup appears showing information that helps the user to understand the input implications.

• Advanced parameters: By clicking on the corresponding button six new parameters will appear. These inputs represent the ranges of responses and votes. Part of the score assigned to the posts in the grading method will depend on these ranges.

Advanced parameters		
Responses Range 🐧		
Low (<=): 5	Medium (<=): 10	High (<=) / Very High (>): 20
Votes Range 🐧		
Low (<=): 4	Medium (<=): 7	High (<=) / Very High (>): 10

• **Extra points:** By clicking on the corresponding button two new parameters will appear. These inputs represent the extra points (in percentage) that the posts or user can get.

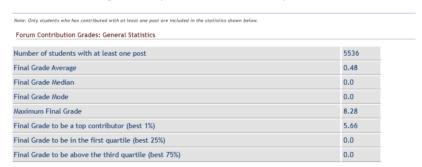


• By clicking in the corresponding icon, the desired statistics will appear in a new webpage or the grades will be downloaded in the chosen format.



#### a. General Statistics

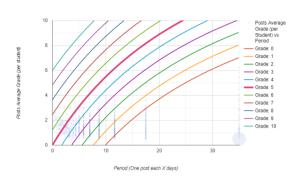
• This section includes the more representative statistics regarding individual grades: average, median, node, maximum grade, top contributors, and quartiles.



- The 'Posts Average Grade vs Period' graph shows the final grade (without extra points) depending on users' interaction with the forum.
- Each point represents a set of students with the same behaviour (post average grade and posting period). The larger is the point, the more students have the same behaviour.

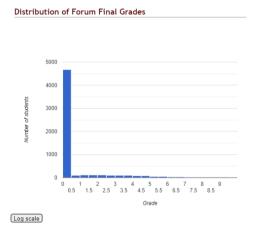
• The more opacity indicates that there are overlapping points.

Posts Average Grade (per Student) vs Period





- The points do not include extra score so the grade represented could be different from the user final grade.
- The last graph represents grades distribution. In this case, extra points are considered.
- By default, a y-axis linear scale is represented. By clicking in the button below the graph the y-axis scale changes to a log one.



## b. Forum Participation Grades

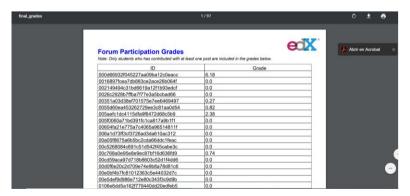
- This section shows the individual grades for each of the students that has participated (written a post) at least once in the forum.
- The user can select the desired sort order: Grade (High to Low: by default), Grade (Low to High), ID.



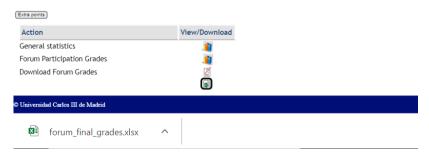
The student ID is biased to the first 20 characters.

#### c. Download Forum Grades

- The Forum Participation Final Grades can be downloaded in two formats: PDF and Excel.
- In case of PDF, the document will appear in the same browser tab. From there, the user can download it, print it, or open it in the Adobe Desktop application.



• In case of Excel download, the document will be directly downloaded to the default folder.





- The student ID is biased to the first 30 characters in the PDF document. The Excel document shows the full user ID.

## **General Considerations**

- Please, bear in mind, that when using navigator arrows for going back to the index, the input parameters may appear with the last value given. However, the real value that they are taking is the default one. It is recommendable to use the option 'Back to index' at the bottom of the page rather than the navigator arrows.
- The web application has been developed to be used with Google Chrome navigator. Please, be aware that using other web browsers can cause problems in the application.