Milestone 1 submission

Team name

NoTiFy

Proposed level of achievement

Gemini

Aim

We aim to create a website whereby students can collaborate to create and share notes that supports MarkUp languages and commonly-used note taking formats. By providing a user-friendly and feature-rich environment for note-taking and sharing, our platform will facilitate effective learning and knowledge sharing among students. In addition, our goal is to provide a comprehensive study material creation tool that streamlines the process of organising and accessing notes for students. By offering a centralized platform for note-taking, our tool will enable students to easily locate and review their study materials in a convenient and efficient way.

Motivation

As computer science students, the modules that we have taken so far have required us to create our own notes, as well as cheatsheets for the exams. A commonly used tool for collaborative notemaking amongst students is Google Docs. However, we realised that it was almost impossible to create a cheatsheet that was space-efficient, due to the strict formatting rules permitted on Google Docs. It was also difficult to format the notes in the ways we desire.

One possible solution to these issues was to use other platforms such as Overleaf, which supports MarkUp languages, thus allowing for more control over how we can format our notes. Platforms like Miro and Canva are also helpful if we intend to create a mindmap or brainstorm for ideas with others. However, by using multiple applications to manage our notes, we increase the inconvenience we face while trying to revise for our exams.

Hence, we wondered if it was possible to have a collaborative website that has a text editor which supports MarkUp languages as well as other note formats, such as an exam cheatsheet, flashcards, post-it notes and diagrams, thus allowing us to manage all our notes on a single platform.

Vision

We envision NoTiFy to be an important collaborative note taking tool where users will be able to easily create and share their knowledge and content. This will be achieved through the users employing the available features on the website, such as MarkUp language support, allowing for a more convenient and flexible note-taking experience. Users can also save time by choosing from the wide range of templates that we provide for various note types.

User stories

1. As a student, I can create a cheat sheet for my exam using the markdown language note creation feature on NoTiFy so that I have greater control over the typesetting and formatting of my document than if I used Google Docs or Microsoft Word that only provides a rich text editor.

2. As a student, I can collaborate with friends to create notes or cheatsheet, so that I can spare more time to work on other assignments and projects.

3. As a student, I can collaborate with friends to make notes, and read their understanding of the topic and compare it with mine so that I can identify which parts I need to work on and learn from them. As a student, if I have doubts about my friends' notes, I can point them out by commenting on that specific section, so that they can learn and correct their mistakes.

4. As a student who uses many different note formats to study for various subjects (e.g. flashcards for medical science, cheat sheets for math and slides for history) I want all my notes all in one platform so that I can access them easily without having many applications and websites open just to find my notes.

Features

- Webpage
  - Hosting
    - Proposed: MongoDB database and collections to be hosted on MongoDB Atlas,
    - Current progress: MongoDB database and website are hosted locally.
  - Account management
    - Proposed: Users will be able to register accounts with email authentication.
    - Current progress: Basic registration and login features implemented. Authentication with JsonWebToken implemented.
  - File management
    - Proposed: Users will be able to upload, share with other users, edit and download their files on the platform.
    - Current progress: Working on rudimentary file upload and download with the Multer and GridFS packages.
- Text editor
  - Rich text editor:
    - Proposed: An in-house rich text editor whereby users are able to select if they want to create a regular document or a document that supports MarkUp source code.
    - Current progress: Implemented a rich-text-editor using the Quill package.
  - MarkUp language support:
    - Proposed: Users will be able to use our text editors to type in MarkUp source code (Markdown and LaTeX support planned) and export the file as a PDF. There will be a real time side-by-side view of MarkUp source code and output PDF implemented as well.
    - Current progress: Identified React packages such as KaTeX and react-markdown that will help us implement this feature.

- Additional types of notes:
    - Proposed: Users will be able to select which type of document they would like to create when they attempt to create a new set of notes. Planned types of notes: A4 cheat sheet, post-it notes, flashcards, mind-maps, diagrams.
- Collaborative Features
  - File sharing:
    - Proposed: Users will be able to share files with each other. Once a user is granted permission to access a file, he/she will be able to edit and download it.
  - Concurrent editing:
    - Proposed: Multiple users will be able to edit the same file concurrently.
  - Communication:
    - Proposed: A comment and reply system will be implemented, along with a live chat function.

