CSyllabus
{Project Plan}

Version 1.0

Revision History

Date	Version	Description	Author
2017-10-23	0.01	Initial Draft	Thomas Benetti
2017-10-25	0.02	Gant Diagram, Scope, Reference	Adrien Roques
2017-11-03	1.0	First Fully Completed Version	Adrien Roques

Contents

1. Introduction

1.1 Purpose of this document

The purpose of this document is to provide an overview of the CSyllabus project to build a common understanding about this project and to describe the general organization of its development team. It defines the project vision, roles in the project team as well as describes the planned development process.

1.2 Document organization

The document is organized as follows:

- Section 1, *Introduction,* describes contents of this guide, used documentation during developing process etc.
- Section 2, *Background and Objectives,* briefly introduces the customer and describes what's the purpose of the project from the customer's perspective.
- Section 3, *Impact,* describes who are the people interacting with the system and how will the system impact on their life.
- Section 4, *Project group,* defines the team members, their roles and the structure of the project team.
- Section 5, *Development process,* describes the SCRUM process from the point of view of the team.
- Section 6, *Organization and communication,* defines the meetings organization and the communication tools.
- Section 7, *Initial time plan,* defines a preliminary project schedule by organizing the project scrum sprints and indicates the initial deadlines, but also the Gantt chart.
- Section 8, *Quality assurance,* describes the QA process used for the project.
- Section 9, *Project risks,* defines the lists of potential risks involved in the project development as well as provides potential risk minimization actions that are going to be implemented by the team.

1.3 Intended Audience

The intended audience is:

- The development team, to guide the initial project development and to ensure that the project vision is shared among the team members.
- The stakeholders, to inform them about the scope and planning of the project.
- Anyone who wants to know more about this project

1.4 Scope

This document tries to address the general shape to the final product will have to deliver. It defines all the rules, standards and guidelines that the team has decided to choose. The overall organization of all members, including internal roles and development process are described.

2. Definitions and acronyms

2.1 Definitions

Keyword	Definitions
SCRUM	An iterative and incremental agile software development framework for managing the development of a product.
Sprint	Basic unit of time of the project development cycle used in scrum. Usually this set of time is of 1 week to 1 month maximum.

2.2 Acronyms and abbreviations

Acronym or abbreviation	Definitions
NTR	Nothing to Report. There is no information to a specific topic available or necessary.
FER	Faculty of Electrical Engineering and Computing, University of Zagreb
POLIMI	Politecnico di Milano, Italy
SCORE	Student Contest on Software Engineering

3. Background and Objectives

3.1 The customer

The customer is Gruia-Catalin Roman, who is a professor of computer science at the University of New Mexico. He proposed this project idea because he saw that searching for a syllabus is a big problem nowadays.

3.2 Project description

The computer science faculty values free exchange of ideas, availability of open source software, open publications, exchange of pedagogical advances, etc. Yet, upon entering the website of a particular institution understanding the graduation requirements is often a real challenge and tracking the syllabus of a specific course can be a daunting undertaking. The goal of this project is to create a national repository of computer science course syllabi to assist student in making good educational choices, instructors in sharing best practices, and education researchers in understanding the evolution of our field.

3.3 Project scope

Developing a site where students and faculty may upload syllabi in some standard format like .pdf is not much of a challenge. The real issues are how to encourage participation, how to curate the data, and how to present the data in a meaningful and useful fashion. Accomplishing this with minimal user interaction is the most difficult aspect of this undertaking. Automatically extracting information from the submitted documents will be an important first step in this direction.

3.4 Project vision

Our application will be used to help the students choose courses. For that, the student will be able to choose his home university and if he wants, his wanted destination (via city, country or faculty name), plus the courses he wants to select. He will be able to select them by typing keywords that represent the courses. Then the application will analyze his input and match it with input data from syllabuses to find him suitable faculties and courses.
Our vision besides data gathering and analysis, is to add a community so that students can see feedback from previous students at the proposed universities and maybe contact them to have more informations. But also we would like to introduce to the student what he can see in the chosen city, the night life, the students' occupations, etc…

3.5 The supervisors

They are divided as following :

- Ivana Bosnic as local supervisor, checking process from FER.
- Raffaela Mirandola as remote supervisor, checking progress from POLIMI.

