ER: Requirements Specification Component

The iNeedHelp project intends to provide its users with a Q&A platform that helps them answer their questions in a complete, clean, and easy to read way. Its users will be able to find multiple questions and answers along with a variety of everyday and specific topics.

A1: iNeedHelp

The iNeedHelp project is the development of a web-based information system for managing threads of questions and their respective answers, users, and their information. This is a tool that can be used by anyone, but it is focused on students, teachers, investigators as well as all types of academics. A team of administrators is predefined, being them the maintainers and responsible persons for the system, ensuring it runs smoothly.

This application allows users to manage all their questions, answers as well as their personal information and awards for answering questions. A user can search a question by its title, topic, or tag questions, answers, and user information will be available worldwide virtually, except the personal information of a user, which only the user and administrators will have access to. Questions are accessible to unregistered users, but to answer and post a question the user needs to be registered.

Users will be separated into groups with different permissions. These groups include the above-mentioned administrators, with complete access and modification privileges, and the registered users, with privileges to ask, answer, comment, vote, and report a question, view and edit their profile and highlight their awards. By answering questions users can receive an award for their answer and the most upvoted answer will be highlighted on the question thread.

The platform will have an adaptive and responsive design, allowing users to have a clear browsing experience, regardless of the device (desktop, tablet, or smartphone). The product will also provide easy navigation and a joyful overall user experience.

A2: Actors and User stories

This artifact contains the specifications of the actors involved and their user stories, serving as agile documentation for the iNeedHelp project development.

Actors

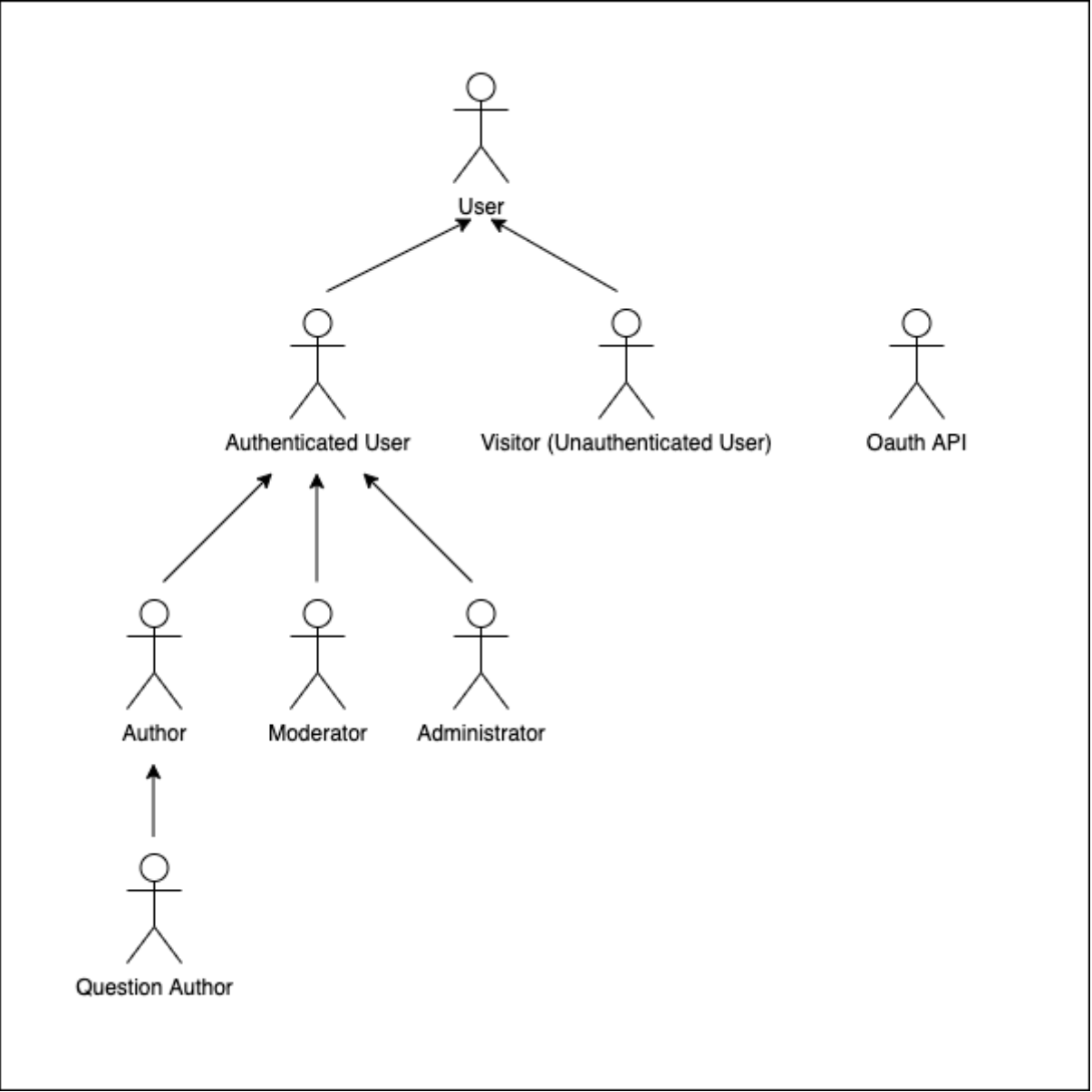For iNeedHelp, the actors are represented in Figure 1 and described in Table 1.