Timeline

Milestone 1

Tasks	Description	Member Assigned to task	Date
Preliminary familiarization with required software and materials.	Familiarization with JavaScript. Familiarization with React, NodeJS and MongoDB.	Jeremy Shuang Shuang	13/5/23 - 20/5/23
Website skeleton	Full stack React-based webpage using NodeJS, ExpressJS with MongoDB integration. Registration feature implemented.	Jeremy	20/5/23 - 22/5/23
Website styling	Webpage styling with React and HTML.	Shuang Shuang	21/5/23 - 28/5/23
Login, logout and authentication	Implementation of login, logout and JsonWebToken based authentication.	Jeremy	22/5/23 - 23/5/23
Rich text editor integration	Rich text editor page implemented with external packages.	Shuang Shuang	23/5/23
Research into required packages and ideation on implementation of key features.		Jeremy Shuang Shuang	24/5/23 - 26/5/23
Preparation for Milestone 1	Refactoring code and debugging, preparing documentation.	Jeremy Shuang Shuang	27/5/23 - 28/5/23

Evaluation at Milestone 1: 29/5/23

- Ideation
- Proof-of-concept:
  - Webapp built with MERN stack
    - Basic features:
      - Registration
      - Login
      - Authentication

- - Key features:
    - - Rich text editor

Milestone 2

Tasks	Description	Member Assigned to task	Date
Refactoring code	Refactoring and debugging code from Milestone 1 in order to support further features.	Jeremy Shuang Shuang	29/5/23 - 4/6/23 (Week 4)
Text editor	Building a rich text editor from the ground up.	Jeremy Shuang Shuang	29/5/23 - 11/6/23 (Week 4/5)
MarkUp language support in text editor	Planned MarkUp languages to be supported: MarkDown, LaTeX.	Jeremy Shuang Shuang	4/6/23 - 18/6/23 (Week 5/6)
Integration of file uploading, editing and downloading with text editor.	Allows users to open up the files they upload and edit them.	Jeremy	11/6/23 - 18/6/23 (Week 6)
Further types of notes.	Implementation of post-it notes.	Shuang Shuang	11/6/23 - 18/6/23 (Week 6)
Implementation of basic file sharing	Allow 2 users to share files with each other.	Jeremy Shuang Shuang	11/6/23 - 18/6/23 (Week 6)
Preparation for Milestone 2	Refactoring code and integration of features. Hosting of website, database, testing and debugging	Jeremy Shuang Shuang	18/6/23 - 26/6/23 (Week 7)

Evaluation at Milestone 2: 26/5/23

- First working prototype:
  - File management:
    - Upload
    - Sharing between 2 accounts
    - Editing
    - Download
  - Text editor:

- Rich text editor
- MarkDown, LaTeX support
  - Further features:
    - Post-it notes

Milestone 3

Tasks	Description	Member Assigned to task	Date
Refactoring code	Refactoring and debugging code from Milestone 2 in order to support further features.	Jeremy Shuang Shuang	26/6/23 - 2/7/23 (Week 8)
Enhanced file sharing	Allows multiple (>2) accounts to share and edit the same document. Allows for concurrent editing of the same document.	Jeremy Shuang Shuang	26/6/23 - 9/7/23 (Week 8/9)
Further collaborative features	Comment system.	Jeremy Shuang Shuang	26/6/23 - 9/7/23 (Week 8/9)
Enhanced MarkUp language support	Side by side live view of source code and output. Export to PDF.	Jeremy Shuang Shuang	2/6/23 - 9/7/23 (Week 9)
Further types of notes	Cheat sheet	Jeremy Shuang Shuang	10/6/23 - 17/7/23 (Week 10/11)
Preparation for Milestone 3	Refactoring code and integration of features. Testing and debugging	Jeremy Shuang Shuang	18/6/23 - 24/7/23 (Week 12)

