Faculdade de Engenharia da Universidade do Porto

U.PORTO

FEUP **FACULDADE DE ENGENHARIA**
UNIVERSIDADE DO PORTO

LUNI

Phase 1 Report - User and Task Analysis

Group 3LEIC09G1

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Índice

Project's idea description

LUNI aims to be the end-all-be-all platform for library related activities in FEUP.

As students of the university, when we were confronted with the challenge to design an app directed at FEUP students' necessities several ideas came to mind. One of the first discussed topics amongst the group was the parking lots, an idea quickly surfaced of creating some way for students and staff to be able to quickly decide where to park their car and help them find a spot. Thereafter an idea for a platform uniting FEUP's cantine and its 2 bars was discussed, the goal was to gather up all of the information on available menus, items, prices, and even order food in a single place so that the community had a clean and accessible way to plan lunches around campus. However, both of these ideas fell flat, as both of them seemed too simple and, as a group, we did not see ourselves using our very own products, that's when the LUNI project started to gain its form.

LUNI is a mobile and web application gathering all the information and activities necessary to efficiently and comfortably use all of the library's resources. It gives users real time information about the occupancy of rooms as well as individual sitting spots on the many library's floors and tables, this functionality aims to help visiting students find a comfortable place to sit without having to search each floor of the building, which is not only exhausting but might also disturb other students. Another key feature of LUNI is its emphasis on prioritizing the user's needs above all else, as such not only does it offer the opportunity to check on book availability and make reservations it also selects books according to the users currently attending units, however, the commitment to spread awareness for the benefits of consulting books doesn't stop there as there is also an online shop for them. However, and as we will discuss further on, there are more facets of the space that are many times forgotten mainly its events, in an effort to spread more awareness about them and deliver more news related to activities occurring in FEUP, there will also be a page advertising ongoing events and other library specific announcements.

Related apps/services/systems

When analyzing the currently available market of library related apps we did not find any that truly took this topic in the same vein that we are trying to, therefore we took as our guidelines and competitors 2 closely related systems with FEUP's library. The first one being the library's very own website, an obvious choice for this project's theme and goals, and UNI, a student developed mobile application which already gathers several of the university's most important services.

FEUP's library website: a simple website for the SDI services.

Pros	Access to a very big database filled with resources provided directly by the university;
Cons	Outdated interface which is hard for new users to get to grips with; Lack of real-time information, mainly the number of vacant places; Difficulty in finding physically available books and papers;

UNI: an app developed by NIAEFEUP with the goal of providing easy mobile access to some of FEUP's services.

Pros	Very big user base within FEUP; Already uniting multiple facets of the services necessary for the students in a single place;
Cons	Outdated interface which is hard for new users to get to grips with; Lack of real-time information, mainly the number of vacant places; Difficulty in finding physically available books and papers;

Questionnaire

After leaving the questionnaire open for answers for about 1 week, sharing it within group chats, and asking for answers in person, a total of 17 people responded to the Google Forms.

The demography that was consulted was pretty homogenous, consisting of, in its majority, male students all of which with ages ranging between 19 and 20 and attending the 3rd year bachelor's from the L.EIC/M.EIC course [figures 4, 5, 6 and 7 of the Annex]. We are aware of how this may skew our general perception of our real user base that would encompass the entirety of FEUP's community, especially taking into account the small sample size.

When questioned about their personal experiences with the library's services the replies revealed that there were several different types of habits. Whilst it's almost unanimous that the services are accessible and that the most common activity in the library was studying and using the computers, the frequency of attendance to the library was not so straightforward. About one-third of enquirees use the library sporadically a few times during a month, while another third visit it once a week and only a quarter never attend it, with the remainder 1 answer claiming to use it multiple times per week. Events proved to be absent from all of the answerers' visits to the library with most of them pointing out a lack of interest and a lack of awareness of these events as the causes of not attending them. Still, in this section, we were able to understand that the majority of the people did not read or consult the literature required by their units as it didn't seem necessary or there were other formats not available in the library (video, websites, …) [figures 8, 9, 10, 11 and 12 of the Annex].

Inquiring about the functionalities that we had planned and other platforms the data revealed that users are the happiest while using UNI, are comfortable with Moodle, and clearly do not like using Sigarra. For the minority of users that knew about the library's website, their experience with the website was negative. As for the relevance of the features that were planned, answers revealed a big interest in the availability of books as well as seats, whilst upcoming events proved to be not as relevant as expected [figures 13, 14, 15, 16, 17, 18 and 19 of the Annex].

With these results, we are able to, more accurately, organize our efforts in order to attend to what, at least, some of our potential users may want to see in this project. More precisely, the small number of answers that highlighted the library's events as a core part of its usage, as a student, has given us a greenlight to focus our attention on some other needs of the community, however our commitment to bringing these events to the attention of more students has not ended, while it will take a backseat in our priorities, the large number of answers that cited a "lack of knowledge" about said events have reinforced the idea that the lack of participation and knowledge about them may not necessarily stem from disinterest but rather a lack of awareness within the community's spaces. Furthermore, we will place special importance on the pages related to the library's spaces and its in-person usability. Taking a closer look at the implications related to the design and usability of the developing product, we must lean more into the practical and simple design philosophy demonstrated in UNI, which was significantly more popular than our chosen competitors, whilst trying to implement all of the rich content features present in the library's website that many are unaware of.