4. Impact

4.1 Who are the users

The users of the system are:

- the students that are searching for syllabi courses on universities
- the instructors that want to share best practice between them
- the researchers to understand the evolution of their field

4.2 Impact of the system on the users

The system could help the users get data more easily, without looking out onto multiple faculties websites.
For students, it would help them look for syllabi course via a simple analyzer tool.

5. Project group

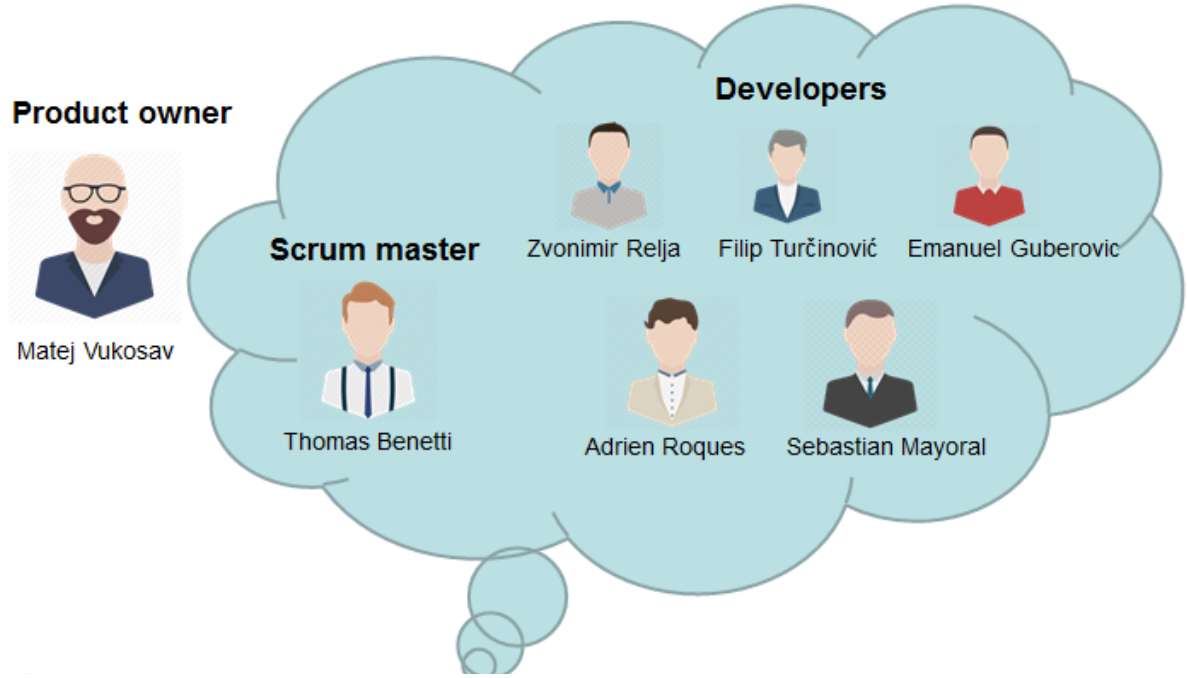
5.1 Members and contact info

The team is composed by 7 members that are distributed throughout the universities of POLIMI and FER involved in this project. The team is divided as following:

Contact info :

- Zvonimir Relja : zvonimir.relja@fer.hr
- Filip Turcinovic : filip.turcinovic@fer.hr
- Emanuel Guberovic : emanuel.guberovic@fer.hr
- Matej Vukosav : matej.vukosav@fer.hr
- Adrien Roques : adrien.roques.31@outlook.fr
- Thomas Benetti : thomas.benetti@mail.polimi.it
- Sebastian Obando Mayoral : obandomayoral@gmail.com

5.2 Roles

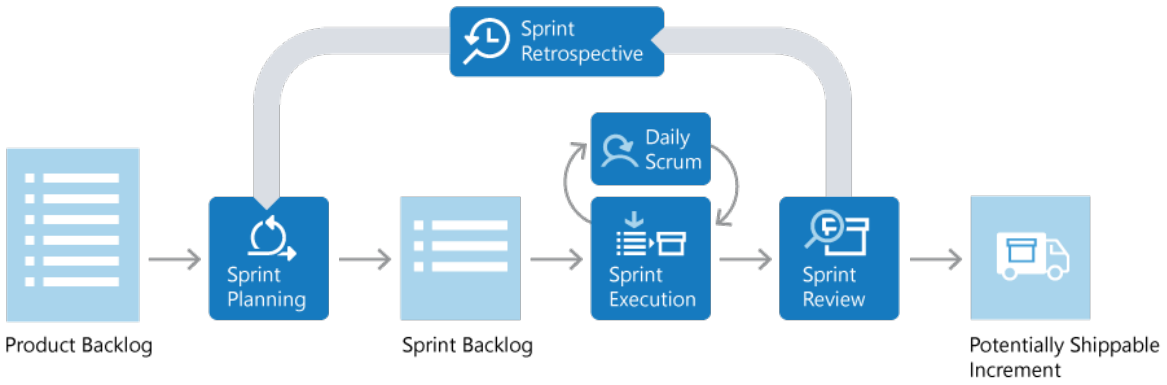


We used the SCRUM approach to define team roles, as following:

- The Product Owner, who is responsible for the product backlog and facilitate the communication between the customer and the development team
- The Scrum Master, who helps the team during all the SCRUM phases and facilitates the ceremonies
- The Development Team, who builds the increment product. The Product Owner and the Scrum Master works with the team.

We used Doodle to choose the project roles. The team has decided then that Matej Vukosav will be the Product Owner and that Thomas Benetti will be the Scrum Master. The Scrum Master will not change unless he doesn't do his job well.

6. Development process



The development process will be done using the SCRUM approach. The team adjusted the SCRUM method in its own way to fit with everyone's schedule and to suit better with the DSD course. Our SCRUM method is composed of:

- The product backlog that is going to be discussed with the customer.
- Each sprint will last 2 weeks. We chose this sprint time because of the team members' availability to work on the project and the amount of work of each sprint.

7. Organization and communication

7.1 Meetings

7.1.1 Team meetings

We currently have two types of team meetings:

- **Daily meetings**: with the SCRUM method, a meeting must be done every day of work, which includes the work done yesterday, the work that will be done today and what problems have been encountered by each team member. But as we are not working every day on this project, we are doing the daily meetings on Wednesday, Friday and Sunday.
- **Weekly meetings**: These meetings are done on Sunday and lasts 1 hour and a half. The planning of these meetings are :
    - If it is the end of a sprint: to do the sprint retrospective and plan the next sprint.
    - If it is the middle of a sprint (1 week): to check the current sprint's progress.
    - If there is a presentation on the next Tuesday: to do the assignment of the 2 team members that will do the next oral presentation.

7.1.2 Team and supervisors meetings

They are held on Fridays. They are used to control the progress of the project with the supervisors, but also to have their opinions.

7.1.3 Customer meetings

The customer meetings are not held as team and supervisors meetings. They are held when its necessary for the project progress, and if the team has interrogations on some project caracteristics.

7.2 Forms of contact

At first, all the meetings were done via Skype but we occured to have some troubles regarding Skype so we used Google Hangouts as a backup plan for internal meetings. The off-board communication is done via Slack, Google Drive or e-mail. We also use Kanban Flow for project management and Toggl for time tracking.

7.3 Worked time reports

The worked time on any task is reported on Kanban Flow. Each team member use the task time log to enter the time spent on each task every day. When the task is done, it is compared to the estimated time to know how much and why it may be different.
Kanban Flow also has a time tracking tool that is used by several team members. It allows them to launch a timer with pre-defined work time and breaks. In that way, they can define their schedule and after each time spent know why they overflowed the estimated work time.

But we had an issue with Kanban Flow regarding worked time : it cannot generate reports/analysis to use for sprint reports. So we used Toggl to enter our working hours and to be able to visualize metrics concerning our worked time.

7.4 Configuration management

We use Git to manage multiple versions of our application, with everyone working on separate branches, it allows the work to be done without interferences and to keep stable versions of the application.
Also we use GitHub as the repository of Git applications versions. The repository is public as it is a SCORE project.

8. Initial time plan

8.1 Planned sprints

Sprint	Start date	End date	Description
0	2017-10-13	2017-10-27	Research
1	2017-10-27	2017-11-10	Explorer and database
2	2017-11-10	2017-11-24	Comparator
3	2017-11-24	2017-12-08	Community
4	2017-12-08	2017-12-22	Validation
5	2018-01-05	2018-01-19	Final report

