PlaDat: a Software Development Process assignment 2

Introduction to PlaDat and goal

PlaDat was born out of a **common need** of university and non-university students.

Often, for reasons related to the curriculum of the course of study, for work requirements and/or for the desire you to put into practice the knowledge acquired and experiment, during the course of study students decide to **enter the world of work**. However, **school knowledge is not sufficient** to churn out professionally prepared workers, remaining at a higher level of **abstraction** than actually required, eclipsing **practice** behind theory. Although the latter is extremely important for an innovation-driven world such as ours, teenagers, with little experience, must be able to tiptoe into the market, without pressure, and, above all, must have the opportunity to be able to show their skills in concrete, incremental steps. To ensure what has just been enunciated there are **internships**, which, as Wikipedia (https://en.wikipedia.org/wiki/Internship) points out, are ad-hoc paths at an institution, public or private, of very variable duration, for the main purpose of learning and training, generally finalized in the entry of the job market.

The difficulty, however, lies in **finding jobs that meet the expectations** of the young people and match with their school and/or university career. There are too many cases of **internships unrelated** to the real will of the intern himself, making an important opportunity for professional and personal growth in vain, which risks, even more, to confuse the young person's ideas. Too many, moreover, are the **difficulties of accessing** a congruent, single list of proposals that is not redundant and/or scattered among heterogeneous channels. We, the creators of PlaDat, were the first to encounter these difficulties during our university studies and were the first to see **a concrete need** for them, a need confirmed by our fellow students and by students from different faculties. In this context **we would like the Bicocca University of Milan** (https://www.unimib.it/), as a young university attentive to the needs of its members, to **fund our project**, which is why in our study we will consider it as the one commissioning the project.

This is where PlaDat comes in: a **facilitator for bringing the two worlds together**. There are a number of platforms with similar purpose to PlaDat, but they are often outdated, complex, difficult to use or have little educational offerings. Often, moreover, these web apps encapsulate only **corporate** internships, excluding the whole slice of the market related to **teaching and research at public institutions**, an aspect that is often underestimated, but of fundamental importance for a growing country and for young people who want to approach this reality.

PlaDat, therefore, proposes itself as a **single point of access for students of various levels to the world of work**, a platform that sees on one side students and on the other HR, for selection by private companies, and professors, for selection by research canters and universities. In Pladat:

- **Institutions** will, therefore, have the chance to make themselves known, showcase their opportunities and attract the brightest students by viewing applications and updating their status.
- **Students**, on the other hand, will be able to find offers that best suit their needs, train, grow and take their first steps into an unfamiliar world, all through a platform that highlights the key lines of their profile. They will, in addition, be able to make themselves known, showcase their skills and, why not, find future work.

Finally, the platform will make it possible to **keep track of the evolution of applications,** taking users all the way to the first contact; after the latter, it will be up to the interested parties to do their best to convince themselves and begin a joint path.

Pladat was created by **students for students**.

Stakeholder identification

A crucial and **preliminary** aspect to any **elicitation plan** (set of knowledge extraction techniques) is the **identification of stakeholders**. The stakeholder, according to the Project Management Institute (PMI - https://www.pmi.org/) is an individual, group, or organization, who may affect, be affected by, or perceive itself to be affected by a decision, activity, or outcome of a project. In PlaDat we identify **eight stakeholders**, starting from funders to users down to those who have minimal interest with the platform. We go, then, to define stakeholders based on their interest, role, skills, and power over the project, remembering that if successful, **it will be the Bicocca University, through its organs, that will commission and manage the project**:

- **Internship Office**
  The **internship office** is the body within the university that is **responsible for the regulation and management of curricular and extracurricular internships** within the university. It communicates with:
  - **Students** for bureaucratic management of the relationship and to resolve issues as first-level Help Desk in the use of PlaDat.
  - **Lecturers** for the bureaucratic management of the relationship in case of research internships and to resolve issues as first-level Help Desk in the use of PlaDat.
  - **HR recruiters** for the bureaucratic management of the relationship in case of in-house internships and to resolve issues as first-level Help Desk in the use of PlaDat.
  - **Student Services staff** for coordination related only to internship aspects.
  - **Development Team** for coordination in the implementation of the platform.
  - **Data Protection Authority** in case of problems with the processing of users' personal data.

  Being the main coordinating body of the internship**, it is the funder**, on behalf of the university, of PlaDat and must be treated with an eye to it since, a lack of funding, would lead to the **failure of the project**: **economic decisions** with respect to the platform fall to him.
- **Student Services staff**
  The **student services staff** are the organs of the university that **deal with issues that occur during students' university journey**. They communicate with:
  - **Students** for first-level Help Desk aspects related to the use of PlaDat and to assist them in organizing the internship.
  - **Internship Office** for coordination related only to internship aspects.