11 Questions

1.   Who are the users?

This application will target all of FEUP's students, despite our questionnaire having had an admittedly skewed demography we are able to recognize, not only as developers but also as fellow students, the necessity for this kind of services.

2.   What tasks do they perform?

Currently, the library is used mainly as a study place. A smaller sample of answers revealed that there is some usage of the library's computers.

3.   What tasks are desirable?

Our main focus will be in the book domain, search and purchase of books, and the space domain, viewing and reserving seats. We also aim to have filters for these features and that the users are comfortable and have quick access to them. We will also give students the opportunity to consult and register in events.

4.   How are tasks learned?

Tasks are learned through repeated use of the application and are also inherited from previous knowledge, something that we expect given the simplicity of the app.

5.   Where are tasks performed?

They may be performed in any one of these digital mediums: computer, mobile phone or tablet.

6.   What is the relationship between user and information?

Users must share some of their Sigarra information with the app, information that will not be shared with other users. Although there is still sensitive information in the app related to purchases users showed they were comfortable with digital payment methods.

7.   What other instruments does the user have?

Users are still able to visit the library in person, being able to talk to its staff, or consult the library's website.

8.   How do users communicate?

Users do not communicate within LUNI; therefore, we did not analyze this concern.

9.   How often tasks are performed?

We expect that the most common tasks are the ones related to the use of the library space, mainly reserving and searching seats, followed up by book domain's activities. Events were shown to not be as relevant as expected.

10. Are there time restrictions?

While LUNI must be fast and responsive it is not time sensitive. However, it should be noted that while actions may be performed at any time of the day, there are still restrictions that do apply, being that they are tied to the regular functioning hours of the library.

11. What happens if something goes wrong?

Failure of the system is not critical, while it might be undesirable, users may always visit the library in person.

Personas

In order to create a profile of our potential user base we created 3 personifications of people with goals that encompassed the ones highlighted on the questionnaire and some of the teams' goals for users that use this application. From this, 3 personas were born, Ellis, "The Out of Town Student", Lucas, "The First Job", and Maria, "The New Learner".
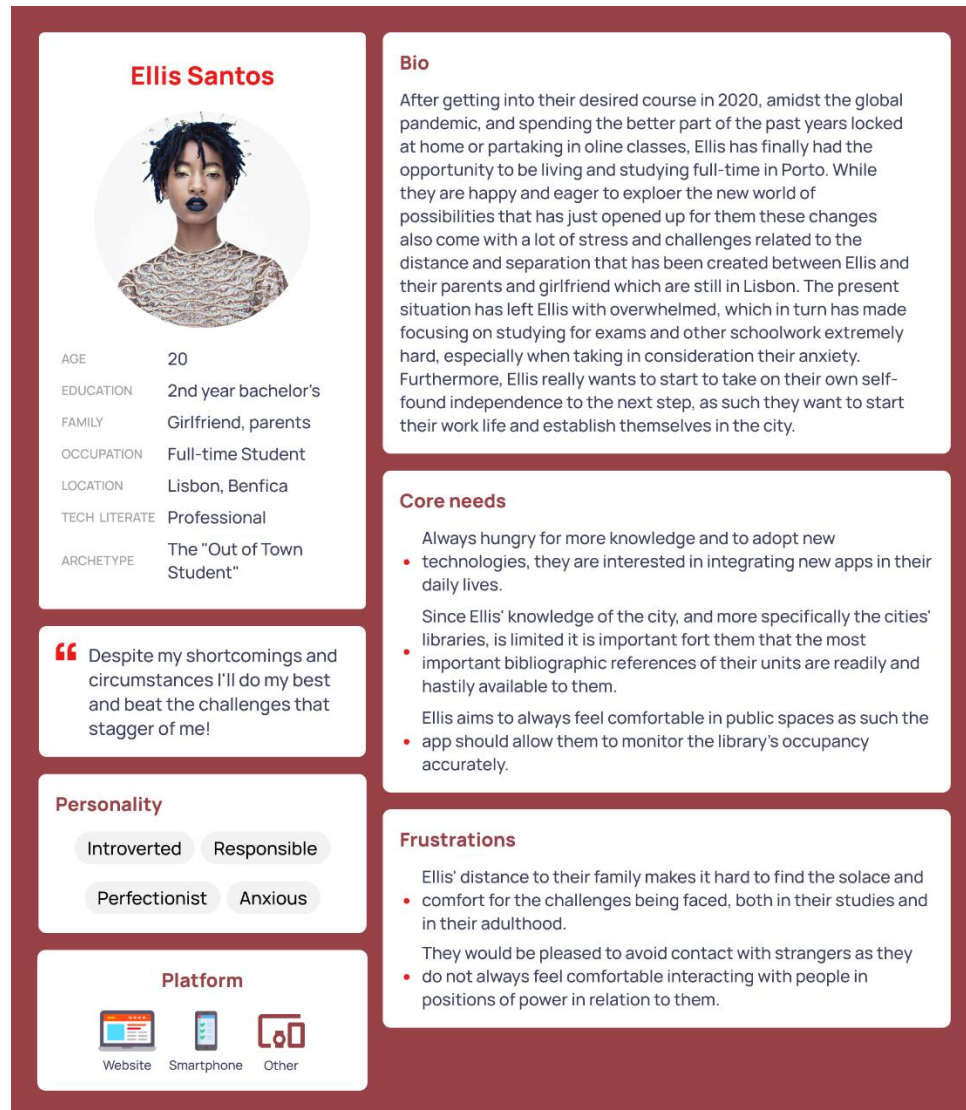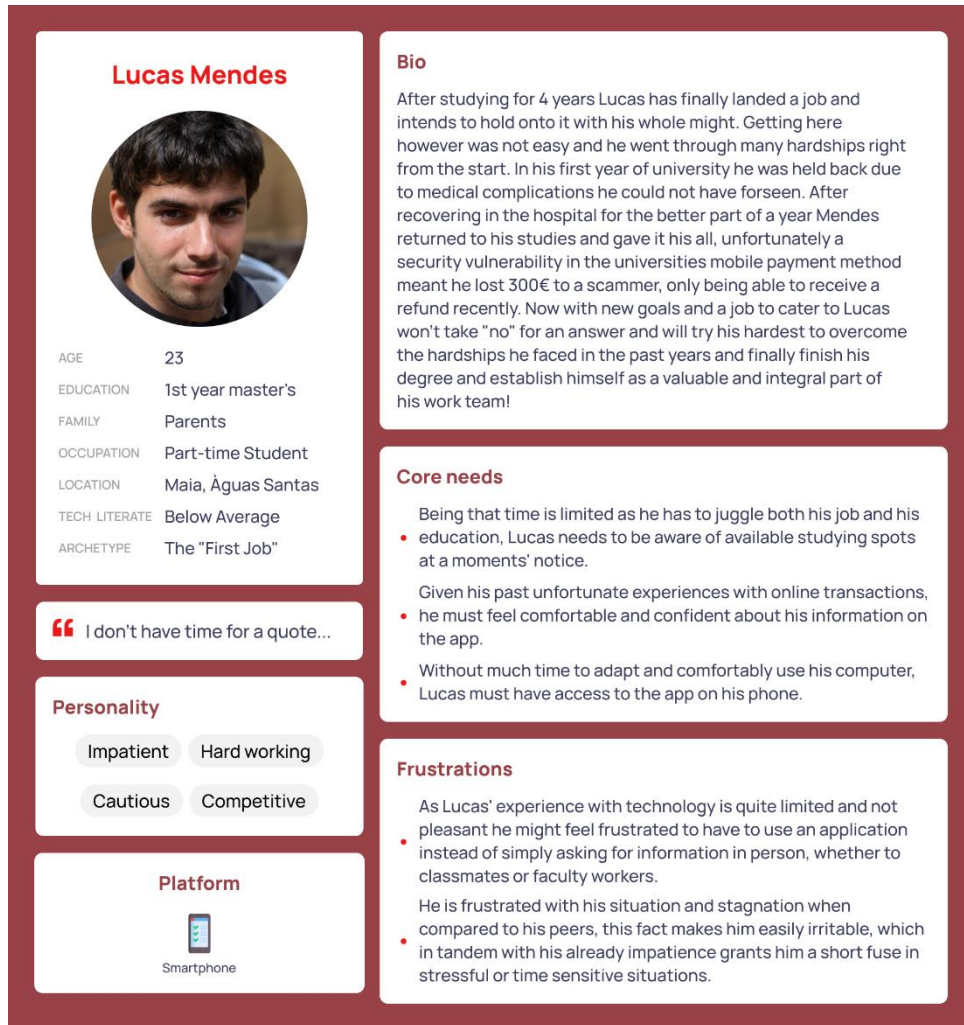