8.2 Deadlines

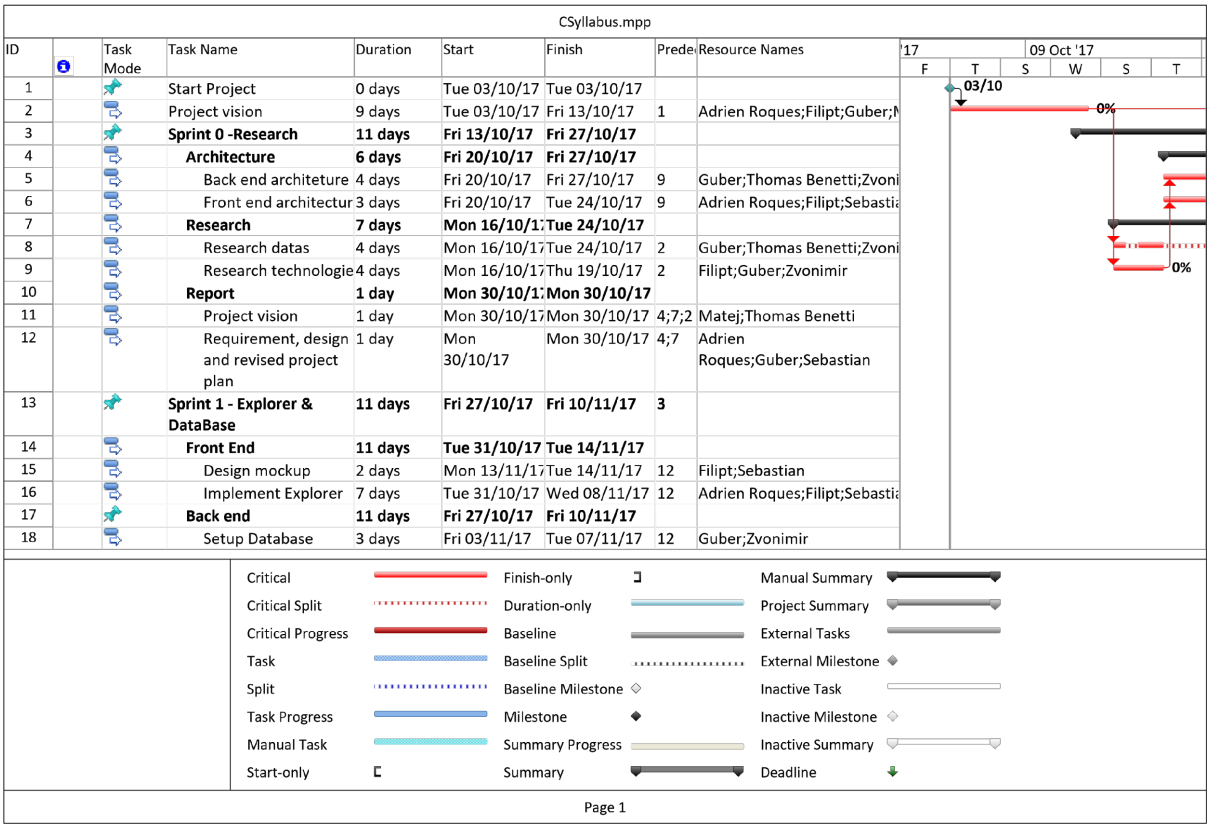
Item	Type	Date
Project vision and project plan	Presentation	2017-10-17
Requirements, design and revised project plan	Presentation	2017-10-31
Project plan document (v1)	Deliverable	2017-11-03
Requirements definition document (v1)	Deliverable	2017-11-10
Design description document (v1)	Deliverable	2017-11-10
Status report	Presentation	2017-11-14
Milestone – Alpha prototype	Presentation	2017-11-28
Milestone – Beta prototype	Presentation	2017-12-12
Acceptance test plan	Deliverable	2017-12-22
Final project	Presentation	2018-01-09
SCORE report	Deliverable	2018-01-15
Test report	Deliverable	2018-01-19
Final project report	Deliverable	2018-01-19
Final product	Deliverable	2018-01-19

8.3 Gantt chart

The activity plan is presented in the Gantt chart below. The activities and milestones are shown