  Being a student support organization, they oversee communications with students and are, for this reason, one of the **main promoters of the platform**; however, they cannot be considered a stakeholder that could make the project fail, but it could slow down its dissemination.
- **Students**

The **students** are those **who will use PlaDat** to search for curricular and extracurricular internships. They communicate with:

- **Internship office** for internship-related bureaucratic purposes and to solve simple problems in using PlaDat.
- **Student service staff** for help in organizing the internship and solving simple problems of using PlaDat.
- **HR recruiters** for recruitment purposes in case of internships in companies.
- **Lecturers** for recruiting purposes in case of search routes and to agree on an appropriate training plan.
- **Development team** to solve complex problems of using PlaDat.

Since they, along with Lecturers and HR recruiters, they constitute the **end users of the platform**, they are to be **consulted and kept informed** as the project evolves to gather feedback and incrementally improve it according to their needs. Failure to pay adequate attention to their tastes and needs could result in the **later failure of PlaDat**: their non-use of the web application would imply its futility. In fact, PlaDat was created precisely around their needs, to support them in choosing an internship that is stimulating and in line with their expectations.

- **Lecturers**

  The **lecturers** are those who represent **research institutions and universities in the selection** of students; the use of PlaDat would facilitate, to them, the initial aspects of selecting good candidates. They communicate with:

  - **Students** for recruiting purposes in case of search routes and to agree on the training plan.
  - **Office stage** for the bureaucratic management of the relationship in case of in-house internships and to resolve simple problems in using PlaDat.
  - **HR recruiters** to collaborate in choosing the teen's educational plan during the internship period and to receive description of some opportunities to be exhibited during classes related to the content of the proposal.
  - **Development team** to solve complex problems of using PlaDat.

  Since they, along with HR recruiters and students, are the **end users of the platform**, they are to be **consulted and keep informed** during the evolution of the project to gather feedback and improve it incrementally according to their needs. Failure to pay adequate attention to their tastes and needs could lead to a **subsequent failure of PlaDat**: their non-use of the web application would imply a scarce amount of proposals for students to submit, which would reduce the variety of choice and, cascadingly, dissatisfaction on the part of students with internship proposals, an aspect that should counteract PlaDat. In addition, faculty, **represent the part of educational offerings related to public research**, a lack of them would restrict the part of the market chosen by students whose interest is to make a career in that field. Lecturers, moreover, are strong promoters for PlaDat as they will **often be the promoters** of the same to the parties.

- **HR recruiters**

  The **HR recruiters** are responsible for **hiring new candidates for companies**, representing the company within PlaDat. Using PlaDat allows recruiters an easier selection of good candidates. They communicate with:

  - **Students** for recruitment purposes.

- **Lecturers** to collaborate in choosing the teenager's educational plan during the internship period and to ask for "sponsorship" of the opportunity during classes related to the content of the proposal.
- **Internship Office** for bureaucratic purposes and in case of simple problems in using PlaDat.
- **Development Team** in case of problems with using PlaDat.

Since they, along with Lecturers and students, are **the end users of the platform**, they are to be **consulted and kept informed** as the project evolves to gather feedback and incrementally improve it according to their needs. Failure to pay adequate attention to the tastes of HR recruiters and their needs could result in a **subsequent failure of PlaDat**: their non-use of the web application would imply a scarce amount of proposals for students to submit, which would reduce the variety of choice and, cascadingly, dissatisfaction on the part of students with internship proposals, an aspect that should counteract PlaDat. Moreover, HR recruiters, represent **the part of the educational offerings related to private companies**, a lack of them would restrict the part of the market chosen by students whose interest is to make a career in that sector.

- **Data Protection Authority**

  The **Data Protection Authority** is an independent Italian administrative authority established to ensure the **protection** of fundamental rights and freedoms and respect for dignity in the processing of **personal data**. It communicates, where appropriate, with:

  - **Internship Office** in case of problems with the processing of users' personal data.
  - **Development team** in case of problems with the processing of users' personal data.

  Since it is a guarantor body and external to the reality in question, it **has no interest in either the failure or success of the project**, it simply ensures that the personal data of users (faculty, hr recruiters and students) are respected. As a result of what has been pointed out, it is not to be consulted for application implementation aspects, but it is to be taken into consideration: should any regulations related to its perimeter be violated, it **could intervene, causing PlaDat to fail**.