Ellis Santos

AGE	20
EDUCATION	2nd year bachelor's
FAMILY	Girlfriend, parents
OCCUPATION	Full-time Student
LOCATION	Lisbon, Benfica
TECH LITERATE	Professional
ARCHETYPE	The "Out of Town Student"

❝ Despite my shortcomings and circumstances I'll do my best and beat the challenges that stagger of me!

Personality

Introverted   Responsible

Perfectionist   Anxious

Platform

Website   Smartphone   Other

Bio

After getting into their desired course in 2020, amidst the global pandemic, and spending the better part of the past years locked at home or partaking in oline classes, Ellis has finally had the opportunity to be living and studying full-time in Porto. While they are happy and eager to exploer the new world of possibilities that has just opened up for them these changes also come with a lot of stress and challenges related to the distance and separation that has been created between Ellis and their parents and girlfriend which are still in Lisbon. The present situation has left Ellis with overwhelmed, which in turn has made focusing on studying for exams and other schoolwork extremely hard, especially when taking in consideration their anxiety. Furthermore, Ellis really wants to start to take on their own self-found independence to the next step, as such they want to start their work life and establish themselves in the city.

Core needs

- Always hungry for more knowledge and to adopt new technologies, they are interested in integrating new apps in their daily lives.
- Since Ellis' knowledge of the city, and more specifically the cities' libraries, is limited it is important fort them that the most important bibliographic references of their units are readily and hastily available to them.
- Ellis aims to always feel comfortable in public spaces as such the app should allow them to monitor the library's occupancy accurately.

Frustrations

- Ellis' distance to their family makes it hard to find the solace and comfort for the challenges being faced, both in their studies and in their adulthood.
- They would be pleased to avoid contact with strangers as they do not always feel comfortable interacting with people in positions of power in relation to them.

Figure 1

Lucas Mendes

AGE	23
EDUCATION	1st year master's
FAMILY	Parents
OCCUPATION	Part-time Student
LOCATION	Maia, Àguas Santas
TECH LITERATE	Below Average
ARCHETYPE	The "First Job"

> " I don't have time for a quote...

