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HDSDEV\_SEP23

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**SoulJournal**

Technical Report



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**National College of Ireland**

**Project Submission Sheet – 2022/2023**

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Word Count (excluding bibliography and appendices):

I hereby certify that the information contained in this (my submission) is information pertaining to research I conducted for this project. All information other than my own contribution will be fully referenced and listed in the relevant bibliography section at the rear of the project.

ALL internet material must be referenced in the references section. Students are encouraged to use the Harvard Referencing Standard supplied by the Library. To use other author's written or electronic work is illegal (plagiarism) and may result in disciplinary action. Students may be required to undergo a viva (oral examination) if there is suspicion about the validity of their submitted work.

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| **Date:** | 10/08/2024 |

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# Glossary, Acronyms, Abbreviations and Definitions

A table containing all the terms and acronyms used in the document.

# Executive Summary

**SoulJournal** addresses the challenge of maintaining mental well-being through regular journaling. Many individuals struggle to keep a consistent journaling habit due to lack of motivation, organization, and accessibility([TheHappyJournals](https://www.thehappyjournals.com/hard-to-stick-to-a-journaling-routine/)).

Souljournal is a web-based application designed to simplify and enhance the journaling experience by providing an intuitive and user-friendly platform.

The technical solution involves a React-based frontend integrated with a backend server that manages user authentication, journal entries, and feedback. The application leverages modern web technologies such as React Router for seamless navigation, Bootstrap for responsive design, and RESTful APIs for efficient data handling. Key features include user registration and login, creating and managing journal entries, receiving motivational quotes, and providing feedback.

The evaluation of **SoulJournal** was conducted through user testing and feedback collection. Users described that the web application is designed in such a way that you’re not distracted by images, useless text, and you’re keeping your focus on the new entry.

Overall, **SoulJournal** successfully provides a supportive environment for users to maintain their journaling habits, contributing positively to their mental well-being.

# Introduction

## Background

“[Research](https://journals.sagepub.com/doi/abs/10.1177/0146167201277003)” by Laura King shows that writing about achieving future goals and dreams can make people happier and healthier. Similarly, Jane Dutton and Gregory Ciotti [found](https://journals.sagepub.com/doi/abs/10.1177/0956797612439424) that when people doing stressful fundraising jobs kept a journal for a few days about how their work made a difference, they increased their hourly effort by 29% over the next two weeks.” ([Source](https://www.helpscout.com/blog/benefits-of-writing/))

A web-based journaling application also offers unparalleled convenience, allowing users to journal from any device with itnernet access. This flexibility is particularly appealing in today’s fast-paced world, where individuals seek tools that fit seamlessly into their busy lifes.

## Aims

The objective for this project is to build a journaling web application called **SoulJournal**. The web application will be designed to provide users a convenient and secure platform for personal journaling. **SoulJournal** will seek to address common barriers such as lack of motivation, organization, and accessibility.

**SoulJournal** aims to:

1. Promote Consistent Journaling: By offering an easy-to-use interface and motivational features, Souljournal encourages users to maintain a regular journaling habit.
2. Enhance user Experience: Utilizing modern web technologies, the application provides a seamless and engaging user experience, ensuring that users can easily navigate and utilize the platform.
3. Support Mental Health: By facilitating regular journaling, **SoulJournal** aims to help users manage stress, regulate emotions, and improve self-awareness, contributing to overal mental well-being.
4. Ensure Accessibility: **SoulJournal** is designed to be accessibile on various devices, ensuring that users can journal anytime and anywhere.

## Technologies

Technologies used in the **SoulJournal** Project:

1. **React**

* **Description**: React is a JavaScript library for building user interfaces, particularly single-page applications where you need a fast, interactive user experience.
* **Contribution**: React is used to build the front-end of the **SoulJournal** application. It allows for the creation of reusable components, efficient state management, and dynamic rendering of the user interface. This makes the application responsive and interactive.

1. **JavaScript (ES6+):**

* **Description**: JavaScript is a programming language that enables interactive web pages. ES6+ refers to the latest versions of JavaScript, which include new syntax and features.
* **Contribution**: JavaScript is the primary language used to write the logic for the application. ES6+ features like arrow functions, destructuring, and async/await make the code more concise and easier to manage.