Figure 2.1 - iNeedHelp Actors

Identifier	Description
User	Generic user that has access to public information, such as questions and answers, and can search topics and tags

Identifier	Description
Visitor	Unauthenticated user that can register itself. Has access to public information and can perform searches
Authenticated User	Authenticated user that can access public information, post and answer questions, and manage their personal profile
Administrator	Authenticated user that is responsible for the management of users, questions, answers, topics, tags, and badges. Has supervisory and moderation privileges
Moderator	Authenticated user that belongs to the same location as the posted question or answer and can edit that same question or answer
OAuth API	External OAuth API that can be used to register or authenticate into the system

Table 2.1 - iNeedHelp Actors Descriptions

User Stories

For iNeedHelp, consider the user stories that are presented in the following sections.

User

Identifier	Name	Priority	Description
US01	See Home Page	High	As a User, I want to see the home page, so that I can have an idea of what this website is about
US02	See About Page	High	As a User, I want to see the about page, so that I can find out a more detailed description of this website
US03	See Contact Page	High	As a User, I want to see the contact page, so that I can find solutions to issues that I may face during the usage of this website
US04	Browse/Read Without Sign-in	high	As a User, I want to quickly navigate and browse the system without being forced to register or login into the system so that I have the option to just quickly view the topic that interests me without wasting too much time
US05	Search by name	high	As a User, I want to quickly search for the content that I would like to know about (posts, questions, users) by name so that I do not need to waste time browsing each content one by one
US06	Search by topic or tag	high	As a User, I want to filter certain questions by topic or tag, so that I can find the questions that interest me the most, easier and quicker

Table 2.2 - User user stories

Visitor (Unauthenticated User)

Identifier	Name	Priority	Description
US11	Sign-in	high	As a Visitor, I want to authenticate into the system, so that I can access privileged information (post questions and answer questions)
US12	Registration	high	As a Visitor, I want to register myself into the system, so that I can authenticate myself into the system and access further features
US13	OAuth API Sign-up	low	As a Visitor, I want to register a new account linked to my Google/Github account, so that I do not need to create a whole new account to use the platform
US14	OAuth API Sign-in	low	As a Visitor, I want to sign in through my Google/Github account, so that I can authenticate myself into the system

Table 2.3 - Visitor user stories

Authenticated User

Identifier	Name	Priority	Description
US21	Change Password	high	As an Authenticated User I want to be able to change my password when necessary

