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# 

# **DEFINITION OF THE REQUIREMENTS CATALOGUE**

## **TEAM MANAGEMENT SUBSYSTEM**

Create the team for practical assignments and attach to its members, make notifications, select preferences and view information from the teams

### **FUNCTIONAL REQUIREMENTS**

FR1: An authenticated user that has logged in previously in Moodle with its credentials (hereinafter, user) without a practical assignment team for a subject who is enrolled can create a team.

1. A file will contain all the information about the team, this is:
   1. Subject name.
   2. Subject with practical assignments.
   3. Group names by subject.
   4. Number of practical assignments with start and end date.
   5. List of participants.
   6. Number of students per group.
   7. Number of students per team.
   8. Student´s name and email.
   9. Subjects in which students are enrolled.
   10. Group to which a student belongs.
   11. Class schedule for each student.
2. Students that remain without a team will be in a file containing:
   1. Student 's name.
   2. Student 's group.
   3. Subjects in which the student is available.
3. Teams that have been created will be in a file with:
   1. Team 's number.
   2. Team’s number of members.
   3. Subject to which the group belongs.

FR2: A team will be created as default for each group: “Help Team”, that will be like a forum.

1. All the students of the same group would be added. This will be provided by Moodle.
   1. List of ids of the students
2. The content of the group consists of:
   1. Question: For students to create new questions or see the ongoing ones
   2. Answers: For students/professors to answer questions
   3. Resolved: After a question has been resolved the label will be changed
   4. Advice: In case a student finds an error on the practice or the theory slides, can warn the other students through this label.
3. A student will be able to post a new question, advice and respond to a question or advice given by other classmates.
   1. Title
   2. Body

FR3: The system will send notifications to the students.

1. Notifications will be sent via email to the students.
   1. Students emails
2. There can be several type of notifications (join request, invitation to a team, team created and team full):
   1. Type of notification
   2. Body of notification

FR4: Every team will be able to modify their preferences and their information.

1. Any petition to change preferences must include (can include “none” in one or two fields):
   1. Days where the team availability is greater.
   2. Estimated duration of the meetings.
   3. Kind of people that are part of the team/are wanted for the team.
2. Any petition to change information must include:
   1. Subject where the team is made.
   2. Description of the team

FR5: Once a team is created in Docufy, it will be registered in the Moodle database.

1. Teams information.
   1. Team’s id
   2. Members id
   3. Subject of the team
   4. Description of the team

### **NON-FUNCTIONAL REQUIREMENTS**

**Interface and usability.**

NFR1: The menu that shows all the participants of the list that you can add to a team, will show at least 6 people by default.

NFR2: There will be an option to change how many people will appear in this menu.

NFR3: When a person who is creating a team, chooses another person to join their team, this one will appear blurred to know that he/she is in the list.

NFR4: There should exist a mobile version of the interface.

NFR5: The colour of the interface can be changed to green, the same one as Moodle.

**Documentation requirements**

NFR6: The app will be available in English and Spanish

**Security requirements**

NFR7: User identification consists of the UAM email and a password.

NFR8: The system must encrypt sensitive data transmitted.

NFR9: Only EPS students can access the app

**Maintainability and portability requirements**

NFR10: The application will be compatible with Google Chrome, Mozilla Firefox, Safari and Internet Explorer in their latest versions.

**Resources requirements**

NFR11: The app must run smoothly on older machines with say 4 GB of ram and a 5 year old CPU.

NFR12: The app must not occupy more than 15 GB of space.

**Performance requirements**

NFR13: The system must be able to handle at least 200 people connected at the same time.

**Behaviour requirements.**

NFR14: The user will be kicked after being inactive for 30 min.

**Availability requirements**

**Support requirements**

NFR15: There will be a back up with the teams to which the user has belonged.

**Verification and reliability**

NFR16: The user’s email will be checked with the UAM email database.

## 

## **MEETING SCHEDULING SUBSYSTEM**

See pending or completed teamwork meetings

### **FUNCTIONAL REQUIREMENTS**

FR1: The system will allow team members to consult pending or completed meetings.

