CSYLLABUS
Requirements Definition
Version1.0

Contents

1   INTRODUCTION

1.1   Purpose of this document

The purpose of this document is to analyze the project domain and to define the functional and nonfunctional requirements. In this document will be described what is supposed to develop viewed from the user perspective. This is a crucial part of the development being that it permits to clarify and understand project domain.

1.2   Intended audience

- Development team, as a guidance during the development activities and for the team to ensure they understand the requirements of the project.
- The supervisors who can use this document to understand the future process of the project.
- The customer who can ensure that all the requirements are captured by the team.

1.3   Scope

This document provides high level description of requirements for the CSyllabus project. Requirements definition focus on what to do and not how to do it. Also it will provide both functional and nonfunctional requirement descriptions based on client inputs along with UML diagrams.

1.4   Document Structure

The document is organized in three parts:

- Domain analysis: describes the problem and analyzes the domain from different user perspectives.
- Functional Requirements: defines the requirements in a form of user stories. If user story does not provide enough details there will be UML diagrams to ensure a clear assignment.

- Non functional Requirements: describes requirements that shows how the system should work. They serve as constraints or restrictions of the system design that should be met. Defines system attributes such as availability, security, privacy, data redundancy and performance.

1.5   Definitions and Acronyms

- User *noun*: in some parts named user and it refers to a student, professor or a guest depending of the context.
- App *noun*: refers to Csyllabus, the software to build.
- User story *noun:* short description of functionality told from the user's perspective
- Use Case *noun*: list of actions or event steps typically defining the interactions between a role and a system. Can include various requirements.
- Actor *noun*: who interacts with the app.
- System *noun:* set of components working together
- Graph *noun*: shows data distribution in a intuitive form where each node represents a field.
- Administrator *noun*: who can manage the server and the app.
- DSD: Distributed Software Development

2   DOMAIN ANALYSIS

2.1 Problem Description

Today the academic world is into the global environment and each time it is greater the transit of students from one university to another. The major of time to take a interchange experience or sometimes to get additional studies. From this situation emerge the exhausting work for the students of taking good decisions around their study plans. This because of they have to find the best subjects according to their needs in a lot of universities. They have to search in all the syllabus systems of each university and to compare them. Additionally, with the end of teaching in a good way, instructors or professors face the task of keeping abreast of best practices in their fields. This is not to fruitful in a centralized academic environment. For this reason they need a way to do it globally. By last, The researchers are interested in to see what is happening with their fields around the universities. They don´t access easily to some kind of information, for example, which topics are discussed in the top universities.

2.2 Goals

G1.   To assist students in making good educational choices

G2.   To assist instructors in sharing best practices

G3.   To assist education researchers in understanding the evolution of our field

2.3 Domain

- Students are interested in informations about other universities and their study plans. Students want to go to the best university that suits their needs To do so, they need to get informations about other faculties and their courses. Because foreign faculties are not often well known and courses can have different names they will need to have opportunity to compare their familiar courses with other availables.

- Professors are in constant research in the academic world. A good professor is updated about the new ways to teach others. However often times he is in lack of quality informations and good feedback on his work. Professors can have possibility to see other feedbacks on their work in a view of comments and votes.

3   FUNCTIONAL REQUIREMENTS

3.1   Users

It is important to clarify that the actors mentioned in this document are in scope of User. User is high level of abstraction representing a single role in the system.

- Guest: is a person that belongs to the academic community who does not have an account registered in Csyllabus system. Guest is user who has high level of overview on the main functionalities of the system but has no user-identification-required features available such as user profile or can build user engagement.
- Student: is the registered user with verified Csyllabus account. He has all features as a guest plus user-identification-required features such as user profile and possibility to leave comments or vote for course their are familiar with.
- Professor: is the registered user with verified Csyllabus account. He has all features as a guest plus user-identification-required features such as user profile except possibility to leave comments or vote for course their are familiar with. Professors can learn from

comments and use them to improve their personal skills. Professors can have option to upload new syllabus.