Identifier	Name	Priority	Description
US22	Logout	high	As an Authenticated User I want to be able to do sign out from my account so that I can change to other accounts and also for safety reasons
US23	Recover Password	medium	As an Authenticated User, I want to safely recover my password, so that I can change my password for security reasons or in case of loss or misplacement of a previous password
US24	Delete Account	medium	As an Authenticated User, I want to safely delete my registered account, so that I can delete my personal data from the website
US25	View Profile	medium	As an Authenticated User I want to access my user profile page so I can see all my data and activity
US26	Edit Profile	medium	As an Authenticated User I want to be able to edit my profile to my liking, including biography, profile picture, and also manage private information

Table 2.4 - Authenticated User user stories

Moderator

Identifier	Name	Priority	Description
US31	Edit Questions	high	As a Moderator I want to be able to remove anyone's content as I deem necessary to prevent language abuse or other inappropriate behavior
US32	Edit Question Tags	high	As a Moderator I want to be able to edit the tags of any question
US33	Mark as duplicate	medium	As a Moderator I want to be able to mark questions as duplicates and link to the question it duplicates
US34	Edit Content	medium	As a Moderator I want to be able to edit anyone's questions/responses to fix typos or make them clearer
US35	Lock Question	low	As a Moderator I want to be able to lock the discussion of any question, preventing edition from regular users

Table 2.5 - Moderator user stories

{ Question, Answer, Comment } Author

Identifier	Name	Priority	Description
US41	Edit Question	high	As an Author I want to be able to edit my questions/answers/comments
US42	Delete Question	high	As an Author I want to be able to delete my questions/answers/comments

Table 2.6 - { Question, Answer, Comment } Author user stories

Question Author

Identifier	Name	Priority	Description
US51	Edit Question Tags	high	As a Question Author I want to be able to edit the tags of the question
US52	Mark Answer as Correct	high	As a Question Author I want to be able to mark an answer as correct

Table 2.7 - Question Author user stories

Administrator

Identifier	Name	Priority	Description
US51	Administrator Accounts	high	As an Administrator, I want an account that will able me to manage specific and overall features
US52	Administer User Accounts (search, view, edit, create)	high	As an Administrator, I want to manage all user accounts

Identifier	Name	Priority	Description
US53	Block/Unblock User Accounts	high	As an Administrator, I want to block and unblock user accounts to control their access
US54	Delete User Account	high	As an Administrator, I want to delete user accounts, so that they are no longer visible
US55	Manage Tags	high	As a Manager, I want to be able to manage question's tags

Table 2.8 - Administrator user stories

Supplementary Requirements

This section contains business rules, technical requirements, and other non-functional requirements on the project.

3.1. Business rules

Identifier	Name	Description
BR01	Deleted Account	Upon account deletion (US24 & US54), shared user data (e.g. comments, reviews, likes) is kept but is made anonymous
BR11	Administrator Account	Administrators are participating members of the community, i.e. can post or vote on questions or answers
BR12	Edited	Questions and answers edited after being posted should have a clear indication of the editions
BR13	Badge	User badges are dependent on the likes and dislikes received on his questions and answers, and also on actions made by the user (first question, first answer, etc)
BR14	Edit Own Post	Users can't vote on their own post, however, they can comment and also review their stories and answers
BR15	Date/Time Consistency	Account registration date should be previous to account deletion date

Table 3.1 - iNeedHelp Business Rules

3.2. Technical requirements

Identifier	Name	Description
TR01	Performance	The system should have response times shorter than 2s to ensure the user's attention
TR02	Robustness	The system must be prepared to handle and continue operating when runtime errors
TR03	Scalability	The system must be prepared to deal with the growth in the number of users and their actions
TR04	Accessibility	The system must ensure that everyone can access the pages, regardless of whether they have any handicap or not, or the Web browser they use
TR05	Data Quality	The system must have excellent data quality, such as the answers from the users, we must ensure that no misleading answers are posted
TR06	User Privacy	The system must protect users' sensitive data from internal data professionals and employees.