Evaluation at Milestone 3: 24/7/23

- Minimum viable product: MVP
  - Collaboration:
    - Concurrent editing
    - Multiple users
    - Comment system and live chat
  - Editor:
    - Side-by-side live view of MarkUp source code and output.
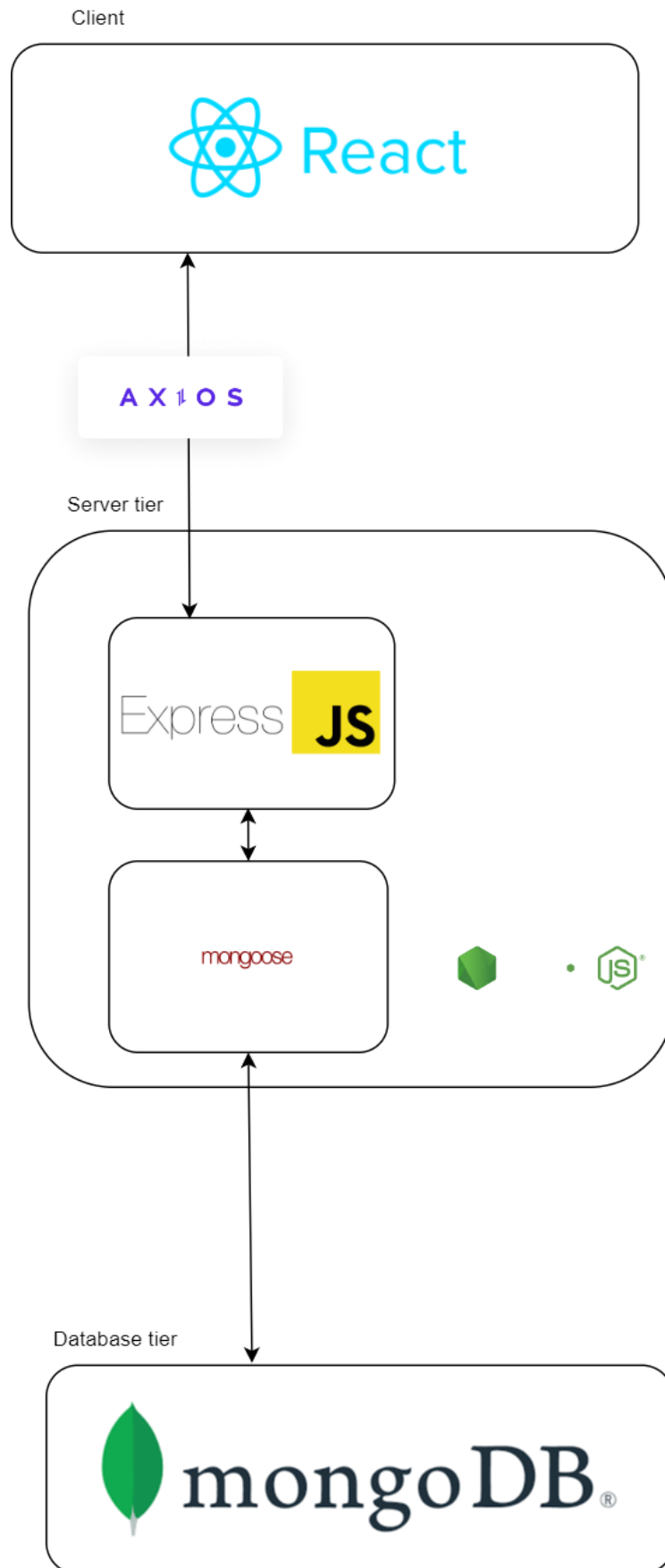   - Export to PDF.

Splashdown

Tasks	Description	Member Assigned to task	Date
Refactoring code	Refactoring and debugging code from Milestone 3 in order to support further features.	Jeremy Shuang Shuang	24/7/23 - 30/7/23 (Week 13)
Further collaborative features	Live chat.	Jeremy Shuang Shuang	31/7/23 - 6/8/23 (Week 14)
Further types of notes	Flashcards, mind-maps, diagrams	Jeremy Shuang Shuang	31/7/23 - 13/8/23 (Week 14/15)
Optimization and refinement	Exploration of different modules and packages that can help the webpage run better and enhance user experience.	Jeremy Shuang Shuang	7/8/23 - 21/8/23 (Week 15/16)
Preparation for Splashdown	Refactoring code and integration of features. Testing and debugging	Jeremy Shuang Shuang	14/8/23 - 23/8/23 (Week 16)

Evaluation at Splashdown:

- Refined minimum viable product
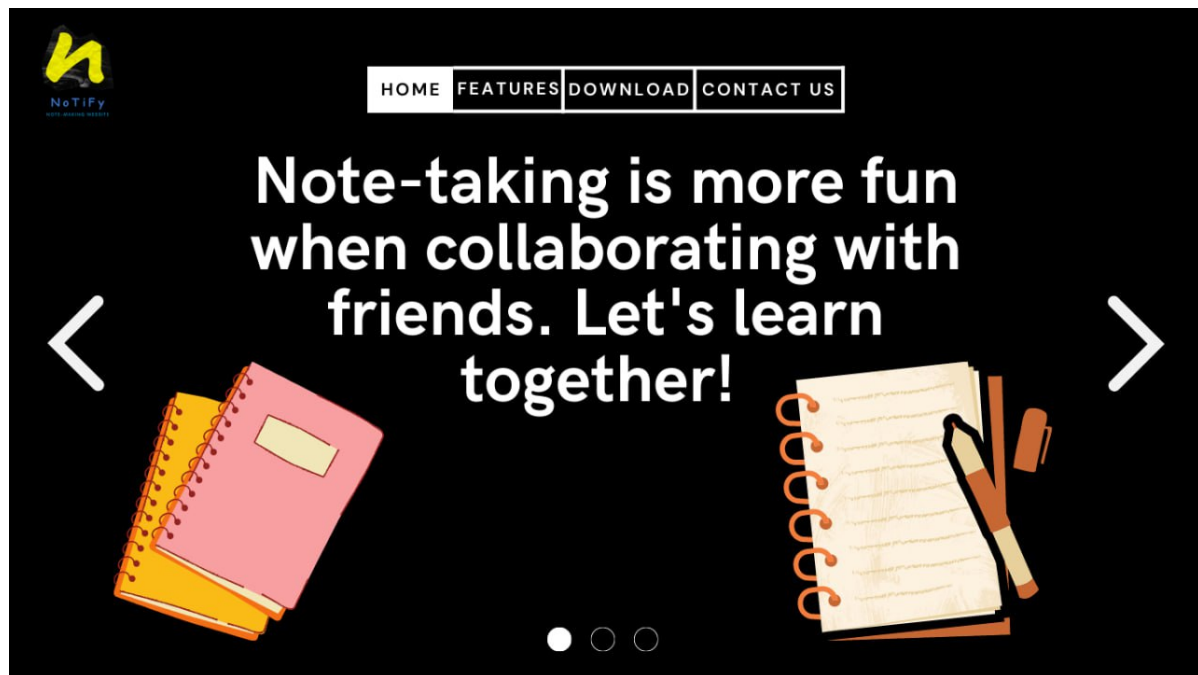
Technology stack:

Mockup and webpage flowchart:

NoTiFy

Text Input

Light mode

DOCUMENT OUTLINE

→ Introduction

→ Point 1

Source
```
1  \documentclass{article}
2
3
4
5
```

NoTiFy

All Notes

Recents

Unfiled

Folders

SAMPLES

Folder 2

Folder 3

SAMPLES

sample doc 1

sample doc 2

sample doc 3

sample doc 4

sample doc 5

sample doc 6

```
                          ┌─────────────────┐
                          │   Main page     │
                          └─────────────────┘
                           │               │
                           ▽               ▼
         ┌─────────────┐         ┌───────────────────┐
Logout   │ Login page  │◄─Register─│ Registration page │
         └─────────────┘         └───────────────────┘
                │
              Login
                ▼
         ┌─────────────┐         ┌───────────────────┐
         │  Dashboard  │◄──────►│      Editor        │
         └─────────────┘         └───────────────────┘

   ┌──────────────┐   ┌──────────────────────┐
   │ My contacts  │   │ My Files/Shared with │
   │              │   │          me          │
   └──────────────┘   └──────────────────────┘
```
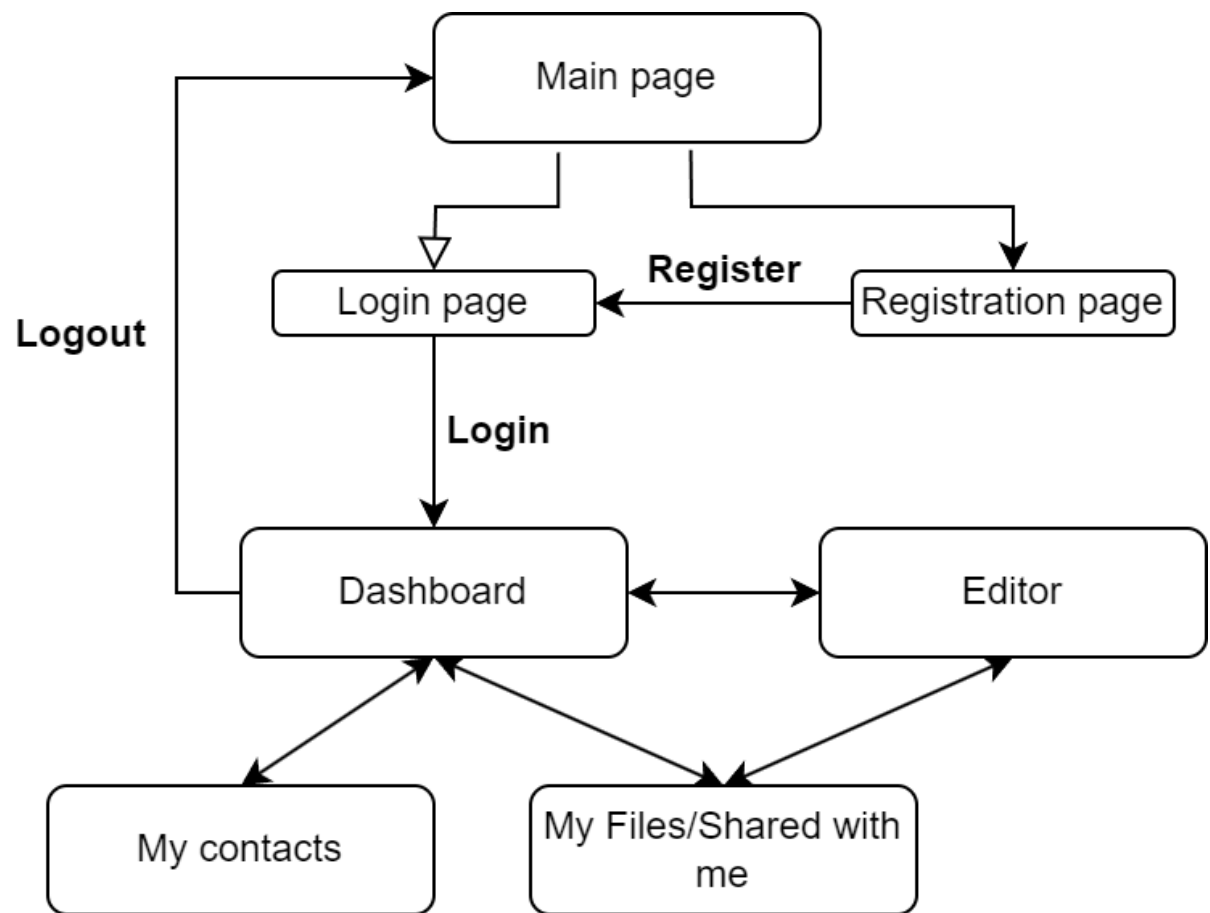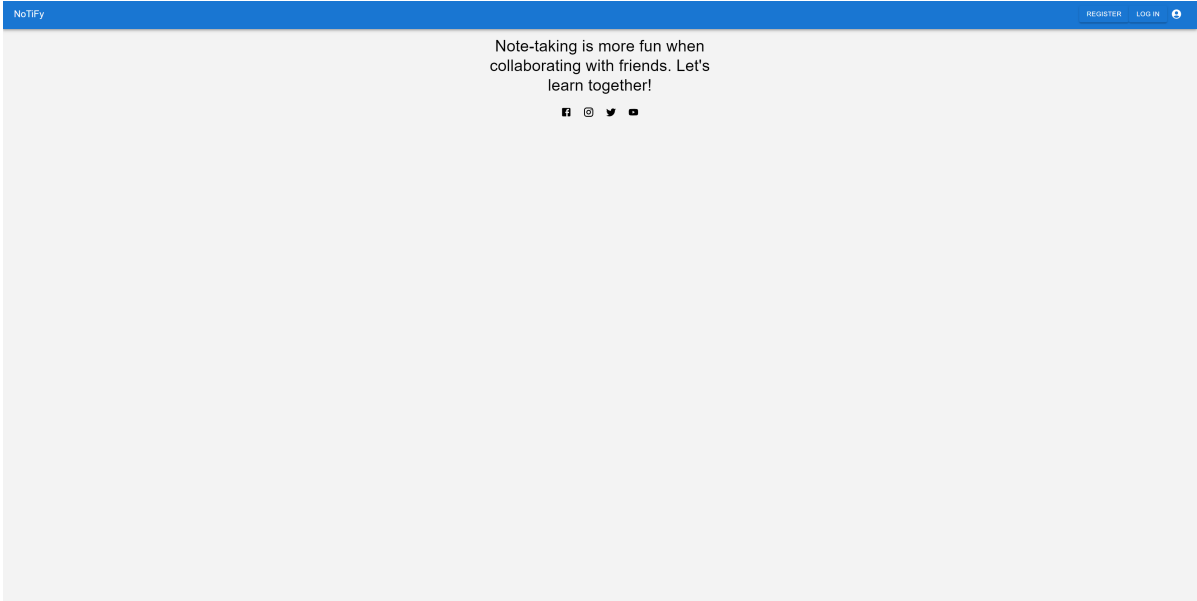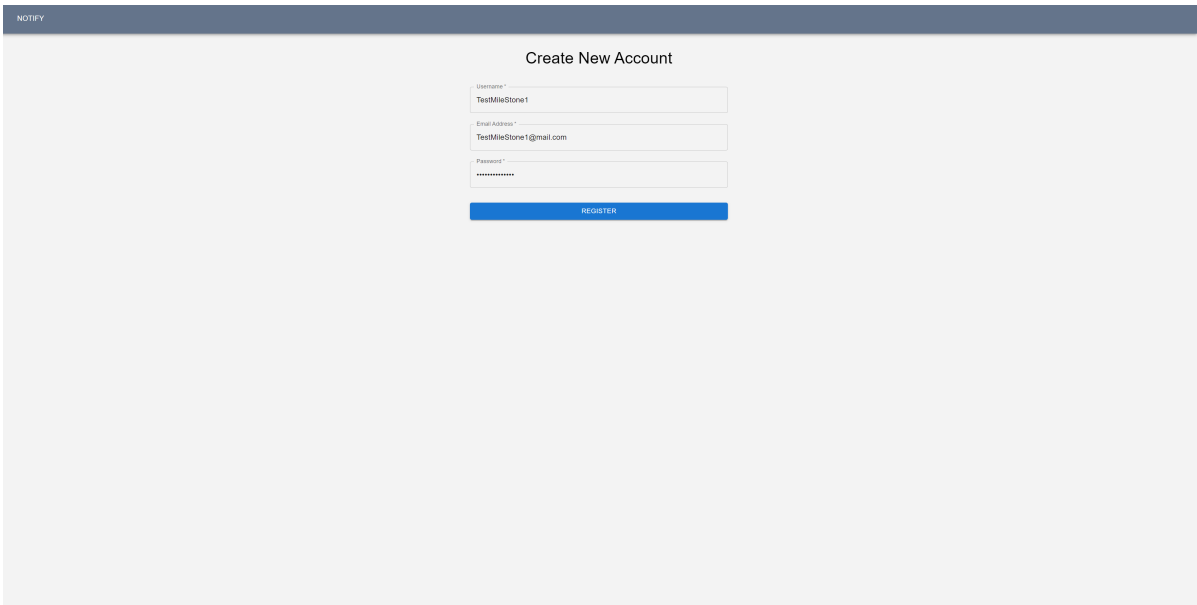
Technical proof:

Homepage

Create new account

Login

Log in

Email Address/Username *
TestMileStone1

Password *
••••••••••••

☑ Remember me

LOG IN

Text editor

Title *
Welcome

Please enter title

LOGOUT

Normal ⬍ | Sans Serif ⬍ | ≔ ≡ | B I U | A ⬚ | x₂ x² | ⬍ | ❝ ⟨⟩ | ⨍ₓ

Hello, this is NoTiFy!|

Account saved to database

MongoDB Compass - localhost:27017/user-basic.users

Connect   Edit   View   Collection   Help

localhost:27017   ...

Documents
user-basic.users   +

{} My Queries

Databases

admin
config
local
user-basic
   users   ...

user-basic.users

2 DOCUMENTS   **3** INDEXES

Documents   Aggregations   Schema   Explain Plan   Indexes   Validation

Filter   🕐 ▾   Type a query: { field: 'value' }   Reset   Find   ‹/›   More Options ▸

⊕ ADD DATA ▾   ⬀ EXPORT COLLECTION   1–2 of 2

```
_id: ObjectId('646de1798ab9307cd9f1b0dc')
username: "TestNewDevice"
email: "TestNewDevice@mail.com"
password: "$2b$16$VHsL96MAaBxICR2P/fSDoOZ69UxKsb0wUdU0Cm0hkXB9Ncod3NpNy"
__v: 0
```

```
_id: ObjectId('6471cc112ef5ea30c85cb067')
username: "TestMileStone1"
email: "TestMileStone1@mail.com"
password: "$2b$16$9oEj0IXPicPLGQP4zaL3Cu77.z9/FpxFso9XbKCuuXzAS34FDOIHq"
__v: 0
```

>_MONGOSH