1. For the past meetings, the students will be able to consult the information related:
   1. Name
   2. Day, time and duration
   3. Attendees
   4. Time each member has enter the meeting
   5. Achieved tasks in the meeting
   6. Pending tasks
   7. Objectives to be met for the next meeting
2. For pending meetings, students will see:
   1. Name of the meeting
   2. Day, time and duration
   3. Objectives
   4. Topics to be discussed

### **NON-FUNCTIONAL REQUIREMENTS**

**Interface and usability.**

NFR1: Each recorded meeting that will be replayed, will open a new window where the meeting will be reproduced.

**Documentation requirements**

NFR2: Meetings will save date and duration, therefore it can be ordered by date or duration.

**Security requirements**

NFR3: the meeting will only appear for the team.

NFR4: The information of the meetings will only be saved on Docufy, not in the external application.

NFR5: The information about the meeting will be saved for 1 year. After this time, it will be erased.

**Maintainability and portability requirements**

NFR6: Meetings can be reproduced in a mobile phone.

**Resources requirements**

NFR7: The meetings will be saved until the sum of the sizes is 20 GB, so it will be necessary to delete a recorded meeting in order to have space for another one.

**Performance requirements**

NFR8: It will be possible to fast forward and backward the meeting that has been saved.

**Behaviour requirements**

NFR9: Option to view the calendar in full screen.

NFR10: Change colour of a day depending on the subject of the meeting (the colour can be selected manually)

**Availability requirements**

NFR11: There should be a connection between Docufy calendar and a calendar app on the student’s mobile so he can see the meetings programmed.

**Support requirements**

NFR12: Help button to indicate what should be written in the fields to put the meeting in the schedule.

**Verification and reliability**

NFR13: It will be verified that whoever creates the meeting in the calendar belongs to the UAM.

## 

## **MEETING MANAGEMENT SUBSYSTEM**

Create the meeting, send reminders, manage the rooms that make up the meeting infrastructure, consult information on meeting development, cancel the meeting

### **FUNCTIONAL REQUIREMENTS**

FR1: A user who has logged into moodle and is already on a team can create a meeting.

1. List of users logged in moodle
   1. Id of user
   2. Boolean which tells if the user is logged in or not
2. Users belonging to at least one team
   1. Id of user
   2. List of teams to which the user belongs to
3. Data for creating the meeting
   1. Name of the meeting
   2. Duration of the meeting
   3. Proposed date
   4. Proposed starting hour
   5. User who proposed the meeting

FR2: It can only be carried out by EPS-UAM students.

1. Users of moodle who belong to EPS
   1. Id of user
   2. Faculty to which the user belongs to

FR3: Every team member is able to vote for a date for a specific meeting.

1. System creates poll to vote for the date and hour of the meeting
   1. Days and hours availables
   2. Members of the team
2. System checks every member's calendar to display available dates do vote for in the poll
   1. Id of the team member
   2. Days availables
   3. Time of the day availables
3. A user votes
   1. Id of user who votes
   2. Day voted
   3. Hour voted
4. A user changes its vote
   1. Id of user who votes
   2. Day voted
   3. Hour voted
5. The closes the poll 2 days after it started and sets most voted day, in case of tie the poll is started again
   1. Day and hour voted most
   2. Boolean which represents tie
6. System notifies team members in case that: a date has been agreed, a date has not been agreed
   1. Id of every team member
   2. Text for the notification
7. System updates team members’ calendars to include the new meeting if it has been agreed a specific date and hour
   1. Date and hour agreed
   2. Link to the meeting room
   3. Id of every team member

FR4: Meeting management through the streaming platform is carried out by the software system:

1. The app will notify 5 minutes before the start of the meeting.
   1. Id of every team member
   2. Text to notify
   3. Link to the meeting room
2. 5 minutes before starting each meeting, the system opens the room
   1. Petition to external application to open a room in the given link
   2. Link to the meeting room
3. The meeting will end 5 min after all the members have left the meeting.
   1. List of users in the meeting
   2. Petition to external application to close the room in the given link
   3. Link to the meeting room

FR5: Any member of the team can cancel a meeting.

1. Petition of a team member to cancel a meeting
   1. Id of the user
   2. Reason for the cancelation
2. System notifies about the meeting cancelation to the team members
   1. Id of team members
   2. Text of the notification

FR6: The system will send reminders about meetings to be made in two instances: a week before the meeting and the day before the meeting.