CSyllabus.mpp

ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors	Resource Names
1		Start Project	0 days	Tue 03/10/17	Tue 03/10/17		
2		Project vision	9 days	Tue 03/10/17	Fri 13/10/17	1	Adrien Roques;Filipt;Guber;N
3		**Sprint 0 -Research**	**11 days**	**Fri 13/10/17**	**Fri 27/10/17**		
4		**Architecture**	**6 days**	**Fri 20/10/17**	**Fri 27/10/17**		
5		Back end architeture	4 days	Fri 20/10/17	Fri 27/10/17	9	Guber;Thomas Benetti;Zvoni
6		Front end architectur	3 days	Fri 20/10/17	Tue 24/10/17	9	Adrien Roques;Filipt;Sebastia
7		**Research**	**7 days**	**Mon 16/10/17**	**Tue 24/10/17**		
8		Research datas	4 days	Mon 16/10/17	Tue 24/10/17	2	Guber;Thomas Benetti;Zvoni
9		Research technologie	4 days	Mon 16/10/17	Thu 19/10/17	2	Filipt;Guber;Zvonimir
10		**Report**	**1 day**	**Mon 30/10/17**	**Mon 30/10/17**		
11		Project vision	1 day	Mon 30/10/17	Mon 30/10/17	4;7;2	Matej;Thomas Benetti
12		Requirement, design and revised project plan	1 day	Mon 30/10/17	Mon 30/10/17	4;7	Adrien Roques;Guber;Sebastian
13		**Sprint 1 - Explorer & DataBase**	**11 days**	**Fri 27/10/17**	**Fri 10/11/17**	**3**	
14		**Front End**	**11 days**	**Tue 31/10/17**	**Tue 14/11/17**		
15		Design mockup	2 days	Mon 13/11/17	Tue 14/11/17	12	Filipt;Sebastian
16		Implement Explorer	7 days	Tue 31/10/17	Wed 08/11/17	12	Adrien Roques;Filipt;Sebastia
17		**Back end**	**11 days**	**Fri 27/10/17**	**Fri 10/11/17**		
18		Setup Database	3 days	Fri 03/11/17	Tue 07/11/17	12	Guber;Zvonimir



Page 1

CSyllabus.mpp

ID	Task Mode	Task Name	Duration	Start	Finish	Prede	Resource Names
19		Migration Database	1 day	Wed 08/11/17	Wed 08/11/17	18	Guber;Zvonimir
20		Implement REST API	4 days	Thu 09/11/17	Thu 23/11/17	19	Guber;Zvonimir
21		Algorithm Search	2 days	Thu 09/11/17	Fri 10/11/17	19	Thomas Benetti
22		**Documentation**	**1 day**	**Mon 30/10/17**	**Tue 31/10/17**		
23		Project plan v1	1 day	Mon 30/10/17	Tue 31/10/17	12	Adrien Roques;Thomas Bene
24		Requirements definition	1 day	Tue 31/10/17	Tue 31/10/17	12	Sebastian;Matej
25		Design definition	1 day	Tue 31/10/17	Tue 31/10/17	12	Filipt;Guber;Zvonimir
26		**Sprint 2 - Comparator**	**11 days**	**Sat 11/11/17**	**Fri 24/11/17**	**13**	
27		**Front End**	**7 days**	**Wed 15/11/17**	**Thu 23/11/17**		
28		Implement Comparat	7 days	Wed 15/11/17	Thu 23/11/17	14	Adrien Roques;Filipt;Sebastia
29		**Back end**	**7 days**	**Mon 13/11/17**	**Tue 21/11/17**		
30		Algorithm Comparatc	7 days	Mon 13/11/17	Tue 21/11/17	17	Guber;Thomas Benetti;Zvoni
31		**Report**	**1 day**	**Tue 14/11/17**	**Tue 14/11/17**		
32		Status report	1 day	Tue 14/11/17	Tue 14/11/17		Matej
33		**Sprint 3 - Community**	**11 days**	**Fri 24/11/17**	**Fri 08/12/17**	**26**	
34		**Front end**	**11 days**	**Fri 24/11/17**	**Fri 08/12/17**		
35		Implement Social par	8 days	Wed 29/11/17	Fri 08/12/17	27	Adrien Roques;Filipt;Sebastia
36		Manage account	2 days	Fri 24/11/17	Mon 27/11/17	27	Adrien Roques;Filipt;Sebastia
37		**Back end**	**11 days**	**Fri 24/11/17**	**Fri 08/12/17**	**29**	
38		Manage Social part	8 days	Wed 29/11/17	Fri 08/12/17	29	Guber;Thomas Benetti;Zvoni

'17 | 09 Oct '17 | F | T | S | W | S | T

Critical	Finish-only	Manual Summary
Critical Split	Duration-only	Project Summary
Critical Progress	Baseline	External Tasks
Task	Baseline Split	External Milestone
Split	Baseline Milestone	Inactive Task
Task Progress	Milestone	Inactive Milestone
Manual Task	Summary Progress	Inactive Summary
Start-only	Summary	Deadline