- **Development Team**

  The **development team** (we) is the stakeholder that provides the **skills for the implementation** of PlaDat. It is responsible for the proper implementation of the application requirements and for meeting all the heterogeneous needs of the stakeholders, however difficult it may be. It communicates with:

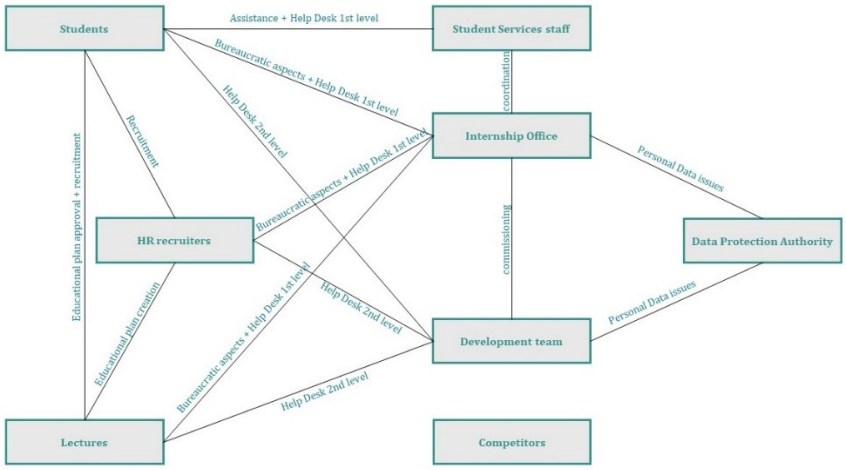
  - **Students** to resolve issues as a second-level Help Desk.
  - **Lecturers** to resolve issues as a first and second-level Help Desk.
  - **HR recruiters** to resolve issues as a second-level Help Desk.
  - **Data Protection Authority** in case of issues with users' personal data management.
  - **Office stage** for coordination in the implementation of the platform.

  Being the stakeholder who designs the application, **it is the basis of its success**, his knowledge and ability to pander to the needs and meet the standards will ensure, or not, its growth. A team composed of junior, creative and innovative, and senior, experienced

and meticulous figures could be a good compromise to ensure the success of the application.

- **Competitors**
  The **competitors** are **the rivals of our application**, entities that develop competing platforms or that, for some disparate reason, hold back the success of the project. By this term, then, we group all stakeholders who have a stake in the failure of PlaDat. They are neither developers, nor funders, nor users of our project, so, certainly, they are of marginal importance, but they are to be considered: analysing their products or their criticisms **could help PlaDat to grow** and stay ahead of the curve. Importantly, observing their platforms allows us to gain useful information to improve our web app: in the background study of the elicitation plan, some of them will be analysed.

Importantly, at this stage of identifying stakeholders, we did not simply want to highlight their role within PlaDat, but also their **relationship** and the **iteration** they have, which can also positively or negatively influence PlaDat's growth.



Let us go, finally, to analyze stakeholders from a point of view of **importance in the elicitation plan**, going to personalize the **strategy**: considering the interests of stakeholders is onerous, consequently it is good to understand towards which to direct more energy. To **classify** stakeholders, we consider:

- Their **power** they have in the project.
- Their **interest** in the success of PlaDat.

Power	Interest	Strategy
High	High	They are the **most important** and must be highly satisfied.
High	Low	They are to **be kept satisfied** without filling them with information about operation.
Low	High	They are to be **kept informed and need to be consulted** regularly to understand how to make the system work.
Low	Low	He will be given **general information**.

Let us **summarize**, then, in a table the importance of stakeholders extrapolated from the analysis done earlier:

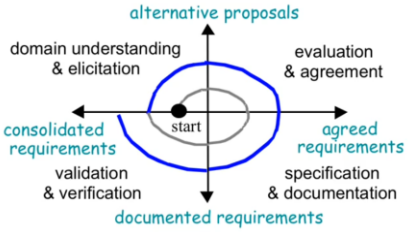
Power/Interest	High	Low

High	Internship Office e Development Team.	Data Protection Authority.
Low	Students, Lecturers e HR recruiters.	Student Services staff.

Competitors are **not summarized** in this table because they are marginal to the pure interests of the project. We can, therefore, move on to the information elicitation stage.

A short introduction to Requirements Engineer and Elicitation process

Requirements engineering is the process of **defining, documenting and maintaining requirements** in engineering design processes (https://en.wikipedia.org/wiki/Requirements_engineering), processes that attempt to solve **real-world problems**. Engineers examine a range of data about the goals and objectives of the software: how it will work and what qualities of properties it must have to achieve the design goals. Importantly, much of requirements engineering deals with the **stakeholders** or parties involved in the process, i.e., the (previously identified) stakeholders, precisely to design the system based on their needs, ensuring its success.



The **elicitation process** is the **first step** when engineering requirements, which can be defined as the **practice of researching and discovering the requirements of a system** from users, customers, and other stakeholders (https://en.wikipedia.org/wiki/Requirements_elicitation). An effective elicitation process is important for product teams to realize the following **benefits**:

- **Lower project costs** by catching requirements problems before development begins,
- **Increase the likelihood** that users and customers get what they want,
- **Reduce the risk of project failure**,
- ...