1. System notifies a week before a meeting
   1. Id of team members
   2. Text of the notification
2. System notifies one day before the meeting
   1. Id of team members
   2. Text of the notification

### **NON-FUNCTIONAL REQUIREMENTS**

**Interface and usability.**

NFR1: Be able to minimize the meeting without hanging up the call.

NFR2: The meeting will be in a different window than the application.

NFR3: There will be an option to share the screen.

**Documentation requirements.**

**Security requirements**

NFR4: a password can be included to enter the meeting.

**Maintainability and portability requirements**

NFR5: It should be possible to share screens and talk in the meeting.

**Resources requirements**

NFR6: The meeting will have a host so the connection depends on the host.

**Performance requirements**

NFR7: The meeting must handle the total number of team members.

**Behaviour requirements.**

NFR8: The meeting will take place only if the host connection is at least 5 MB download.

**Availability requirements**

NFR9: Join to a meeting should be possible in every OS and in your mobile phone (in the last case you cannot be the host).

**Support requirements**

NFR10: There will be a help button that will answer common questions about the meeting such as why the meeting still runs when everyone is out or why the meeting is not starting.

**Verification and reliability**

NFR11: Before joining the meeting, it will be verified that the ones who are joining the meeting belong to the team.

## 

## **MEETING-MAKING SUBSYSTEM (DELIVERY SUBSYSTEM)**

Available tools provided by both the room and the system itself to hold the meeting and work on the internship team, deliver practical assignments

### **FUNCTIONAL REQUIREMENTS**

FR1: The external application will let the users:

1. Create a new conversation by text
2. Turn on and off their own camera and microphone
3. Record the meeting
4. Share screen
5. Lend the control of their computer

FR2: Docufy will let the students of the same team:

1. Upload and edit a file. The formats supported by Docufy are:
   1. .txt
   2. .doc and .docx
   3. .xlsx
   4. .c, .java, .py, .pl, .asm
2. Upload useful videos explaining things of the assignment to other teammates.
   1. Docufy will show the number of people that have seen the video but not the name of the persons that have seen it.
   2. There will be an option to:
      1. Choose the speed of the video
      2. Pause and play
      3. Control the video volume
      4. Subtitles
      5. Put in full screen the video

FR3: When the delivery day of the assignment arrives, Docufy will upload the files to Moodle automatically. The students need to upload the necessary and final files to deliver in a special folder called “Practical Assignment Submission”.

### **NON-FUNCTIONAL REQUIREMENTS**

**Interface and usability.**

NFR1:Show the number of votes as well as the person who voted. This option is refreshed every 30 minutes.

NFR2: It should be possible to add a colour in order to identify a subject that will take place during the meeting.

**Documentation requirements**

NFR3: All modifications to a delivery, including date and time, will be saved.

**Security requirements**

NFR4: A copy of the delivery will be created.

**Maintainability and portability requirements**

**Resources requirements**

NFR5: The accepted delivery documents will be the ones specified by the teachers.

**Performance requirements**

NFR6: Once the deadline of a delivery is reached, the files uploaded will be sent.

**Behaviour requirements**

**Availability requirements**

NFR7: Before the deadline, the files can be changed at any time.

**Support requirements**

NFR8: The system will save the previous upload of a delivery, so you can undo a delivery.

**Verification and reliability**

NFR9: One day before the deadline, the system will send a message to all team members so all of them are aware of what is going to be uploaded.

## 

## **MEETINGS TOOL SUBSYSTEM**

### **FUNCTIONAL REQUIREMENTS**

FR1: Docufy will provide a tool for a meeting and its objectives so members can create and assign tasks, set deadlines, mark them as ongoing or completed, edit, etc.

1. First, the system needs a file for each assignment team with their meetings and their objectives
   1. This file has a field with the meeting name.
   2. Each meeting is divided by objectives, so the second field is the meeting objectives’ names.
   3. Then a field stating if that objective has been completed.
2. For each objective there is a file with information about the tasks it is divided in.
   1. Each objective will be divided by tasks, so the first field is the task name.
   2. Then, the student’s name who is responsible for that task.
   3. Then a deadline for the task.
   4. A field displaying the state of the task (ongoing or completed).

FR2: Docufy will provide a mechanism to know if tasks/deliverables are sent in time.

