Project Proposal

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Title

Surf Club Management Application – A web application to help manage the members of a Surf Club.

Background

Managing an association and its members can be a difficult effort, especially without the right tools, one of these examples is Ericeira Surf Club, that uses a simple excel sheet to manage their members.

This approach can be a handy option with a simple application, however as the association grows, it becomes a less feasible option due to lack of scalability. Besides making the maintenance of members a long task and inefficient, it also makes the implementation of new functionalities difficult.

In addition to replacing the excel sheet which only managed its members and their personal information, it is now feasible to acquire member engagement, thanks to the future availability of a system that will allow members to view their profile and receive club-related notifications, such as event or payment reminders.

A management application enables the creation of a shared infrastructure for achieving compliance with business policies, resulting in improved results in terms of both goal execution and budget management.

There are several services and software that allow for the management of members in a community, but there are several gaps between what is offered and what is required in our situation, one of which is the ability to manage partner companies that offer discounts based on whether someone is a member of the association and quickly validate their membership, which will be accomplished by creating a digital membership card that is accessible via QR code.

The main aim of this project is to solve this problem creating a more modern environment, bringing more exposure to the company, and allowing a simple and easier management of their members.

Objectives

- Implement a system capable of managing a Surf Clubs members, both new and already existing ones.
- Offer extra functionalities surrounding the members management system, e.g., creation of a digital membership card, control the membership quotas and allow management of current account.
- Implement a user-friendly interface in the making of this project.
- Acquire and demonstrate web application programming skills.
- Demonstrate database design skills.

Justification

While working on an industry-driven project, we will be able to explore and learn new approaches. It will also allow us to put our past learning in courses like Internet programming and information systems into practice and demonstrate our abilities. The topic also provides an opportunity to expand our web development knowledge while also improving our project management skills.

Scope

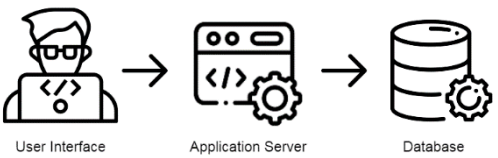
The functional scope of the project and the resulting web application is tailored to fit all needs a sports club will need:

- Having the ability to list members according to the chosen criteria, e.g., in numerical order, alphabetical, age, among other criteria.
- Create a digital membership card with photo and QrCode.
- Controlling the payment of membership quotas whether annual, semi-annual, quarterly or monthly.
- Managing and sending information about their financial positioning (quota payment).
- Managing and sending information about benefits and partners.
- Managing current account statements.
- Issuance of payment receipts for quotas and other debts.
- Management of attendance at events, assemblies and others.
- Tables with statistics and various graphs.

Approach and Deliverables

Approach

The project will cover all aspects of web application architecture, using NodeJs [1] for the server-side and React [2] framework for the client-side due to it being component based and for the capability of changing data without reloading. We chose PostgreSQL [3] for database management because it offers a robust concurrency management system, which implements MVCC, as well as capabilities like parallel read queries.



Deliverables

The project will comprise a functioning web application, a PostgreSQL database ready for incoming queries and a technical and a detailed final report which documented every step of the project development.

- Web application covering the functionalities defined.
- Data model, database design and implementation.
- Integration and unit tests for the application and for the database.

Constraints and assumptions

- The only missing skill is for React technology.
- The deadlines for delivery must be met.
- Every developed step/task is thoroughly tested and documented in the final report.

Resources

The project is expected to make use of any device that supports a web browser and the application development. The development of the application will make use of several frameworks such as React, NodeJS and Express.

Risks

The main risk to the project is the inexperience on using the React framework.