Table 3.2 - iNeedHelp Technical Requirements

3.3. Restrictions

Identifier	Name	Description
C01	Deadline	The system should be ready to be used at the beginning of the Easter holidays, to be able to register the loans of the season
C02	Negative comments	The system should be able to detect negative and inappropriate comments and answers from users (related to racism, span, misleading and scams, hateful or sexually abusive, ...), these contents will be removed and a warning will be sent to the user
C03	Database	At the database level, PostgreSQL must be used

Identifier	Name	Description
C04	Server	PHP as a programming language on the server, Laravel as the server framework and NGINX as the webserver
C05	Environment	Docker as a virtualization environment
C06	Version Control	Git for software versioning
C07	Client	HTML, CSS and JavaScript as client languages

Table 3.3 – iNeedHelp Restrictions

A3: Information Architecture

This artifact presents a brief overview of the information architecture of the system to be developed. It has the following goals:

- Help to identify and describe the user requirements, and raise new ones;
- Preview and empirically test the user interface of the product to be developed;
- Enable quick and multiple iterations on the design of the user interface.

This artifact includes two elements:

1. A sitemap, defining how the information is organized in pages;
2. A set of wireframes, defining the functionality and the content for each page. Wireframes are designed for at least two of the most important pages.

Sitemap

The iNeedHelp system is organized in four main areas, the static/misc pages that provide general information about the system (Static Pages), the pages used to explore and access the questions and answers (Q&A), the pages with the user profile and profile settings (User Pages), and the pages with administration features (Administration).
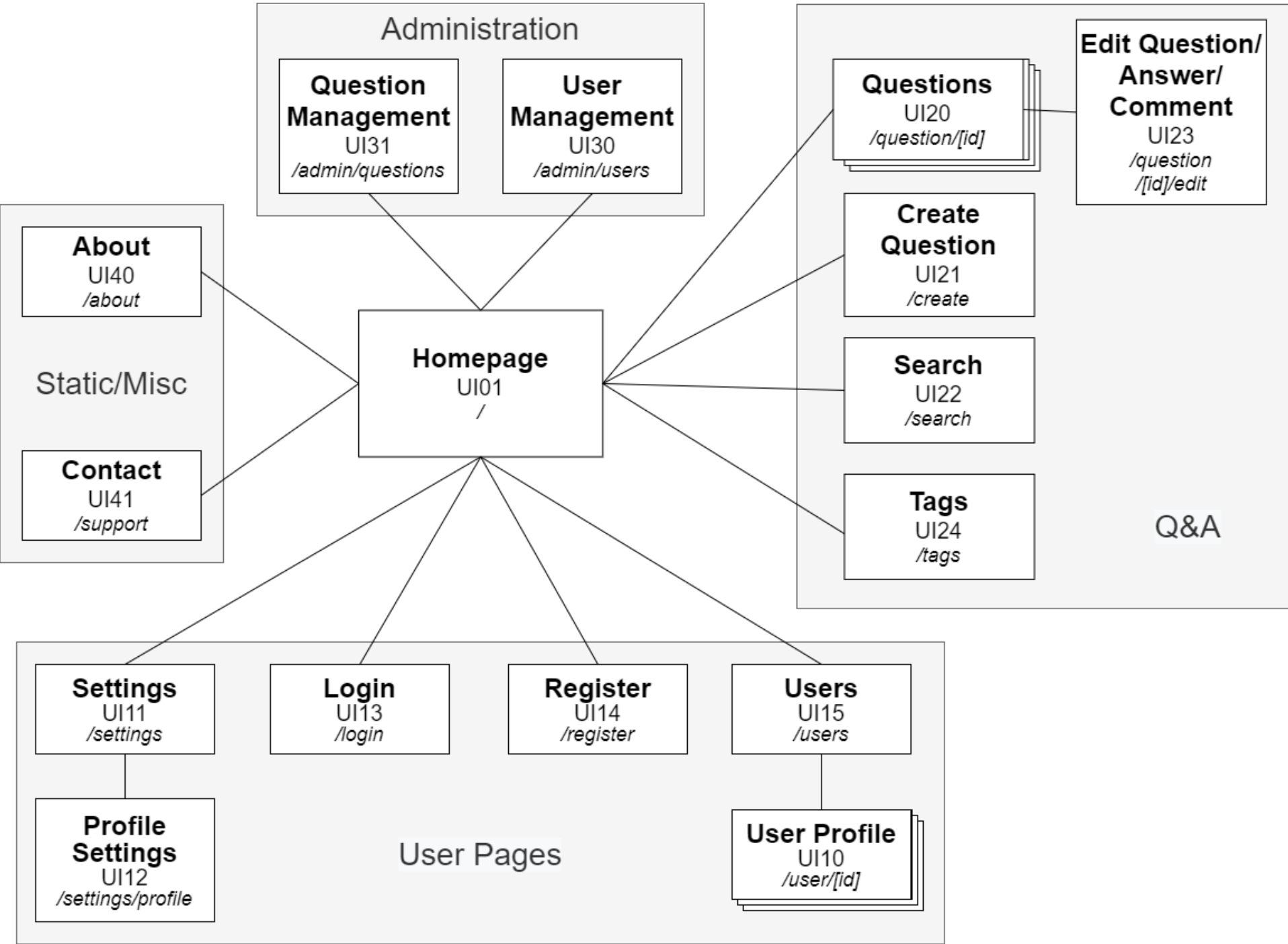