Personality

Impatient   Hard working

Cautious   Competitive

Platform

Smartphone

Bio

After studying for 4 years Lucas has finally landed a job and intends to hold onto it with his whole might. Getting here however was not easy and he went through many hardships right from the start. In his first year of university he was held back due to medical complications he could not have forseen. After recovering in the hospital for the better part of a year Mendes returned to his studies and gave it his all, unfortunately a security vulnerability in the universities mobile payment method meant he lost 300€ to a scammer, only being able to receive a refund recently. Now with new goals and a job to cater to Lucas won't take "no" for an answer and will try his hardest to overcome the hardships he faced in the past years and finally finish his degree and establish himself as a valuable and integral part of his work team!

Core needs

- Being that time is limited as he has to juggle both his job and his education, Lucas needs to be aware of available studying spots at a moments' notice.
- Given his past unfortunate experiences with online transactions, he must feel comfortable and confident about his information on the app.
- Without much time to adapt and comfortably use his computer, Lucas must have access to the app on his phone.

Frustrations

- As Lucas' experience with technology is quite limited and not pleasant he might feel frustrated to have to use an application instead of simply asking for information in person, whether to classmates or faculty workers.
- He is frustrated with his situation and stagnation when compared to his peers, this fact makes him easily irritable, which in tandem with his already impatience grants him a short fuse in stressful or time sensitive situations.

Figure 2

Maria Joana

AGE   18
EDUCATION   Highschool
FAMILY   Parents
OCCUPATION   Full-time Student
LOCATION   Bragança, Samil
TECH LITERATE Average
ARCHETYPE   The "New Learner"

❝ It's time to become a new person!

Personality

Extroverted   Clumsy

Cheerful   Kind

Platform

Website   Smartphone

Bio

Maria has just enrolled on her first year of university, and is looking forward to not only learn all about her course but also about her new environment. As she is from a small rural town in the interior of the country, contact with new people her own age was scarce and her current situation has presented her with the possibility to get in touch with more people and make new connections. Perhaps steming from the isolation inherent to her situation in her highschool years, Maria has developed a reasonable level of understanding of technology and is quite comfortable with any means of interacting with it.

Core needs

Since Maria is a freshman in university, the desire to meet new people and explore new relationships burns in her this means
- that it is important that Maria is able to meet with her friends in order to study efficiently and communication such information is also of her interest.

With a very active life comes a diminuishing amount of time to do
- certain activities such as reading and she will be happy to be able to prioritize the most important aspects of her library usage.

Frustrations

Despite being quite comfortable with technology, some things
- do not come to her intuitively. She will need to be able to quickly learn her away around the application.

With many eyes on her at some times she will avoid spending a
- lot of time on her devices consulting the app.

Figure 3

Activity scenarios

There were 3 activity scenarios made, one for each persona, based not only on their respective description but also on feedback from the aforementioned questionnaire. The first scenario follows Ellis and their group's struggles to finish a project, the second one stars Lucas as he must find a book for one of his course units', which he is able to accomplish using Luni, and, lastly, Maria plans to meet new people and engage more with FEUP's activities through the library, with the aid of our app.

Ellis has just returned from a weekend with their family in Lisbon. For the past 2 days, Ellis had been going around their home city visiting their extended family and hanging out with their girlfriend, for what was certainly for her not enough time. Upon returning to Porto and to her accommodation in the city Ellis is struck with the realization that an upcoming delivery has been brought forward a couple of days and their work has just been thrown completely off schedule. With this in mind, they contact their friends from their group who are also unaware of the occurrence, and quickly try to hatch a plan to be able to deliver everything they must on time. However, as this plan requires a few physical deliverables to be made the group can't simply hop on an online call and work away. Ellis quickly searches on their computer for LUNI's page and navigates to the "Availability" section. There they can check on the currently occupied rooms and tables as well as check on a prevision of the changes in occupancy in the upcoming hours. Upon figuring out that their favorite room is available they quickly book it for some time that afternoon and let the rest of their group know about it from within LUNI's interface. They are then able to meet up, finish up their project in a comfortable environment and even have some time left to hang out afterward, which always helps Ellis cool down from a very busy weekend and day.

After getting off of work for the day Lucas notices a new notification on his phone, the page for one of his units this semester has just been updated and the year's group chat is going nuts with it! The professor has declared that the previously supplementary reading has now become mandatory and that practical lessons shall be replaced by its reading. With little time to react to the news and determined to not fail the unit Lucas has no other choice but to get his hands on a copy of the book as soon as possible. While reading the messages that are flying around on his phone, he remembers that the library might have the book on its shelves or maybe even for sale. Lucas opens up the LUNI app and is greeted by several recommendations for his enrolled unit's bibliography, as he prepares to start searching the book within the database he notices it sits directly on his home screen. He is then able to confirm that is indeed the correct book for the class and immediately checks its availability, which unfortunately reveals to him that the book is currently not available, but that there are more copies on their way. Lucas quickly orders one of the copies feeling comfortable that his billing data is secured in the app and selects the option for an in-person pick up of his order. He then goes back to the group chat to advise his colleagues on what he had just done, and gloat a little about his quick thinking.