1. **HTML5**

* **Description**: HTML5 is the latest version of the HyperText Markup Language, which is used to structure content on the web.
* **Contribution**: HTML5 is used to structure the content of the **SoulJournal** application. It provides the basic elements and semantic tags that form the foundation of the web pages.

1. **CSS3**

* **Description**:CSS3 is the latest version of the Cascading Style Sheets language, used to style HTML elements and control the layout of the web pages.
* **Contribution**: CSS3 is used to style the **SoulJournal** application, making it visually appealing and user-friendly. It ensures that the layout is responsive and consistent across different devices.

1. **Bootstrap**

* **Description**: Bootstrap is a popular front-end framework for developing responsive and mobile-first websites.
* **Contribution**: Bootstrap is used to quickly design and customize responsive web pages. It provides pre-designed components and a grid system that helps in creating a consistent layout and styling across the application.

1. **React Router**

* **Description**: React Router is a library for routing in React applications. It allows for navigation between different components and views.
* **Contribution**: React Router is used to manage the navigation within the **SoulJournal** application. It enables users to move between different pages(“Home”, “Journal”, “Quotes”) without reloading the entire application.

1. **Node.js**

* **Description**: Node.js is a JavaScript runtime built on Chrome’s V8 JavaScript Engine. It allows for server-side scripting using JavaScript.
* **Contribution**: Node.js is used for the back-end of the **SoulJournal** application. It handles server-side logic, database interactions, and API requests, enabling a seamless connection between the front-end and back-end.

1. **Express.js**

* **Description**: Express.js is a web application framework for Node.js, designed for building web applications and APIs.
* **Contribution**: Express.js is used to create t he server and define the API endpoints for the **SoulJournal** application. It simplifies the process of handling HTTP requests and responses.

1. **MongoDB**

* **Description**: **MongoDB** is a **NoSQL** database that stores data in JSON-like documents.
* **Contribution**: **MongoDB** is used to store the data for the **SoulJournal** application, such as user entries, quotes, and other journal-related information. Its flexible schema allows for easy storage and retrieval of data.

1. **Mongoose**

* **Description**: Mongoose is an Object Data Modeling(ODM) library for MongoDB and Node.js
* **Contribution**: Mongoose is used to interact with the MongoDB data base. It provides a schema-based solution to model the application data, making it easier to validate and manage.

1. **Visual Studio Code**

* **Description**: VS Code is a source-code editor developed by Microsoft. It includes support for debugging, embedded Git control, syntax highlighting, intelligent code completion, and more.
* **Contribution**: VS Code is the development environment used to write and manage the project’s code. Its features like extensions and integrated terminal puts in order the development process.

1. **Git**

* **Description**: Git is a distributed version control system used to track changes in source code during software development.
* **Contribution**: Git is used for version control in the **SoulJournal** project. It allows multiple developers to collaboarte, track changes, and manage different versions of the codebase.

These technologies work together to create a full-stack web application that allows users to create, manage, and view journal entries.

## Structure

1. Introduction:

* Background: Provides context and motivation for the SoulJournal project.
* Aims: Outlines the primary goals and objectives for the project.
* Technologies Used: Lists the technologies and tools utilized in the development of SoulJournal.
* Structure: Gives an overview of the documentation structure, detailing the contents of each section.

1. System:

* Requirements:
  + Functional requirements: Specifies the functionalities that the system must provide.
  + Data requirements: Describes the data that the system will handle.
  + User requirements: Outlines the needs and expectations of the end-users.
  + Environmental requirements: Lists the environmental conditions under which the system will operate.
  + Usability requirements: Defines the usability criteria for the system.
* Design and Architecture: Describes the overall architecture and design principles of the SoulJournal application.
* Implementation: Details the implementation of key features and components.
* Testing: Covers the testing strategies and quality assurance practices.
* Graphical User Interface(GUI) Layout: Discusses the design principles and user interface elements.
* Customer Testing: Describes the process and results of testing the system with actual users.
* Evaluation: Summarizes the evaluation of the system against the requirements and objectives.