It is important, in any case, to **preliminarily analyze** stakeholders, objectives, competitors, and the application domain, all to engage stakeholders only after they are properly prepared and thoroughly understand how to interact with them to **properly elicit information** from them. We will enter, next, into the details of what processes and elicitation methods we used for PlaDat.

Our workflow

Having reached this point, having analyzed stackholders and having contextualized the meaning of elicitation, we can move on to describe the PlaDat workflow:

1. The first step we will carry out is a background study to understand the context in which PlaDat fits. This is preliminary to the actual interaction with stakeholders to ensure we have useful knowledge, as previously explained, to gather contextualized feedback and

outline an initial set of requirements. In this section, in fact, we will analyze the main competitors of our platform, attempting to extrapolate the requirements that best relate to the system. Also, since PlaDat needs to be funded by the Bicocca University of Milan, we will attempt to derive preliminary information about the organization and analyze the domain in which our web-app fits (standards, ...). In brief:

a. We will analyze the competitors, the domain as a whole and the organization (Bicocca University of Milan),
b. We will draft an initial set of functional and non-functional requirements.

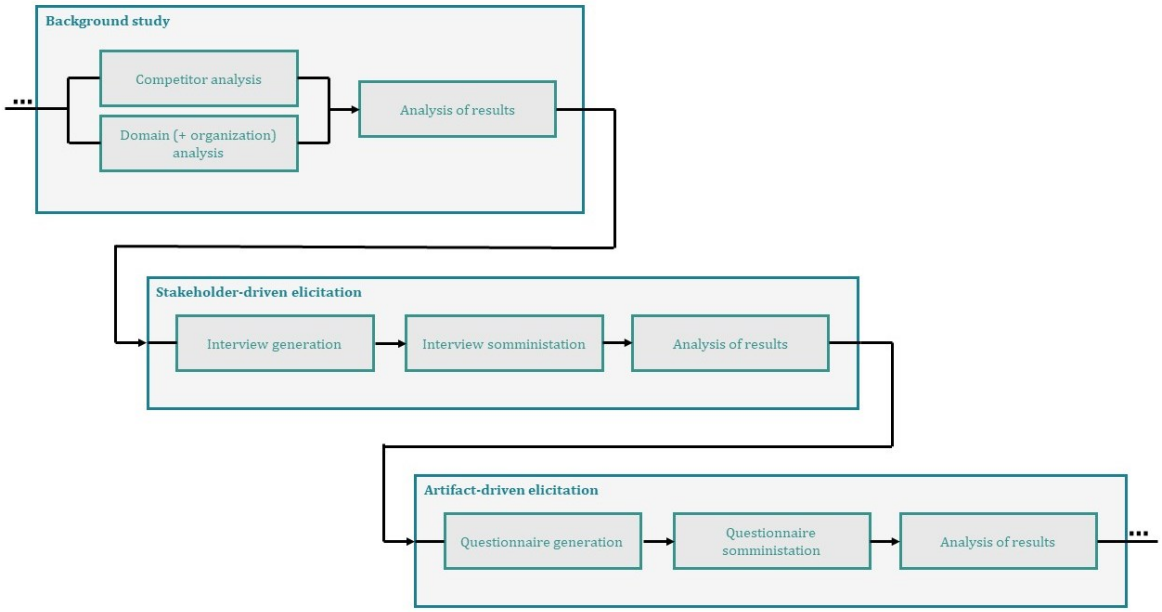
By analyzing the stakeholders, in the previous step, we were able to assign them a priority, which, in this second step, comes in handy. Interacting with them, in fact, is very onerous and complex; consequently, we are going to interface only with those who possess a higher priority, inherent to the project, and, in particular, for the PlaDat analysis, due to timing issues, we will limit ourselves to HR recruiters and university students. In this way, among other things, we will limit contradictory information and communication obstacles that might arise from listening to stakeholders with lower priority.