It is Wednesday morning and without any plans for the afternoon and wanting to be involved in some activities at the university Maria is asking her friends if they have any plans for the day. Whilst most of them have some sort of family issue to take care of one of her more distant friends, Mariana, points out that a book-sharing event is going on in the library. Maria sees this as an opportunity to develop her bond and takes up Mariana on her idea, who seemed pretty weary to share it in the first place. They both reach for their mobile phones and check LUNI's event tab, where they

immediately find highlighted that day's events. After reading some more about the event and even pondering on attending another one at a different university, they are able to quickly register themselves and are set for that afternoon. Maria and Mariana spend a great afternoon together talking about their favorite books, and music and getting to know each other better, by the end a strong bond has been formed.

Simplified conceptual model

Stripping down all of the UI ideas that were flowing through the team discussion we were able to build the following conceptual model, which allows us to get a better feel for what users, in essence, will be able to do in LUNI.

Objects (attributes)
- User (name, photo, courses)
- Book (title, cover, summary, status, courses, sellable, price);
- Seat (location, status);
- Location (floor, characteristics);
- Events (date, title, description, registration fee, capacity);

Actions
- Consult book status;
- Reserve, buy books;
- Recommend, get recommendation;
- Find available seat and book it;
- See events;
- Register in event;

Relations
- Book has associated status;
- Books on sale have price;
- User is enrolled in courses;
- Books have courses associated;
- User have book recommendations;
- Seat has location;
- Rooms are a group of seats;
- Location has characteristics;
- Users can register in multiple events;

Functionalities and tasks

The following are some functionalities with their respective tasks associated, we aim to give a better understanding of our idea for a user interaction with the application in this way, it helps us convey the how our ideas come to life in the user's hands and needs.

Functionalities	Tasks
Search for a seat	Search for an available seat with computer access on the third floor
Buy a book	Buy a book from a course I'm enrolled that has a price below 20€
Register in an event	Register in the spelling contest that will take place next week

Usability requirements

For each domain of activities that we have planned for LUNI we have created some requirements to fulfill its usability by a metric that we feel comfortable that the users experience without any gripes or major issues, dividing this notion into 3 realms of efficacy, "How well?", efficiency, "How fast/much effort?", and satisfaction, "How comfortable?". The scenarios present an example of what one might expect when accomplishing a task in one of each of the domains that are present in LUNI, the first one in the space domain, followed up by the books domain, and the third one the events domain.

Search for an available seat with computer access on the third floor

Efficacy	80% of the users reached an available seat in their first try
Efficiency	Average time of finding a seat with that criteria below 1 minute. Selecting third floor and computer access in 4 or less clicks
Satisfaction	Less than 15% of users unsatisfied with map display

Buy a book from a course I'm enrolled that has a price below 20€

Efficacy	If the book is available, all the users tasks should have a success rate of 96% or above
Efficiency	Average time of processing the transaction below 2 minutes.
Satisfaction	90% of the users should be pleased with the navigation system

Register in the spelling contest that will take place next week

Efficacy	The registration process has to be completed within 3 tries
Efficiency	The searching process should be possible to do with 6 or less clicks
Satisfaction	95% of the users should consider the registration process to be practical

Conclusion

These efforts have revealed that we are on the right track to build an app that feels needed and wanted by FEUP's community. Our initial goal of bringing a more welcoming way of interacting with the library digitally has been reassured, not only by the answers of the questionnaire but also our further investigation of this very issue. However, we are still mindful of some of the possible shortcomings of our project, mainly in the issues related to events.

It's important to stay aware that this is an initial procedure that does not account for the specifics of the aesthetics and UI elements of the application, it simply focuses on the building blocks that are important when tackling these other issues.

Annexes

Gender

17 respostas

- Female
- Male
- Non-binary

76,5%

17,6%
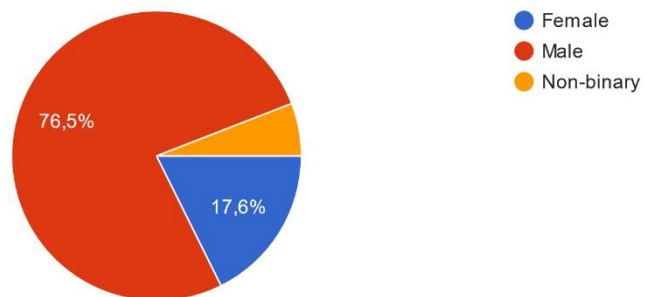
Figure 4

Age

17 respostas

- 17-18
- 19-20
- 21-22
- 23+

100%
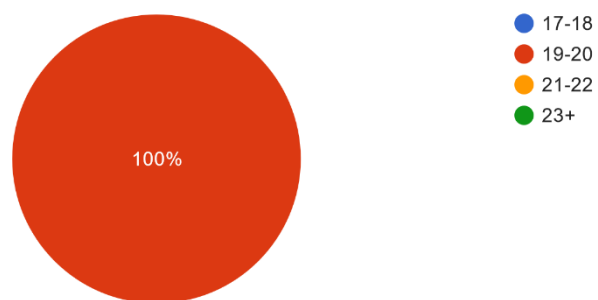
Figure 5

Currently attending year

17 respostas

- 1st year bachelor's
- 2nd year bachelor's
- 3rd year bachelor's
- 1st year masters
- 2nd year masters
- PhD