Figure 3.1 – iNeedHelp Sitemap

Wireframes

For iNeedHelp, the wireframes for the home page (UI01), the user profile page (UI10), the question and answer page (UI20), and the page to create a question (UI21) are presented in Figures 3.2, 3.3, 3.4, and 3.5, respectively. All pages should include a header and footer with common features such as home, search, contact and about. The logo button should work as a link to the homepage. Users will be able to upvote, downvote or edit an answer if they are the author.
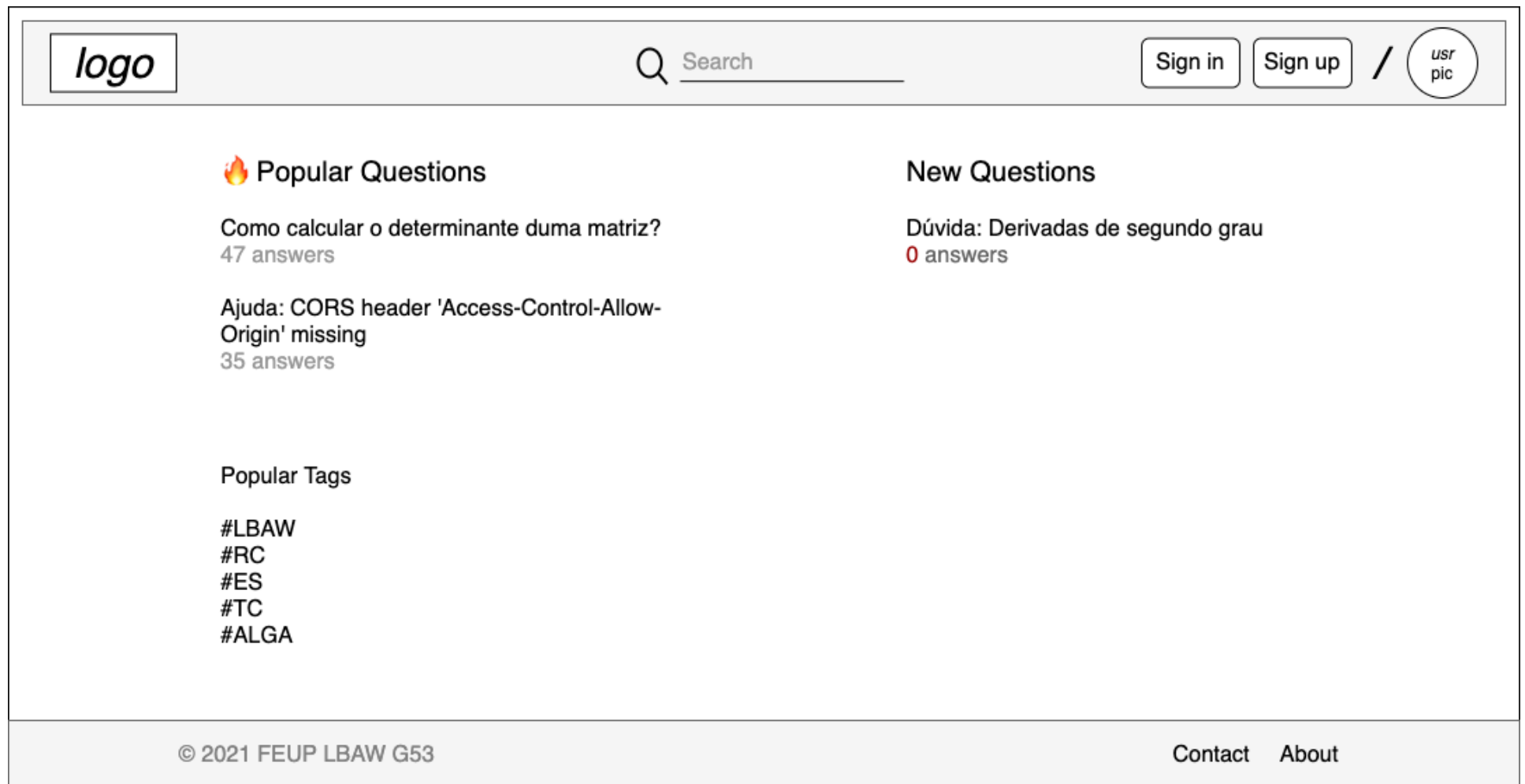
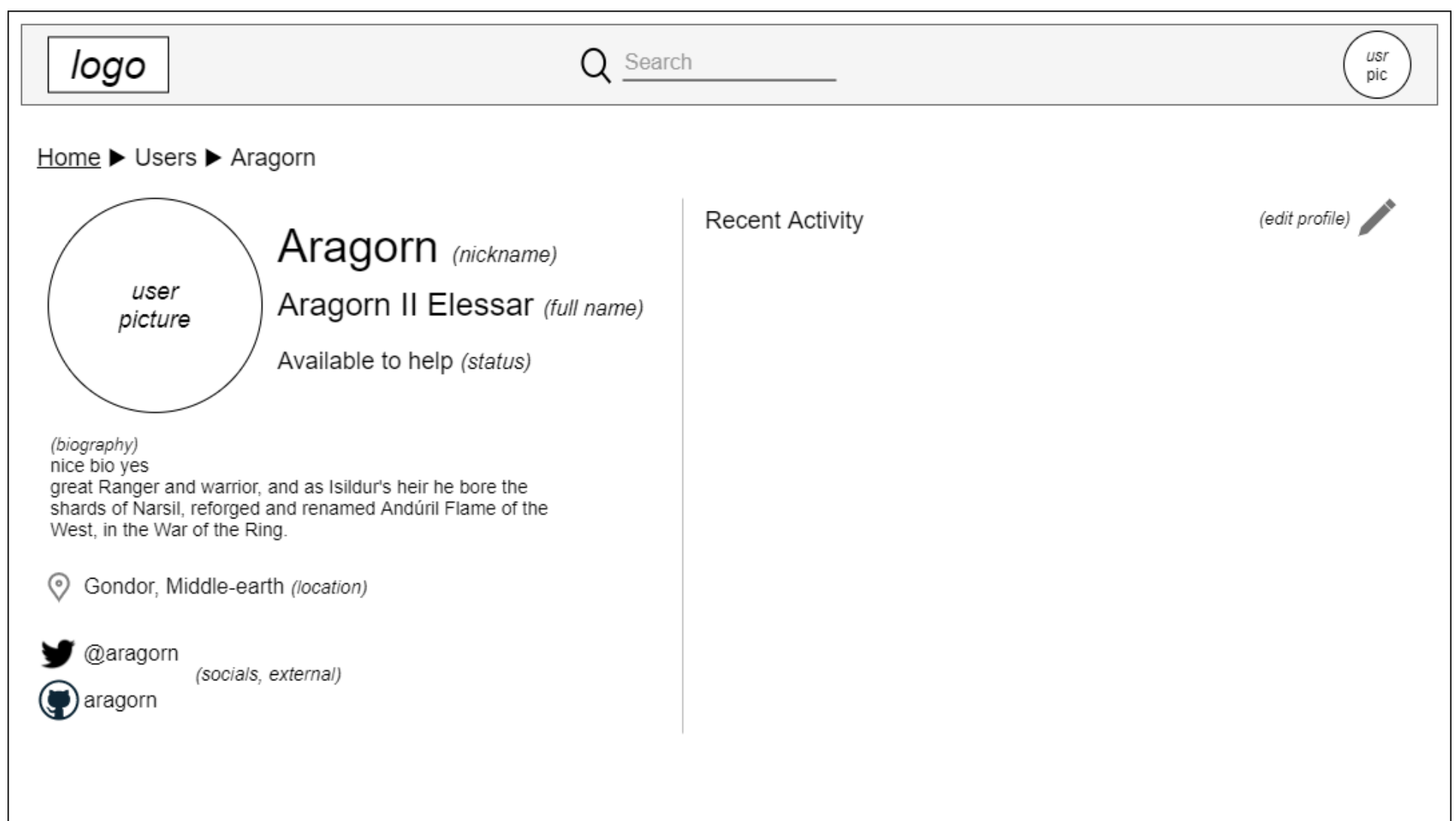