2. The second step we will carry out will be the creation, administration and analysis of an HR recruiter interview, a stakeholder-driven technique that uses iteration with stakeholders as the main elicitation tool. The idea is to be able, through a meeting, in our case semi-formal, to confirm and extract information necessary to create an application useful for collecting contextualized candidate data, with the purpose of assessing their profile. Since recruiters, in fact, will be the ones to request the students' information for the purpose of initiating the training, we thought of submitting the interview prior to the generation of the student questionnaire, so as to customize the latter according to the needs of human resources. The core functionality of PlaDat will, in fact, be strongly dictated by the needs of the latter, while from the students we will extract information more related to user-experience.
   The rationale for using interviewing as an elicitation technique for this activity lies in the need to ensure more discussion about the PlaDat domain, thanks to a mix of structured interviewing, in which we will submit specific questions generated by the background study, and unstructured interviewing, to gather insights from us that are not evaluated, which we could not do through a questionnaire. In brief:
   a. We will create the structured interview part based on the background study,
   b. We will administer the interview (not conducted as a two-person group),
   c. We will analyze the results of the interview to draw requirements from it (not done as a two-person group).
3. The third step we will carry out will be the creation, administration and analysis of a questionnaire to be submitted to students, an artifact-driven technique that uses artifacts as the main elicitation tool. The idea is to be able, through closed-ended questions, to confirm and extract information needed to create a student-friendly application. Since the latter will be the ones to actively use the platform that is, among other things, built around their needs, we thought of customizing the user-experience precisely according to them. Moreover, it will always be the students who will have to provide the data necessary for selection, which is why they will be asked questions about how to do it (note the "how to do it," not what to administer that has, instead, already been selected by the HR recruiter interview).

The rationale for using the questionnaire as an elicitation technique lies in the need to target questions to a large pool of students, in order to be able to get feedback for PlaDat customization that is the result of the opinion of a large number of people, which is not possible with the interview. In addition, by using this technique, we have the opportunity to submit questions whose answers leave no room for interpretation, due to the inherent objectivity of the questionnaire, allowing us to draw more concrete and contextualized information given the heterogeneity of the students. In brief:

a. We will create the questionnaire based on the background study and interview,
b. We will administer the questionnaire (despite being a two-person group),
c. We will analyze the results of the interview to draw requirements from it (even though we are a two-person group).

We will summarize the steps just described in a diagram:



!: We preferred, although it was not required, to prepare both an interview and a questionnaire to get as close as possible to a real case.

Background study

As previously highlighted, the background study allows us to understand the domain in which PlaDat operates, to ensure we have the useful knowledge to interface with stakeholders, understand the goals of the application and extract the first requirements. Moreover, we use it, in our case, to go and learn about the reality that should, if all goes as planned, fund the project, namely the University of Milano Bicocca.

Let us begin by re-emphasizing the basic features and purpose of PlaDat. PlaDat was created as a facilitator to unite the corporate world and the student world, an access point for students to the working reality. The web app sees on one side the students and on the other side HR recruiters, representing private companies, and faculty, representing research centers, who are to offer training internships to the students. As outlined in the objectives, in PlaDat:

- Institutions have a chance to make themselves known, show their opportunities and attract students,

- Students can find the offers best suited to their needs, train, grow, and take their first steps in an unfamiliar world, all through a platform that highlights the key lines of their profile.

Finally, the web-app makes it possible to follow the evolution of applications, accompanying users up to the first contact. The field of students who can take advantage of the platform, however, although ideally very broad, in this first release the application is restricted, as already pointed out, to Bicocca students only, as an eventual funder of PlaDat.

After re-contextualizing PlaDat, we turn to an analysis of the Competitors. During the background study we found two main competitors of PlaDat: Tutored (https://www.tutored.me/) and the internship portal of Bicocca University in Milan (https: https://s3w.si.unimib.it/).

- Tutored is the digital meeting point between university students, recent graduates and companies. The community consists of young people who get in touch with the companies active on the platform and start their professional careers. Ads for entry level positions and internships, smart webinars, challenges and coding battles are the content that companies create on Tutored to attract and hire the best college talent. To date, Tutored is primarily a leading recruiting and employer branding app, collaborating with more than 250 companies; but it does not only support the job placement of students and recent graduates: it also offers numerous informative webinars, organized in collaboration with companies and professionals from the world of work, and educational masterclasses, useful for acquiring basic skills and knowledge required by the job market. Information taken from:
    - https://opportunita.tutored.me/tutored-come-funziona,
    - https://www.linkedin.com/company/tutored/,
    - https://www.luniversitario.it/2021/05/07/tutored-al-passo-coi-tempi01/.

- Internship Portal is a portal through which Milano Bicocca University provides support to registered students who want to activate a curricular internship. This platform allows the search of offers from companies registered and affiliated with the university and the application and them by the student. Information taken from:
    - https://www.unimib.it/servizi/stage-e-tirocini/stage-e-tirocini-curriculari;
    - https://www.unimib.it/servizi/bicocca-orienta/servizi-orientamento/stage-e-tirocini/studenti/ricercacandidatura-offerte-stagetirocinio.

Pladat has a role that lies somewhere between the two platforms: as functional as Tutored, but as simple as the Internship Portal. As already highlighted:

- It allows searching and applying for curricular and extracurricular internships,
- Has a simple functional student-friendly interface,

- Is accessible via university account,
- It manages research and external internships in the company.