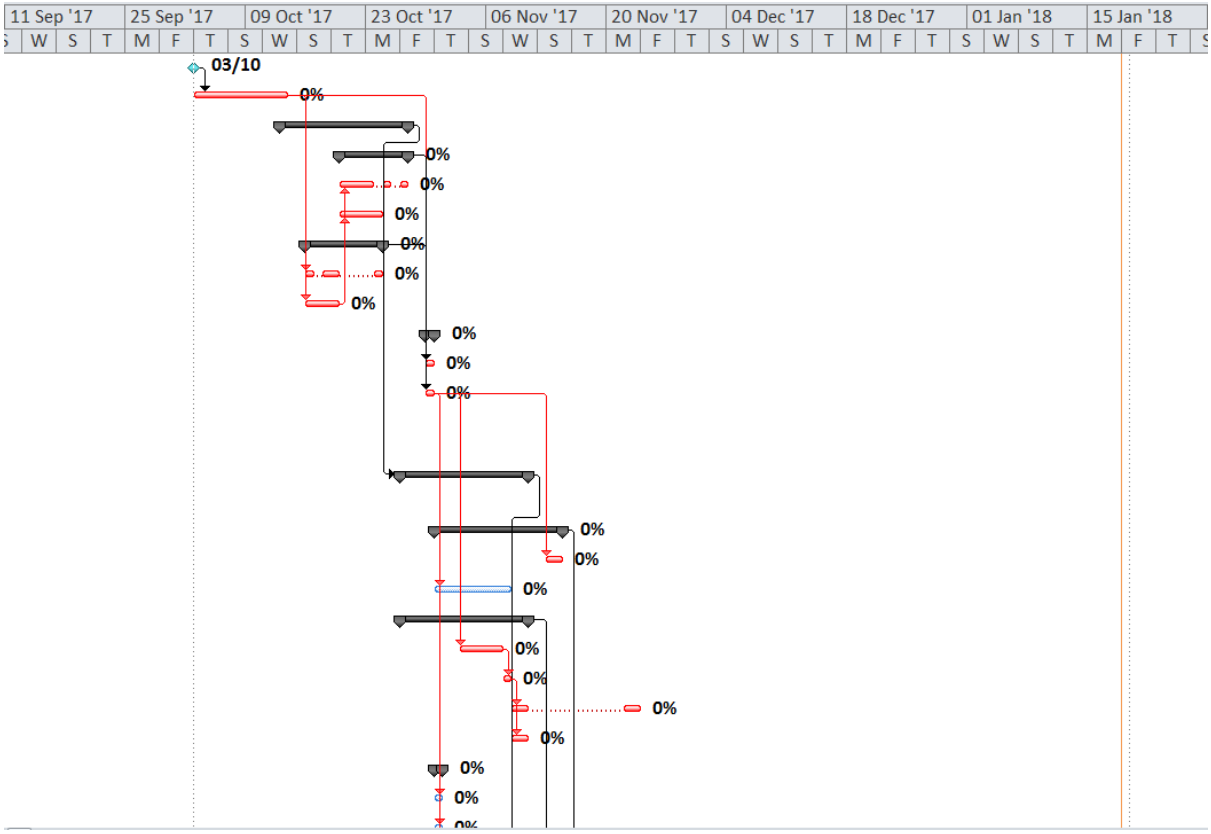
Page 2

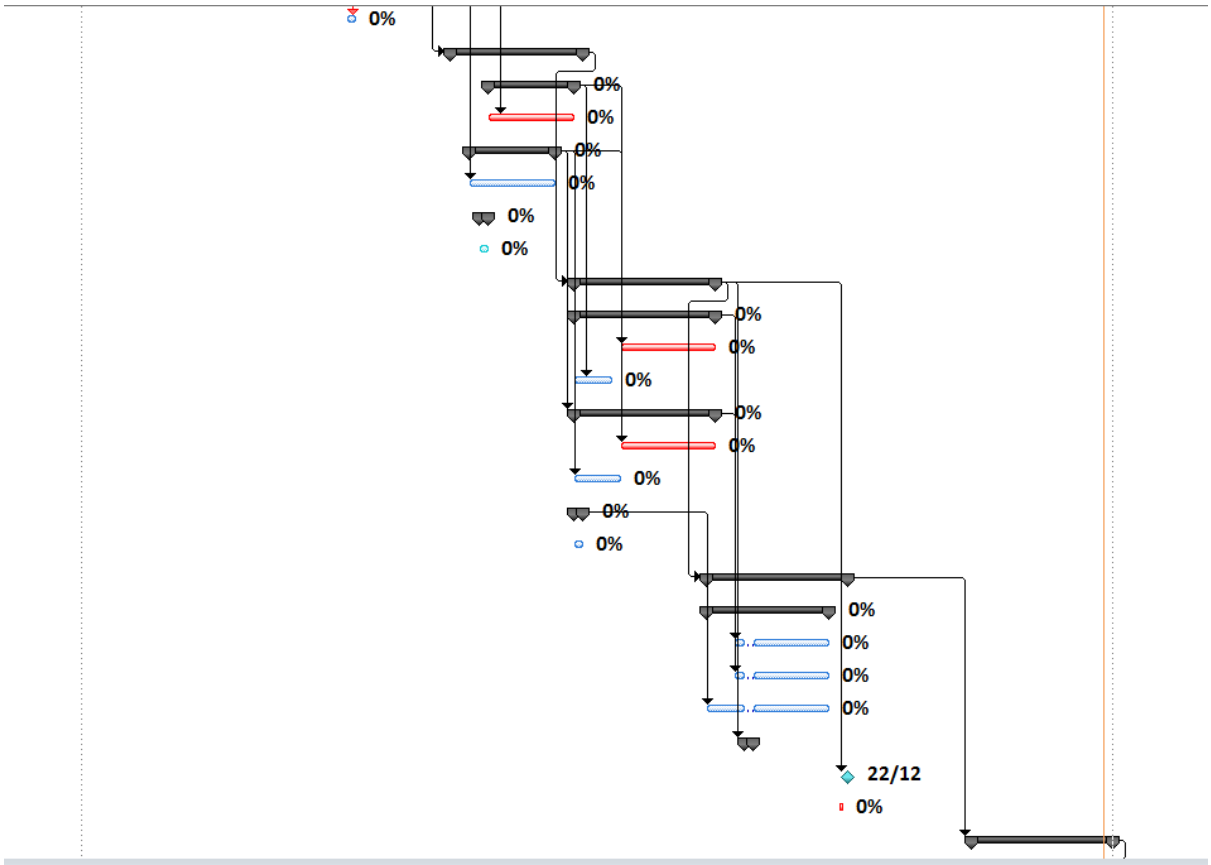
ID	Task Mode	Task Name	Duration	Start	Finish	Prede	Resource Names
39		Manage account	3 days	Fri 24/11/17	Tue 28/11/17	29	Guber;Thomas Benetti;Zvoni
40		**Report**	**1 day**	**Fri 24/11/17**	**Fri 24/11/17**		
41		Milestone, Alpha prot	1 day	Fri 24/11/17	Fri 24/11/17		Adrien Roques;Filipt;Guber;N
42		**Sprint 4 - Validation**	**11 days**	**Fri 08/12/17**	**Fri 22/12/17**	**33**	
43		**Validation**	**9 days**	**Fri 08/12/17**	**Wed 20/12/17**		
44		Validation front end	7 days	Mon 11/12/17	Wed 20/12/17	34	Adrien Roques;Filipt;Sebastia
45		Validation back end	7 days	Mon 11/12/17	Wed 20/12/17	37	Guber;Thomas Benetti;Zvoni
46		Validation documenta	8 days	Fri 08/12/17	Wed 20/12/17	40	Matej