3.2   User Stories

ID	User Story
US1	As a student I want to search for syllabi by name, faculty or country
2	As a student I want to see syllabi details so I can see what it contains
3	As a student I want to see details of course so I can see what they offer
4	As a student I want to see details of faculty so I can know more about faculty
5	As a student I want to compare my syllabi with other syllabuses
6	As a student I want to choose country and faculty I am studying at so I can choose my own courses for comparison
7	As a student I want to see which are the best faculties for my chosen courses of interest
8	As a student I want to see which faculties are most similar to my own so I can see what is my best option
9	As a student I want to see other subjects that are relevant for me
10	As a student I want to choose destination country and faculty so I can compare my courses with them.
11	As a student I want to see recommended courses so I can maybe come to know something new
12	As a student I want to comment and evaluate a course
13	As a student I want to share a syllabus in social media so others can see it
14	As a Professor I want to have option to add new syllabi to the database so that database can expand

15	As a User I want to have a profile with my personal data
16	As a User I want to know what is the most searched faculty, subject and tag
17	As a Professor I want to see statistics data in graphic format
18	As a Guest I want to see the main functionalities without an account

3.3   User Story Descriptions

Story ID	1
Story	As a student I want to search for syllabi by name, faculty or country
Source	
Detailed Description	Student wants to search through the syllabuses using a filters. This filters can be the subject name, technology or any course related value, for example "Artificial Intelligence". Also Student can use a faculty name to refer one University specifically or one country. When User does this, the app should show him a list of the syllabuses according to given criteria.
Validation Criteria	- The User can choose the search criteria - The app provides the results according the chosen criteria

Story ID	2
Story	As a student I want to see syllabus details so I can see what it contains
Source	

Detailed Description	When a syllabus is opened it must show to User detail informations. User wants to see for example; title, university, field, type of subject; undergraduate or graduate, about of, pre requirements, grading, language, etc. This information must be showed in a clear and intuitive form in the same page. Also, he can download this information if he wants
Validation Criteria	- User can see all informations about specific subject - The information is completed

Story ID	3
Story	As a student I want to see details of course so I can see what they offer
Source	
Detailed Description	User can see details of single course. Details include following if available: course name, belonging syllabus id, belonging faculty name, course short and long description, course tags, comments and ratings from other users and graphic statistics showing course popularity.
Validation Criteria	- User can see details of course - User can see comments and ratings from other users

Story ID	4
Story	As a student I want to see details of faculty so I can know more about faculty
Source	
Detailed Description	User wants to know more about the faculty

	related with the syllabus. The app must show a short description of the university and a link to the official website
Validation Criteria	● User can reach the information about the faculty associated to the syllabus ● User can go from the syllabus description

Story ID	5
Story	As a student I want to compare my syllabus with other syllabuses
Source	
Detailed Description	User wants to compare his syllabus with others available syllabuses. This comparison could be according to the tags, topics, ranking of universities, etc .
Validation Criteria	● The app has incorporated a comparator between syllabuses

Story ID	6
Story	As a student I want to choose country and faculty I am studying at so I can choose my own courses for comparison
Source	
Detailed Description	User can choose country and faculty and then he will have a list of available courses on that faculty. User can choose courses of interest to be compared with other syllabuses.
Validation Criteria	● User can choose his faculty and country

	- A list of his sobjects is showed - He can see similar courses

Story ID	7
Story	As a student I want to see which are the best faculties for my chosen courses of interest
Source	
Detailed Description	User can see results of comparison. Results will show him relevant informations and comparison generated priority data.
Validation Criteria	User can see the top universities around his subjects

Story ID	8
Story	As a student I want to see which faculties are most similar to my own so I can see what is my best option
Source	
Detailed Description	User can compare whole faculty syllabus with other faculties
Validation Criteria	- The User can see his best suggested option. - The User can review all the possible suggestions

Story ID	9
Story	As a student I want to see other courses that are relevant for me

Source	
Detailed Description	User can see suggested courses without need to manually enter courses for comparison. System can suggest data based on other users.
Validation Criteria	● The User can see a list of suggested courses..

Story ID	10
Story	As a student I want to choose destination country and faculty so I can compare my courses with them.
Source	
Detailed Description	User can choose destination country and faculty so he will get compared data based on chosen input.
Validation Criteria	● User can choose his destination faculty and country which are relevant in comparison

Story ID	11
Story	As a student I want to see recommended courses so I can maybe come to know something new
Source	
Detailed Description	User can see courses that system recommend to him. He can use that data in further decisions.
Validation Criteria	● User can see similar courses

Story ID	12
Story	As a student I want to comment and evaluate a course
Source	
Detailed Description	When students have attended a course they can left comment how did it looks like. Also, they can evaluate the course with a ranking system.
Validation Criteria	- User can add comments to each subject - User can evaluate each subject - App has filters for the comments.