Figure 3.2 – iNeedHelp Wireframe – Home Page (UI01)

Figure 3.3 – iNeedHelp Wireframe – User Profile Page (UI10)

logo

Search

usr pic

HashTags: Determinante (matemática) Matrizes (matemática) Álgebra linear Álgebra Matemática

user picture

Q: Como calcular o determinante de uma matriz?

Ainda não consegui perceber muito bem como é que se calcula o determinante de uma matriz

José Sousa   05/11/2021 at 15:17

user picture   Joaquim Faria   ✏️   👍 32 👎

O determinante é de maneira abstrata como se fosse um classificador do tipo de matriz que falamos.
Como se fosse uma identificação dela.
A[2] [2] = (2,3,4,5), B[2] [2] = (2,1,4,1) e C[2] [2] = (4,3,10,7)
Det = - 2
Possuem o mesmo determinante
Pensanso em inversos temos.
A[2] [2] = (-5/2 , 3/2 , 2 , -1)
B[2] [2] = (-1/2 , 1/2 , 2 , - 1)
C[2] [2] = (-7/2, 3/2, 5, - 2)
                                        05/11/2021 at 15:25

Your Answer

B *I* 🔗 ❞ {} 🖼 ⟨⟩ ☰ ☰	Submit Answer

Contact   About

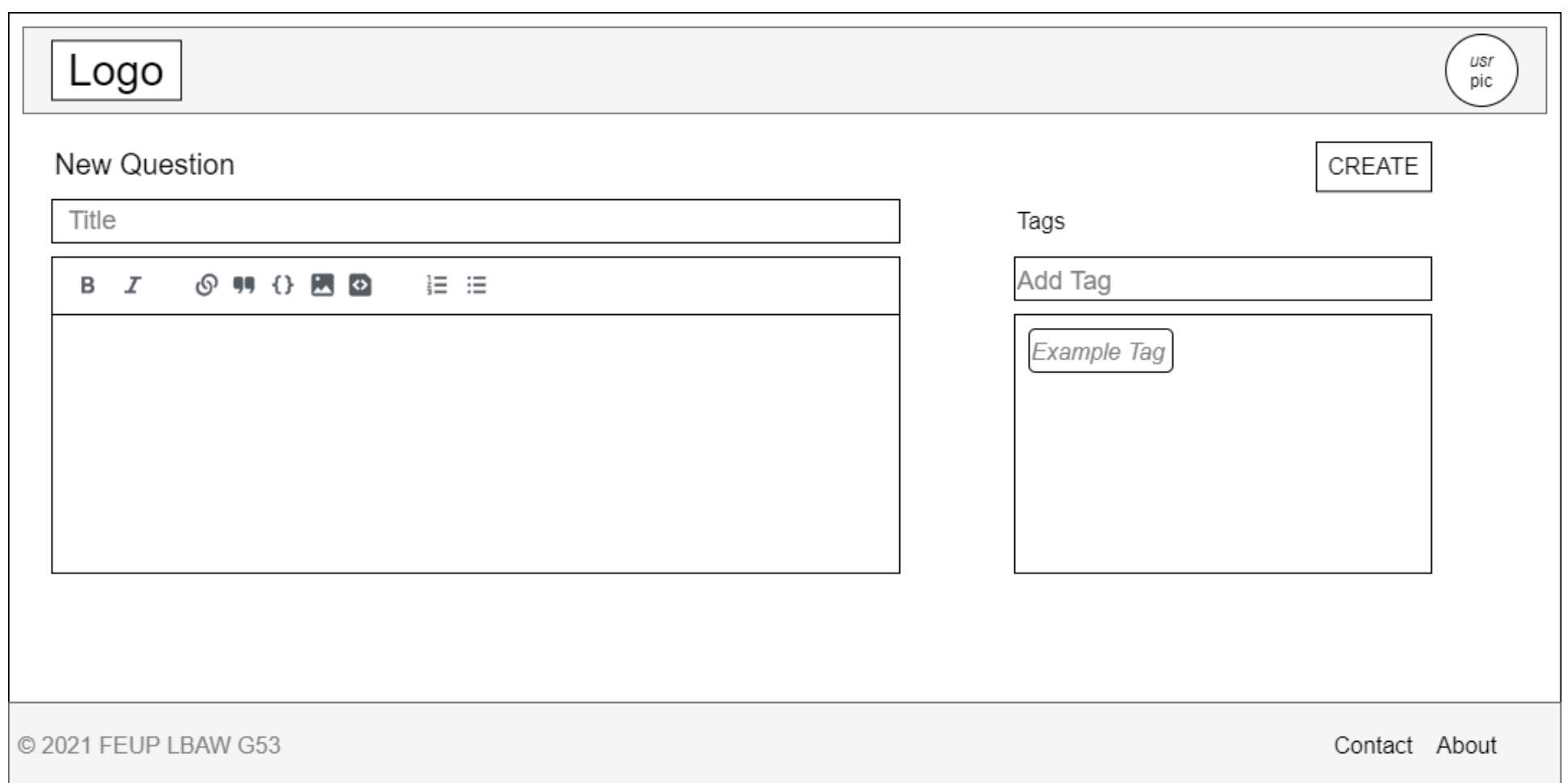Figure 3.4 – iNeedHelp Wireframe – Question and Answer Page (UI20)

Figure 3.5 – iNeedHelp Wireframe – Create Question Page (UI21)

Revision history

Changes made to the first submission:

1. 08/11/2021 – Final revision before submission

GROUP2153, 26/10/2021

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