47		**Report**	**1 day**	**Tue 12/12/17**	**Tue 12/12/17**	**33**	
48		Milestone, Beta prot	0 days	Fri 22/12/17	Fri 22/12/17	33	Adrien Roques;Filipt;Guber;N
49		Acceptance test plan	0,5 days	Fri 22/12/17	Fri 22/12/17		Adrien Roques;Filipt;Guber;N
50		**Sprint 5 - Final**	**11 days**	**Fri 05/01/18**	**Fri 19/01/18**	**42**	
51		**Report**	**1 day**	**Fri 05/01/18**	**Fri 05/01/18**		
52		Final project	1 day	Tue 09/01/18	Tue 09/01/18		Adrien Roques;Filipt;Guber;N
53		SCORE report	1 day	Mon 15/01/18	Mon 15/01/18		Adrien Roques;Filipt;Guber;N
54		Test report	1 day	Fri 19/01/18	Fri 19/01/18		Adrien Roques;Filipt;Guber;N
55		Final project report	0 days	Fri 19/01/18	Fri 19/01/18		Adrien Roques;Filipt;Guber;N
56		Final product	0 days	Fri 19/01/18	Fri 19/01/18		Adrien Roques;Filipt;Guber;N
57		End project	0 days	Fri 19/01/18	Fri 19/01/18	50	