Story ID	13
Story	As a student I want to share a syllabus in social media so others can see it
Source	
Detailed Description	User can share with others syllabus with other users on other social networks
Validation Criteria	User can share syllabus

Story ID	14
Story	As a Professor I want to have option to add new syllabi to the database so that database can expand
Source	
Detailed Description	Professor will have option to contribute to database with his version of syllabus.

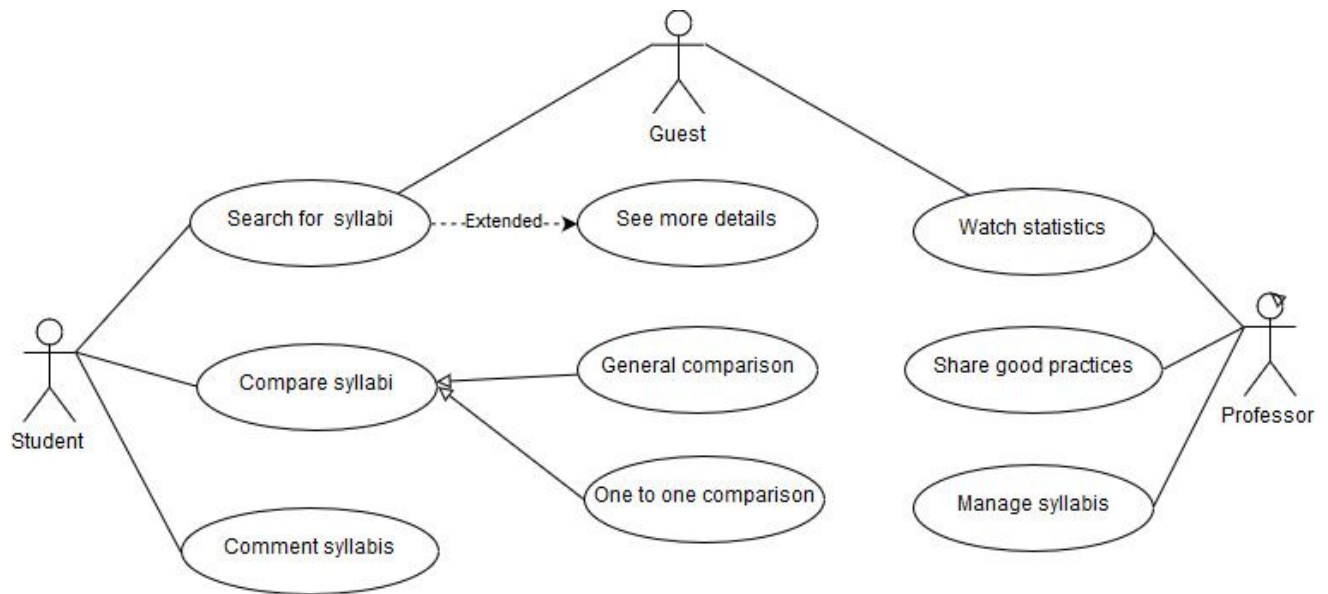| Validation Criteria	● Professor can submit a form to create a new syllabus. ● Professor can send a syllabus with a specific format to the system.

Story ID	15
Story	As a Professor I want to have a profile with my personal data
Source	
Detailed Description	User can put his personal informations to his profile page
Validation Criteria	● A completed profile is available for each professor. ● Professor can edit the information in his profile

Story ID	16
Story	As a User I want to know what is the most searched faculty, course and tag
Source	
Detailed Description	User wants to see the system statistics. In a general form, he wants to know which are the most searched faculty, subject and tag.
Validation Criteria	● User can see faculty, course and a tag that is most popular in the search system

Story ID	17
Story	As a Professor I want to see statistics data in graphic format
Source	
Detailed Description	Professor wants to have a completed tool to analyze the behavior of his field. He can see statistics data for single course in more visually attractive format.
Validation Criteria	● Professor must see relevant statistics data in graphic form.

Story ID	18
Story	As a Guest I want to see the main functionalities without an account
Source	
Detailed Description	A guest doesn't need to have an account. However he must be able to see statistics using the analyzer and do the simple searchings using the syllabi explorer.
Validation Criteria	● The main functionalities must be available for the guest without the need of creating account

3.4   Use Cases Diagram

3.5 Use Cases Descriptions

Use case name	Search for syllabus
User stories related	
Actor	Student, Professor, Guest
Pre conditions	User is in the app home
Flow of events	1. User writes in the search engine a search criteria as name, country, faculty and click in go. 2. System performs a query in the database according the criteria. 3. System shows to User in the interface the results found with a list of syllabi.
Post conditions	User can navigate across results
Exceptions	System did not find results: Show to User the problem and come back to home. User wrote a indecipherable word: Show to User the problem and come back to home.