Let us, at this point, go through an initial list of functional requirements drawn from the background study, i.e., requirements indicating PlaDat's functionality or services, i.e., the inputs and outputs of the system.

To document the requirements we use natural language, which allows infinite expressions to be defined, but restricted, to reduce ambiguity, by using local rules. With this in mind, we created an ad-hoc template for the requirements in our document.

ID	Unique requirement identifier consisting of typeRequirement-functionality-typeUser.
Type	Functional requirement/Non-functional requirement.
Description	Description of the requirement.
Priority	Priority in implementation (High/Medium/Low).
To Verify	Indicates whether an aspect or the requirement in its interest are to be subjected to direct elicitation with stakeholders (Yes/No).

List of **functional requirements**:

ID	Functional-Login-GenericUser
Type	Functional Requirements
Description	Users must be able to log into the application.
Priority	High
To Verify	Yes, ask students for access preferences.

ID	Functional-Registration-Student
Type	Functional Requirements
Description	Students must be able to sign into the application.
Priority	High
To Verify	Yes, ask recruiters for the data needed to analyse the student profile.

ID	Functional-Registration-Recruiter
Type	Functional Requirements
Description	Recruiters must be able to sign into the application.
Priority	High
To Verify	No

ID	Functional-UpdateProfile-Student
Type	Functional Requirements

Description	Students must be able to update their profile.
Priority	Low
To Verify	No

ID	Functional-UpdateProfile-Recruiter
Type	Functional Requirements
Description	Recruiters must be able to update their profile.
Priority	Low
To Verify	No

ID	Functional-ViewProfile-Student
Type	Functional Requirements
Description	Students must be able to view their profile.
Priority	Middle
To Verify	No

ID	Functional-ViewProfile-Recruiter
Type	Functional Requirements
Description	Recruiters must be able to view their profile.
Priority	Middle
To Verify	No

ID	Functional-DeleteProfile-Student
Type	Functional Requirements
Description	Students must be able to delete their profile.
Priority	Middle
To Verify	Yes, ask students if they need time to reconsider.

ID	Functional-DeleteProfile-Recruiter
Type	Functional Requirements
Description	Recruiters must be able to delete their profile.
Priority	Middle
To Verify	Yes, ask recruiters if they need time to reconsider.

ID	Functional-ViewOtherProfile-Student
Type	Functional Requirements
Description	Students must be able to view recruiter-profiles.
Priority	Middle

To Verify	Yes, ask students if they want to see data in a structured format.

ID	Functional-ViewOtherProfile-Recruiter
Type	Functional Requirements
Description	Recruiters must be able to view student-profiles.
Priority	Middle
To Verify	Yes, ask recruiters if they want to see data in a structured format.

ID	Functional-SearchOffers-Student
Type	Functional Requirements
Description	Students must be able to search offers.
Priority	High
To Verify	Yes, ask students what kind of filter they want to have.

ID	Functional-ViewOffer-Student
Type	Functional Requirements
Description	Students must be able to view the information of an offer.
Priority	High
To Verify	Yes, ask students if they want to see data in a structured format.

ID	Functional-ViewOffers-Student
Type	Functional Requirements
Description	Students must be able to view which offers they applied and the status.
Priority	High
To Verify	No

ID	Functional-ApplyOffer-Student
Type	Functional Requirements
Description	Students must be able to apply to an offer.
Priority	High
To Verify	Yes, ask students if they want automatic CV generation and recruiters what data are needed from students.

ID	Functional-CreateOffer-Recruiter
Type	Functional Requirements

Description	Students must be able to apply to an offer.
Priority	High
To Verify	Yes, ask students what data they want to have on the offer.

ID	Functional-ViewOffer-Recruiter
Type	Functional Requirements
Description	Recruiters must be able to view the information of an offer and who applied.
Priority	High
To Verify	Yes, ask recruiters if they want to see data in a structured format.

ID	Functional-ViewOffers-Recruiter
Type	Functional Requirements
Description	Recruiters must be able to view their offers.
Priority	High
To Verify	No

ID	Functional-UpdateOffert-Recruiter
Type	Functional Requirements
Description	Recruiters must be able to update their offers.
Priority	Low
To Verify	No

ID	Functional-CloseOffer-Recruiter
Type	Functional Requirements
Description	Recruiters must be able to close their offers.
Priority	Middle
To Verify	Yes, ask students if recruiters have to give answers before closing offers

ID	Functional-UpdateStatus-Recruiter
Type	Functional Requirements
Description	Recruiters must be able to update the status of a student's application.
Priority	High
To Verify	No