'17 | 09 Oct '17 | F | T | S | W | S | T

Critical	Finish-only	Manual Summary
Critical Split	Duration-only	Project Summary
Critical Progress	Baseline	External Tasks
Task	Baseline Split	External Milestone
Split	Baseline Milestone	Inactive Task
Task Progress	Milestone	Inactive Milestone
Manual Task	Summary Progress	Inactive Summary
Start-only	Summary	Deadline

Page 3


11 Sep '17
25 Sep '17
09 Oct '17
23 Oct '17
06 Nov '17
20 Nov '17
04 Dec '17
18 Dec '17
01 Jan '18
15 Jan '18
03/10
0%



9. Final time plan

9.1 Planned sprints

Sprint	Start date	End date	Description
0	2017-10-13	2017-10-27	Research
1	2017-10-27	2017-11-10	Explorer and database
2	2017-11-10	2017-11-24	Comparator
3	2017-11-24	2017-12-08	Community
4	2017-12-08	2017-12-22	Validation
5	2017-12-22	2017-01-05	Final report

9.2 Deadlines

Item	Type	Date
Project vision and project plan	Presentation	2017-10-17
Requirements, design and revised project plan	Presentation	2017-10-31
Project plan document (v1)	Deliverable	2017-11-03
Requirements definition document (v1)	Deliverable	2017-11-10
Design description document (v1)	Deliverable	2017-11-10
Status report	Presentation	2017-11-14
Milestone – Alpha prototype	Presentation	2017-11-28
Milestone – Beta prototype	Presentation	2017-12-12
Acceptance test plan	Deliverable	2017-12-22
Final project	Presentation	2018-01-09
SCORE report	Deliverable	2018-01-15
Test report	Deliverable	2018-01-19
Final project report	Deliverable	2018-01-19
Final product	Deliverable	2018-01-19

9.3 Comparison of Gantt chart with initial plan

Activity	S0	S1	S2	S3	S4	S5
Project preparations						
Requirements analysis						
Back-end architecture						
Front-end architecture						
Data search						
Technologies search						
Mockup design						
Explorer						
Database setup						
Rest API						
Comparator						
Social part						
Accounts						
Testing						
Documentation						
Conferences						

S0	S1	S2	S3	S4	S5

The Gantt diagram created before starting developing on left and actual one on right.

As shown on this figure, we had multiple tasks to work on and so we divide them into the sprints taking into consideration their order, estimated time and relevance using the Scrum approach.
During the project, at the end of each sprint, we defined which tasks were not done and regarding their importance, we reported them into the next sprint or deleted them when we thought we won't have enough time to successfully complete them (« Accounts » task for example)
Except this task, we succeeded in following the plan with some small modification on the planning flow due to overtime spent in some activities. (for example, we needed to improve comparator algorithm).

10. Quality assurance

To ensure that the quality of each component is maximal, we are using cross-validation. It means that each feature that is developed and tested by a team member is then tested again by another team member. That allows the verification of each feature goals and what the feature was supposed to do.

11. Risks

N°	Description	Actions
1	**Project vision understanding :** It is a key element of the project because as the development of the project is distributed throughout FER and POLIMI, we must be sure that all the ideas have been understood by each team member whatever is his location.	Communicate the most possible between all the team members and ask them to explain what is clear for them about the project vision.
2	**High Workload:** Some tasks in the process may require more time to complete than expected.	To avoid problems with exceeding the deadlines, We will assign tasks to team members regarding the tasks' priority.
3	**Indisponibility :** Departure or indisponibility of a team member. Unable to reach him for project tasks.	Alert supervisors of the problem and if it's not solved, re-assign his tasks to the other team members, with re-prioritizing the most important tasks due to deadlines and lack of time.
4	**Data issues :** If the database is not populated enough, that there's not enough courses for students to be able to use the app.	We must re-prioritize the tasks with as high priority, the data seek/search in order to make our website usable.
5	**Community issues :** If there's no registration for the app community and that no one wants to use our website.	Contact our friends who are able to use it so that it can help start the app to be known and to be recognized as a very helpful tool.