Use case name	See more details
User stories related	
Actor	Student, Guest
Pre conditions	User has done a search
Flow of events	1. User selects a syllabus 2. System shows to User a completed description of the syllables 3. System shows to User the faculty associated and a link to his website 4. System shows the Professor associated to the syllabus
Post conditions	User can see details
Exceptions	A syllables does not have one detail, for example the name of faculty: System sends a message to administrator informing about the error.

Use case name	Compare Syllabi
User stories related	
Actor	Student
Pre conditions	User is already registred, User is in the comparator interface.
Flow of events	1. User submits his faculty and course 2. User selects his subjects 3. User select the type of comparison: General or one to one. 4. User select a destin university or faculty (Optional)
Post conditions	System must know if it´s a general comparison or directed.
Exceptions	The faculty is not in the database: It´s registred and the User must write his syllabi subjects manually or sends to administration

	the descriptions files. The User does not select a destin faculty: The system does a general comparison

Use case name	Compare Syllabi: General comparison
User stories related	
Actor	Student
Pre conditions	User already has submitted his subjects
Flow of events	1. User adds country or city preference. 2. System performs the comparison algorithm with all the syllabi in the database and according to the filters 3. System shows to User the most similar faculties to home. 4. System shows to User the most importants or better ranked syllabi corresponding his subjects. 5. System shows subjects suggested according the student profile.
Post conditions	User can see all the possible comparisons
Exceptions	A subject does not have a possible equivalent: Systems shows to User the error.

Use case name	Compare Syllabi: One to one comparison
User stories related	
Actor	Student
Pre conditions	User already has submitted his subjects, User already has submitted the destin faculty and course.
Flow of events	1. System shows to User the syllabi of the destin faculty.

	2. System shows to User which are the similar subjects between both and which ones are differents.
	3. System shows a percent of similarity
Post conditions	User can knows if the two syllabus are different or no. User can navigate across the syllabus and know more about the faculties
Exceptions	User wants to change the destin faculty: The system provides it in the same interface

Use case name	Comment course
User stories related	
Actor	Student
Pre conditions	User is looking at course
Flow of events	1. User selects add comment
	2. User writes and submits the comment
	3. User rate course
	4. System verify if the comment is entered
	5. System add the comment to the course page
Post conditions	The comment and the rank are added
Exceptions	The comment is missing: System shows user the error

Use case name	Manage syllabi
User stories related	
Actor	Professor
Pre conditions	Professor is in the manage section

Flow of events	1. System shows to User his subjects 2. User selects an action: Delete, upgrade or add a subject. 3. In the case of add and upgrade the system shows to User a form to fill out. 4. User fills out the form and submit the new syllables 5. System verifies if all the fields are completed 6. System add the syllables to the database
Post conditions	A new Syllabus is added
Exceptions	User does not want to submit the form: System shows to user a option to upload a file with free format, After, this is analyzed by de the administrator

Use case name	Watch statistics
User stories related	
Actor	User
Pre conditions	User is in the explorer section
Flow of events	1. User go to explorer page 2. In the page he can see statistics of other users engagement
Post conditions	Reports and summary are shown to User
Exceptions	The data for statistics does not exists so graphs can not be shown.

4   NON FUNCTIONAL REQUIREMENTS

4.1 Usability

- CSyllabus will be a web-based app responsive for mobile usage. In this way, the User can use the app with a different browser from various locations.
- The application must offer a user friendly interface
- The application must be easy to use and understandable. It must not require specific knowledge on new technologies.
- The application must not require more than one hour of training to master its functionalities

4.2 Availability

System will be available through web page so users can use his functionalities. Interaction with the system data will be available through system API.

4.3 Privacy and Security

The data used in this project will be publicly visible to all consumers except in situations where data owner insist otherwise. The personal data of the user will be publicly visible in user profile except when user manually hide informations.. Syllabuses will be available only with the authorization of the respective faculties or universities.

4.2 Performance

The System will be scaled according to user acquisition. Architecture will be designed taking in view later easier expanding and scalability. Since this application will be created in the context of the DSD course, our team will not build or require any dedicated infrastructure for it. Furthermore, it is impossible to estimate and prove the exact value for performance tests in this scope.