1. Conclusions: Summarizes the project outcomes, including achievements and challenges faced.
2. Further development or research: Discusses potential future enhancements and areas for further research.
3. References: Lists all the references and sources used in the documentation.
4. Appendix:

* Project Proposal: Includes the intiail project proposal document.
* Project Plan: Contains the detailed project plan.
* Requirement Specification: Provides the complete requirement specification.
* Monthly Journal: Includes the monthly journal entries documenting the project progress.
* Other Material Used: Lists any additional materials used during the project.

# System

## Requirements

The following section outlines all the functional requirements that **SoulJournal** should accomplish and it also describes the main details of the systems and the way the users will interact with the system. We will also investigate non-functional requirements

### Functional requirements

The functional requirement describes the core features and functionalities that the SoulJournal system must provide. The requirements are ranked in terms of priority (1 being the highest priority).

1. **User Registration and Authentication**

* Non-registered users should be able to create a new account by providing necessary information (email, password).
* Registered users should be able to securely log in to the web application.

1. **Journal Entry Management**

* Users should be able to create new journal entries.
* Users should be able to save journal entries securely.
* Users should be able to retrieve and view their previous journal entries.
* Users should be able to update or delete their journal entries.

1. **Quote Integration**

* The application should integrate with the **Quotable** API to fetch and display inspirational quotes.
* Users should be able to filter or search for quotes based on specific topics.

1. **User Interface and Customization**

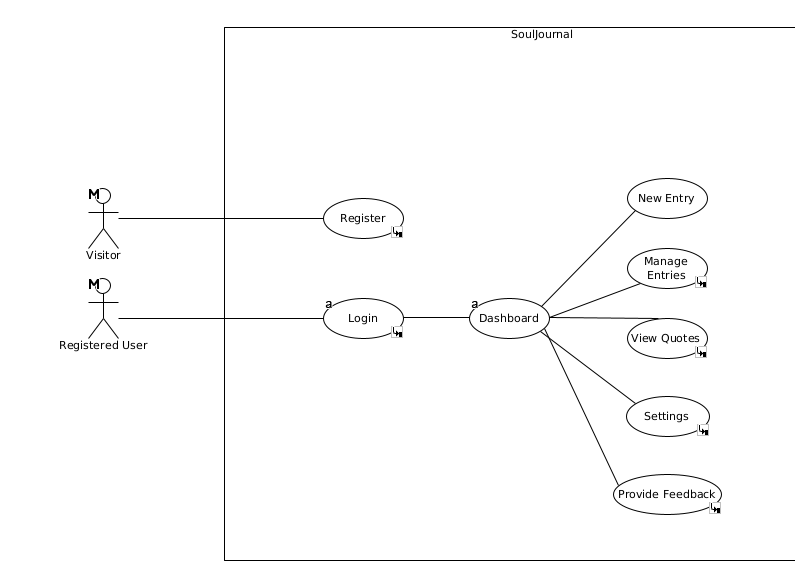
* The application should provide a user interface focused on the writing experience.
* Users should be able to customize the application’s appearance, such as themes, fonts and layouts.

1. **User Feedback and Suggestions**

* Users should be able to submit feedback, suggestions, or report issues within the application.

1. **Top Level Use Case Diagram**

The following diagram outlines the actors and how they interact with the **SoulJournal** web application(Figure 1.1)

Figure 1.1: Top-Level Use-Case Diagram

1. **Register**

Figure 2.1: Register User

|  |  |
| --- | --- |
| **Name** | **Register Customer** |
| **Description** | A non-registered user registers with the system |
| **Priority** | This is a **high** priority requirement. |
| **Scope** | This allows new users to create an account and access the full functionality of the **SoulJournal** application. |
| **Precondition** | The user is not registered with the system. |
| **Flow Description** | |
| **Activation** | This use case starts when an unregistered visitor attempts to create a new account. |
| **Main Flow** | * The user selects the option register. * The system displays the registration form. * The user enters their personal information(first name, last name, email, password). * The user submits the registration form. * The system validates the provided information. * The system creates a new user account. * The system displays the Login page |
| **Alternate Flow** | |
| **Title** | **Description** |
| **The user cancels the registration process** | A1.1. The user cancels the registration process.  A1.2. The use case terminates |
| **Exceptional Flow** | |
| **Title** | **Description** |
| **The provided information (email/password) is invalid** | E1.1. The system displays an error message. (**Title**)  E1.2. The user is prompted to correct the information.  E1.3. The use case continues from main flow 3. |
| **Post-Condition (For Successful Main Flow)** | |
| **Title** | **Description** |
| **Termination** | The system displays registration is successful and the user is given the option to go to the Login section in the SoulJournal application |