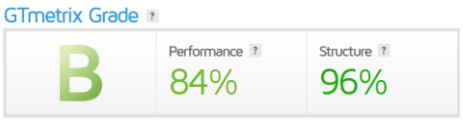
In addition, analyzing the competitors from a performance-related perspective, we studied the performance and SEO, i.e., the set of strategies and practices aimed at increasing visibility in

search engine rankings, of the two platforms. To do this, we used an ad-hoc web-app, namely GTmetrix (https://gtmetrix.com/), one of the most popular tools for analyzing a site's performance. The result of the analysis is a GTmetrix grade, an assessment of the overall page performance. It reflects, both, how fast the page loaded for users, and how well it's built for performance, based on indicators drawn from:

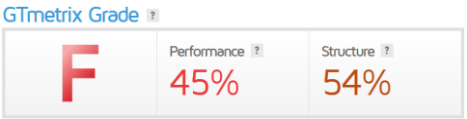
- Google's speed score: PageSpeed,
- Yahoo's speed score: YSlow,
- the full page load time,
- the total weight of the page,
- the number of requests.

The result was as follows:

- Tutored



- Internship Portal



The results are strongly different, but to be competitive in the market, we decided that the performance in our site must exceed or equal a GTmetrix grade equal to B, equal to the highest grade obtained by the two sites.

At this point, since PlaDat is placed in a European context, we focused on analyzing the current standards. From this study, the European standard 2016/679, namely the General Data Protection Regulation (GDPR - https://www.garanteprivacy.it/regolamentoue), stands out. It establishes strict global privacy requirements for companies offering services in the EU, regulating how individuals' personal data are processed and protected. Simply put, it states that individuals' choices with respect to their own data must be respected, regardless of where it is sent, processed or stored. In PlaDat, therefore, we must comply with all the standards required by GDPR (*there are many, we will include a few*):

- Data saved using high cryptographic standards such as AES-256,
- Access to the site via HTTPS, which reduces the risk of data theft if the transmission is intercepted,
- Network infrastructure must be redundant to ensure operation in case of failure.

Finally, we collected and analyzed some aspects that our platform must have in order to ensure high quality standards:

- Accessibility
  Accessible software is software that runs independently of the hardware system in use. Web-apps such as PlaDat break down this barrier as they are independent of the underlying physical system and reachable from all devices with Internet access. The only problem is related to the obsolescence of devices and the screen size of those devices; to

overcome this, the web-app will have to be responsive, i.e., structured in such a way that it adapts to any type of screen. Information taken from:

- https://www.w3.org/standards/webdesign/accessibility.

- Availability, scalability and security
  - Availability
    Availability refers to the ability of a system to cope with any interruption and to process information continuously. Availability represents the amount of time the system remains online relative to the total time. Information taken from:
    - https://it.wikipedia.org/wiki/System_availability.
  - Scalability
    Scalability denotes the ability of a system to scale up or down resources as needed and available. Going into the term technically, we refer specifically to load scaling, which is the ability of a system to increase its performance if the demands on that system increase. Information taken from:
    - https://en.m.wikipedia.org/wiki/Scalability.
  - Security
    Secure software is software structured in such a way as to decrease vulnerabilities, i.e., among other things, storing data properly and in line with GDPR (explained above). Information taken from:
    - https://www.cybersecurity360.it/soluzioni-aziendali/la-sicurezza-informatica-nello-sviluppo-del-software-le-buone-regole-da-seguire/.

  The application must, therefore, be developed using cloud-computing principles (https://it.m.wikipedia.org/wiki/Cloud_computing), which:
  - Ensures high availability since an application is often located on multiple servers in different data centers around the world. This approach makes it possible to keep the application available no matter what, even in the event of unpreventable disasters at the locations where the data centers are located, but also easily accessible remotely at any time and from any place.
  - Ensures high scalability as, in case of peaks in processing capacity or rapid increase in resources, leveraging automated systems such as Kubernetes, a portable, extensible and open-source platform for managing containerized workloads and services.
  - Ensure high system security as they usually implement based on the latest security, encryption and threat prevention standards.

  Authentication management systems should also be provided to ensure continuous (usability) and secure use of the platform.Andiamo, a questo punto, a stilare un primo elenco di requisiti non funzionali tratti dal background study, ovvero requisiti indicanti le i vincoli e le proprietà caratteristiche di PlaDat.

To do this we use, once again, the previously introduced template.

List of **non-functional requirements**:

ID	NonFunctional-Performance-GTmetrixGrade
Type	Non Functional Requirements
Description	To ensure competitiveness and performance, the application must exceed or equal GTMetrix grade B.