Project organization

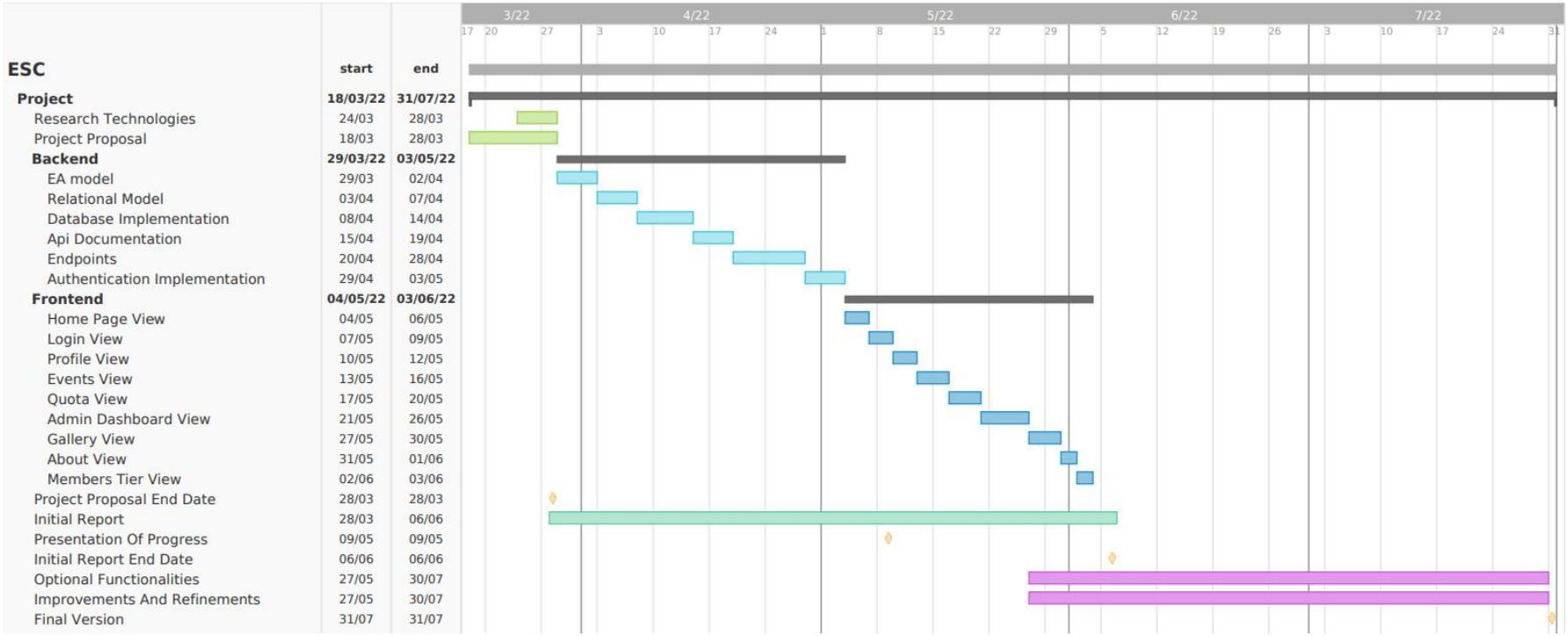
The project will be conducted by Bernardo Fragoso, Gonçalo Albuquerque, Miguel Sousa and will be oriented and supervised by Professor Filipe Freitas of ISEL and Miguel Pires from ESC.

Major milestones

The following milestones that seem achievable from initial planning are:

- Project proposal → March 28th
- Presentation of progress → May 9th
- Demonstration → June 6th
- Final version → July 31st

Project Plan



ESC	start	end
Project	**18/03/22**	**31/07/22**
Research Technologies	24/03	28/03
Project Proposal	18/03	28/03
Backend	**29/03/22**	**03/05/22**
EA model	29/03	02/04
Relational Model	03/04	07/04
Database Implementation	08/04	14/04
Api Documentation	15/04	19/04
Endpoints	20/04	28/04
Authentication Implementation	29/04	03/05
Frontend	**04/05/22**	**03/06/22**
Home Page View	04/05	06/05
Login View	07/05	09/05
Profile View	10/05	12/05
Events View	13/05	16/05
Quota View	17/05	20/05
Admin Dashboard View	21/05	26/05
Gallery View	27/05	30/05
About View	31/05	01/06
Members Tier View	02/06	03/06
Project Proposal End Date	28/03	28/03
Initial Report	28/03	06/06
Presentation Of Progress	09/05	09/05
Initial Report End Date	06/06	06/06
Optional Functionalities	27/05	30/07
Improvements And Refinements	27/05	30/07
Final Version	31/07	31/07

References

Node.Js. https://nodejs.org/en/, visited on March 21st [1].

React, A JavaScript library for building user interfaces. https://reactjs.org/, visited on March 21st [2].

PostgreSQL, An open-source database. https://www.postgresql.org/, visited on March 21st [3].