1. **Login**

Figure 3.1: Login

|  |  |
| --- | --- |
| **Name** | **Login User** |
| **Description** | A registered user logs in the web application |
| **Priority** | This is a **high** priority requirement. |
| **Scope** | This use case describes the process of a registered user authenticating themselves by providing their credentials to gain access to the SoulJournal application. |
| **Precondition** | The user has a registered account. |
| **Flow Description** | |
| **Activation** | This use case starts when a registered user attempts to log in to the application. |
| **Main Flow** | * The system displays the login form. * The user enters their information (email, password). * The user submits the login form. * The system validates the provided information. * The system logs the user into their dashboard |
| **Alternate Flow** | |
| **Title** | **Description** |
| **N/A** | N/A |
| **Exceptional Flow** | |
| **Title** | **Description** |
| **The provided information (email/password) is invalid** | E1.1. The system displays an error message.(**Title**)  E1.2. The user is prompted to enter the correct information.  E1.3. The use case continues from main flow 2. |
| **Post-Condition (For Successful Main Flow)** | |
| **Title** | **Description** |
| **Termination** | The user is logged in to the SoulJournal application dashboard. |

1. **New Entry**
2. **Journal**
3. **Quotes**
4. **Settings**

### Data requirements

### User requirements

### Environmental requirements

### Usability requirements

## Design and Architecture

Describe the design, system architecture and components used. Describe the main algorithms used in the project. (Note: use standard mathematical notations if applicable).

An architecture diagram may be useful. In case of a distributed system, it may be useful to describe functions and/or data structures in each component separately.

## Implementation

Describe the main classes/functions used in the code. Consider to show and explain interesting code snippets where appropriate.

## Testing

Describe any testing tools, test plans and test specifications used in the project

## Graphical User Interface (GUI) Layout

Provide screenshots of key screens and explain.

## Customer testing

Provide evidence for and results of customer testing. This may include ratings or quotes from the customer.

## Evaluation

How was the system evaluated and what are the results? In many cases this will include usage data and user feedback. It may also include performance evaluations, scalability, correctness, etc. depending on the focus of the project.

Quantitative results may be reported in tables or figures. Note that tables have their caption above the table and need to be cross referenced in the text (see Table 1). In many cases, tables are better to read if you skip the vertical lines.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Nwithout** | **Nwith** | **Std.-Deviationwith** | **Std.-Deviationwithout** | **p** |
| Records | 100 | 200 | 2.54 | 3.97 | .002 |
| Data (GB) | 100 | 200 | 2.54 | 3.97 | .002 |
| Speed | 100 | 200 | 2.54 | 3.97 | .002 |

Table 1: Performance with and without caching

Figures have their caption below the figure as shown in Figure 1Error: Reference source not found Make sure that if you use colour, the figure is still readable when printed in black & white, e.g., by using additional symbols, patterns, etc.



Figure 1: Learning gain across different experimental groups

# Conclusions

Describe the advantages/disadvantages, opportunities, and limits of the project.

# Further development or research

With more resources, where could the results of this project lead to?

# References

It is recommended that students use the APA, Berkeley, Harvard or other internationally approved style. Here is an example of the APA citation style:

Wilcox, R. V. (1991). Shifting roles and synthetic women in Star Trek: The Next Generation. *Studies in Popular Culture, 13*(2), 53-65.

In the text this article can be cited as “Wilcox (1991)” or “(Wilkox, 1991)”.

References to websites must include the access dates.

The NCI library provides a guide on referencing

<https://libguides.ncirl.ie/referencingandavoidingplagiarism>

# Appendix

## Project Proposal

## Project Plan

## Requirement Specification

## Monthly Journal

## Other Material Used

Any other reference material used in the project for example evaluation surveys, etc.