82,4%   11,8%
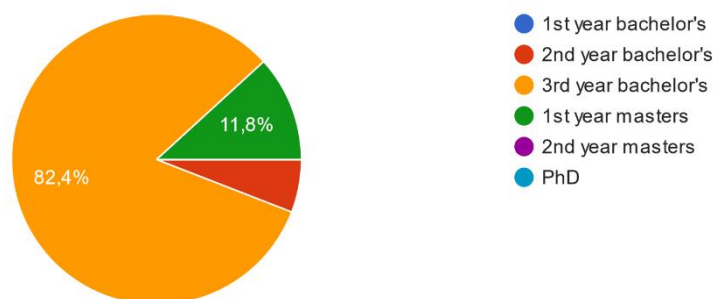
Figure 6

Course

17 respostas

- L.EIC/M.EIC
- L.BIO/M.BIO
- L.EC/M.EC
- L.EEC/M.EEC
- L.EMAT/M.EMAT
- L.EMG/M.EMG
- L.EA/M.EA
- L.EGI/M.EGI

▲ 1/2 ▼

94,1%
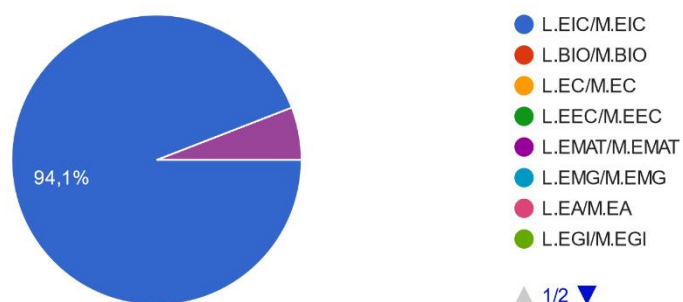
Figure 7

How often do you use the library?

17 respostas

- Never
- Once a month
- Once a week
- Multiple times per week
- Everyday

35,3%   35,3%   23,5%
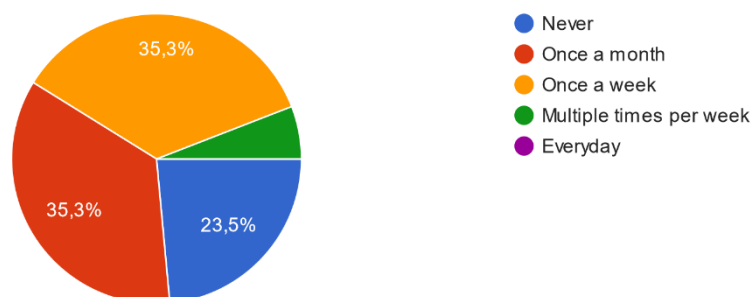
Figure 8

What do you usually do in the library?
14 respostas
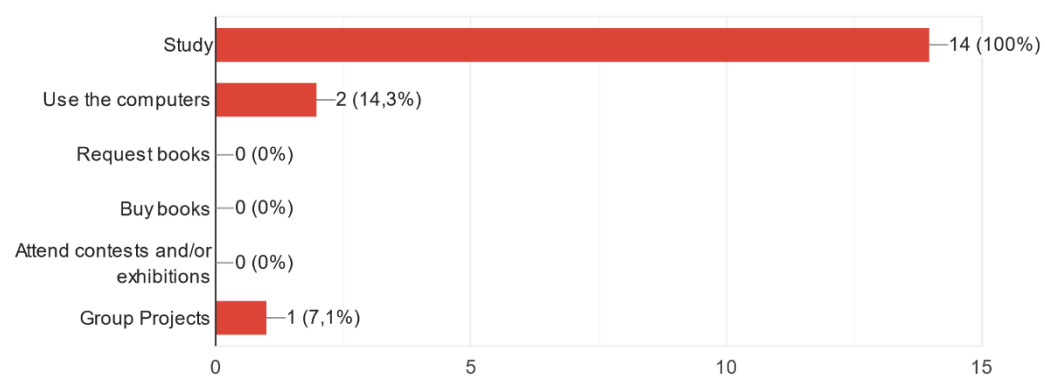
Figure 9

Do you think these services are easily accessible?
15 respostas
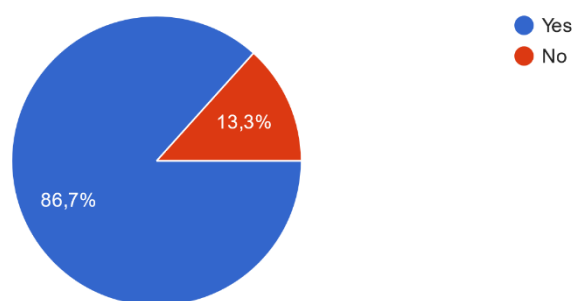
Figure 10

Do you usually attend events that take place in the library?

17 respostas

● Yes
● No

100%
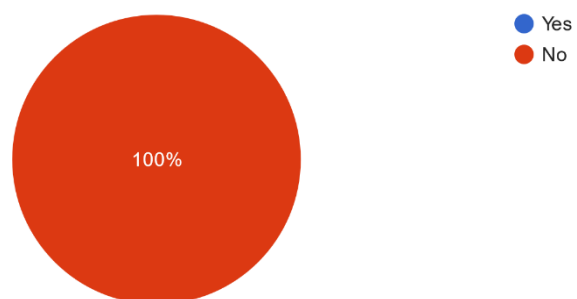
Figure 11

If not, what are the main reasons?