Priority	Middle
To Verify	No

ID	NonFunctional-Compliance-HTTPS
Type	Non Functional Requirements
Description	To align with the European GDPR standard, PlaDat must provide access via HTTPS.
Priority	High
To Verify	No

ID	NonFunctional-Compliance-AES256
Type	Non Functional Requirements
Description	To align with the European GDPR standard, PlaDat must provide AES-256 symmetric data encryption.
Priority	High
To Verify	No

ID	NonFunctional-Compliance-Redundancy
Type	Non Functional Requirements
Description	To align with the European GDPR standard, PlaDat must have the data rooted on at least two servers.
Priority	High
To Verify	No

ID	NonFunctional-Accessibility-Responsive
Type	Non Functional Requirements
Description	To ensure adequate accessibility, I create software that is responsive for the devices that will be used.
Priority	High
To Verify	Yes, ask students and recruiters what devices they access from and what browsers they use.

ID	NonFunctional-Accessibility-DistributedSystem
Type	Non Functional Requirements
Description	The at least two servers defined by the NonFunctional-Compliance-Redundancy requirement must be deployed in two different locations to avoid the problems associated with disasters.
Priority	Middle
To Verify	No

ID	NonFunctional-Availability-LoadBalancing
Type	Non Functional Requirements
Description	To ensure adequate availability, we need to create software that rests on Kubernates.
Priority	Middle
To Verify	No

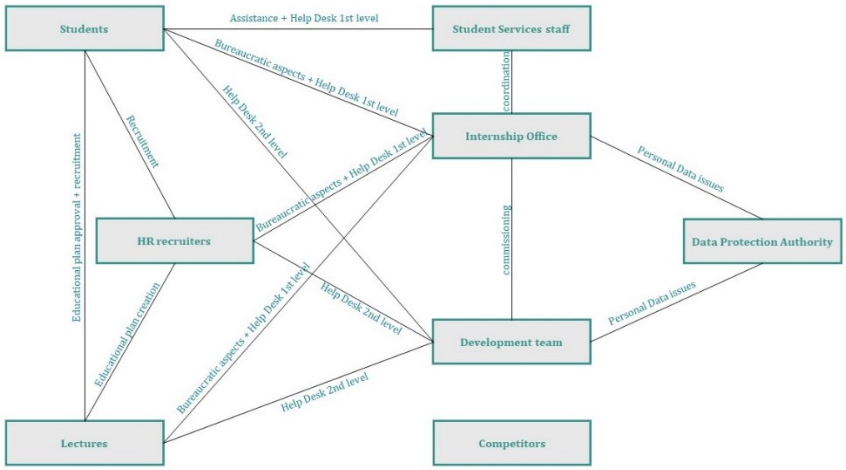
ID	NonFunctional-Usability-SessionAuthentication
Type	Non Functional Requirements
Description	To ensure adequate usability, we need to create software that makes statefull HTTPS for authentication.
Priority	High
To Verify	No

As a last aspect, we analyze the organization to which we propose funding, the same one in which we launch the first version of PlaDat. The University of Milano Bicocca is an Italian state university founded in 1998 that was founded with a specific mission, as the LinkedIn description says, to make research the strategic foundation of all institutional activity. Today, the University of Milan-Bicocca is a multidisciplinary university that trains professionals in different fields: economic-legal, scientific-technological, medical, sociological-statistical, psychological and pedagogical.

Information taken from:

- https://it.linkedin.com/school/university-degli-studi-di-milano-bicocca/;
- https://it.wikipedia.org/wiki/Universit%C3%A0_degli_Studi_di_Milano-Bicocca.

To understand the context and who we will need to interface with in the organization, we analyzed the stakeholders and their iterations, which can be summarized in the following table (*already presented*).



It is important to point out that the mission and organization as a whole of the University of Milan Bicocca are to be strongly considered since PlaDat, as repeatedly stressed, will fit into this reality. Since we want, moreover, to obtain funds from the university, we have decided to administer a questionnaire to students that will, among other things, allow them to convince Bicocca to invest monetary resources on the basis of the concrete interest of its members. The questionnaire, then, has as a secondary

objective to probe the needs, not extracted from the background study, of its users: the students. This elicitation technique was selected because of the need to receive extensive but structured feedback that is not free to interpret. On the other hand, with regard to the requirements analysis whose direct stakeholders are the recruiters, we will use an interview mode to allow for greater customization and gather ample useful insights.

Stakeholder-driven elicitation: the interview

Estrapolare da background tabelle e chiere quale dati necessari studenti + lasciare spazio finale aggiunte

Artifact-driven elicitation: the questionnaire

Dire

- Anonimo ma email
- Scadenza 26/11/2022 00:00
- Perch ms form
- Domande contrarie
- Data possibilità scaricare risposte
- 4 risposte perdoman
- Che fatto domande per fare vedere all'università l'interesse degli studenti in un nuovo portale