1. The system needs a file containing the deliverables and their due dates.
   1. The file will have a field with the assignment name.
   2. Another field with the date.
2. To know if a specific team sends a deliverable in time, there is a file containing the teams and their assignments.
   1. There is a field stating the team name.
   2. Another field with the specific assignment name for that team.
   3. And a boolean field stating if it was sent on time, if sent.

### **NON-FUNCTIONAL REQUIREMENTS**

**Interface and usability.**

NFR1: There will be 2 visible tables. One for having monotonized the task carried out by the team and another one to know if the tasks are met on the date.

NFR2: These tables will be shown during a meeting.

NFR3: The objectives can be displayed in different colours to see the priority.

**Documentation requirements.**

NFR4: The tables will follow the APA format.

**Security requirements**

NFR5:The information from this subsystem is private to the users it concerns, it can’t be shown to other users.

**Maintainability and portability requirements**

NFR6: The time will be updated regularly.

**Resources requirements**

NFR7: The tables would be able to be downloaded in a format compatible with Excel.

**Performance requirements**

NFR8: The tables must be updated in less than 0.5 seconds after an objective of the meeting is fulfilled or any other relevant action is completed.

NFR9: All modifications will be saved automatically 5 seconds after there aren’t more modifications.

**Behaviour requirements.**

NFR9: The updating of the tables must be in real time, so as soon as a task is completed, the table is updated.

**Availability requirements**

NFR10: The tables can be seen while someone is modifying them, and there is no need to modify them if you are just watching.

**Support requirements**

NFR11: First time a student is using the table a tutorial will appear to get used to the functionality.

NFR12: Questions can be asked in order that a developer can solve them.

**Verification and reliability**

NFR13: The system will ask if you are sure to save the changes in a table before you close it.

## 

## **STATISTICS MANAGEMENT SUBSYSTEM**

### **FUNCTIONAL REQUIREMENTS**

FR1: The professor can request a report (textual or graphical) of the statistics regarding the meetings taken and grouped by practical assignment and group:

1. Subjects and their practical assignments (each file is a subject).
   1. The first field would be the name of the subject.
   2. The second would be the name of the practical assignment.
2. Practical assignments and statistics about each group (each file is a practical assignment).
   1. First field is the group name.
   2. Then there is a field with the average number of meetings.
   3. Next, a field with the average duration of said meetings.
   4. Then, the percentage of planned meetings that were cancelled.
   5. Lastly, a field with the number of deliverables sent.

FR2: The professor can request a report (textual or graphical) of the statistics regarding the meetings taken by the teams and grouped by practical assignment, group and team:

1. Subjects and their practical assignments (each file is a subject).
   1. The first field would be the name of the subject.
   2. The second would be the name of the practical assignment.
2. Practical assignments and statistics about each group and team (each file is a practical assignment).
   1. First field is the group name.
   2. Second field is the team name.
   3. Then there is a field with the total number of meetings.
   4. Next, a field with the average duration of said meetings.
   5. Then, the percentage of planned meetings that were cancelled.
   6. A field with the number of deliverables sent.
   7. Frequency of meetings during the beginning of the practical assignment.
   8. Frequency of meetings during the middle of the practical assignment.
   9. Frequency of meetings during the end of the practical assignment.

### **NON-FUNCTIONAL REQUIREMENTS**

**Interface and usability.**

NFR1: The statistics will be eligible before the generation of the same.

NFR2: Practical assignments, practical assignment groups and teams will be selected before the generation of the statistics.

**Documentation requirements.**

NFR3: The tables will follow the APA format.

NFR4: The textual reports will be in .txt format.

NFR5: The graphical reports will be in .xlsx format.

**Security requirements**

NFR6: The professor will have to enter a password to get a report, previously saved when the account is created.

**Maintainability and portability requirements**

**Resources requirements**

NFR7: You must be connected to the internet in order to download the statistics.

**Performance requirements**

NFR8: The download should take less than 5 minutes to download if the sample is large.

**Behaviour requirements.**

NFR9: Once the report is downloaded, it will appear on the “Downloads” folder of the user’s PC.

**Availability requirements**

NFR10: The download cannot be made if there is a meeting transmitting in the sample selected.

**Support requirements**

NFR11: There will be a description after the name of the statistics to know what you are getting.

NFR12: There will be an option to get the last statistics you chose.

**Verification and reliability**

NFR13: The system will not give any report if the user does not select any statistic.