17 respostas
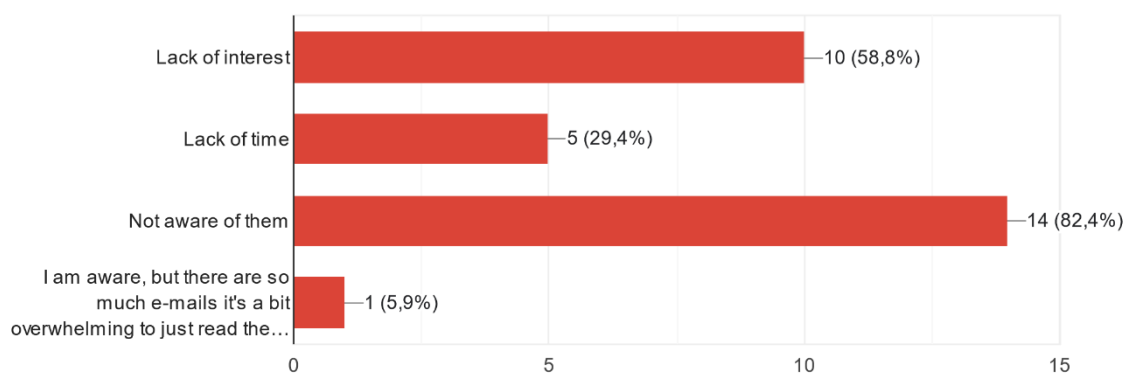
Figure 12

How often do you read/consult the mandatory literature demanded by the units you take?

17 respostas
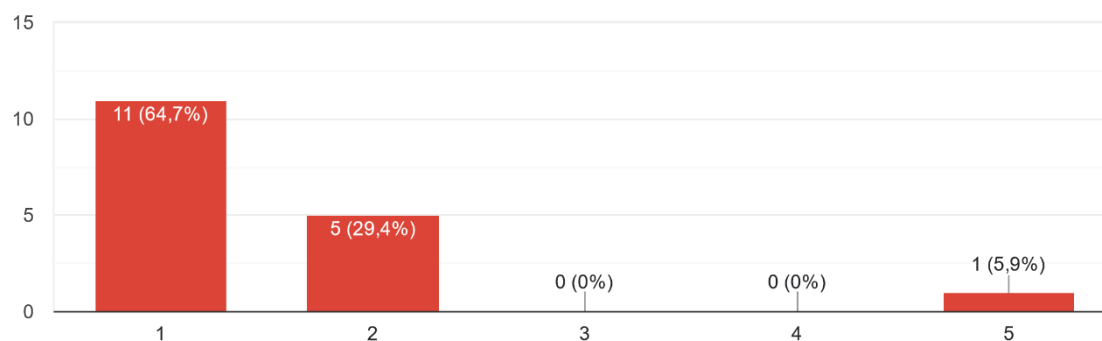
Figure 13

If not, what are the main reasons to not read them?

16 respostas
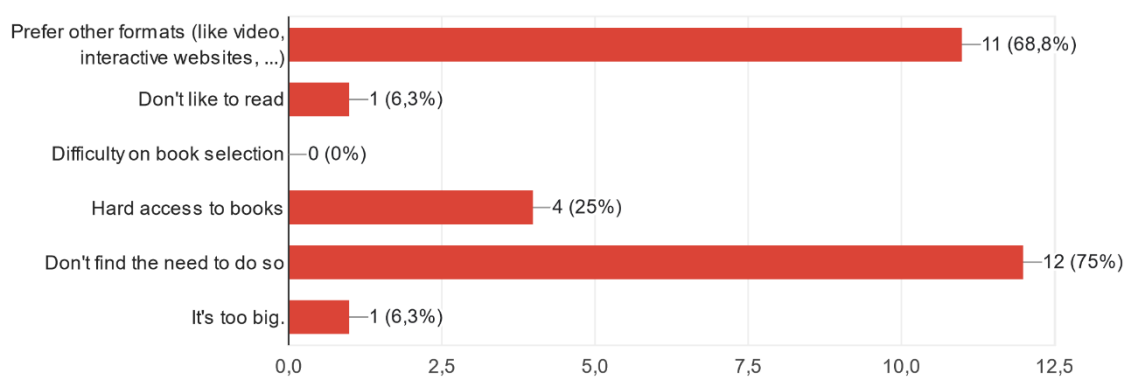
Figure 14

How would you rate your experience with the following information platforms (Rate those you've used before)
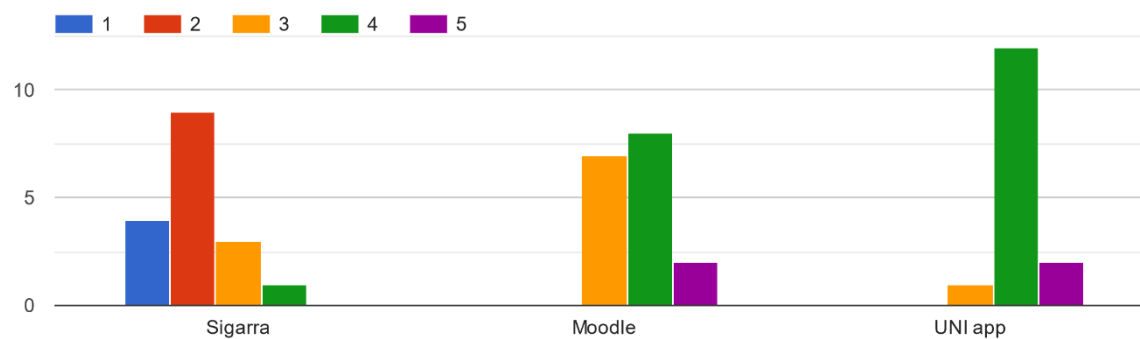
Figure 15

Are you familiar with FEUP's library website?

17 respostas
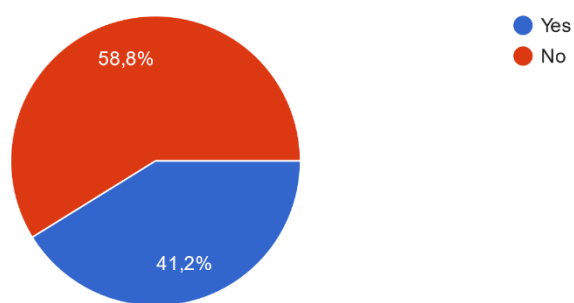
Figure 16

If so how would you rate your overall experience with it?

7 respostas
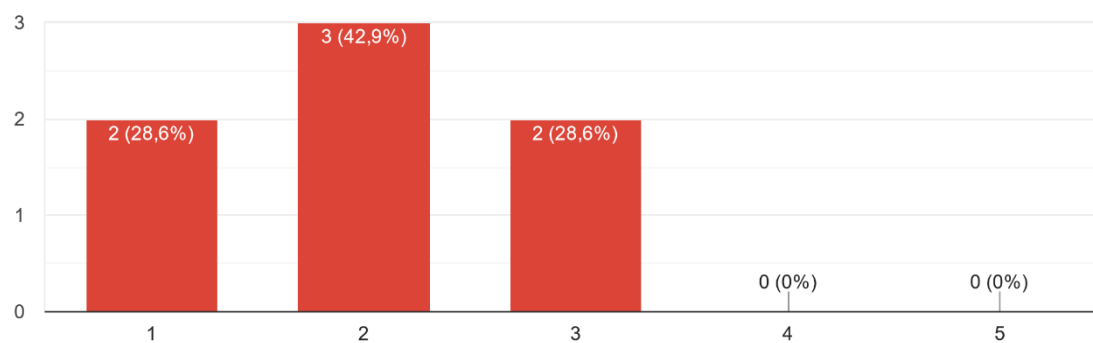
Figure 17

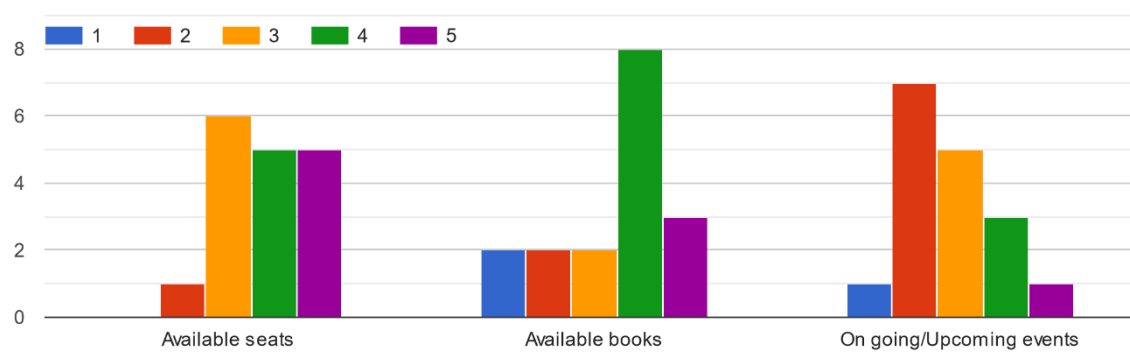Please rate this library related information, according to its relevance.

Figure 18

Which payment method do you tend to use in your daily transactions?
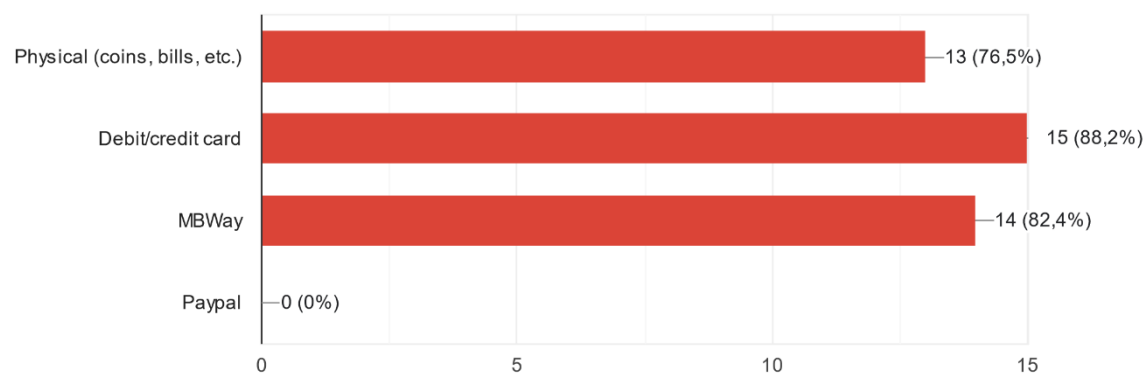17 respostas

Figure 19

Do you have any comments regarding the functionalities discussed or others you'd like to see implemented?

0 respostas

Ainda não existem respostas a esta pergunta.

Figure 20