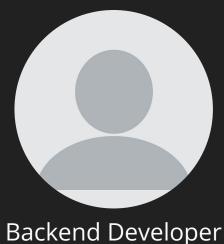# Futaba's Friday

Doc McStuffins

Team Details

Dyno Wibowo

Backend Developer

Sprint 2 Scrum Co-master

- prior web development experience
  - INFO30005 Web Information Technologies
- has quantum computing PTSD

Joshua Situwali

Frontend Developer

Sprint 2 Scrum Co-master

- prior web development experience
    - Going in bold and blind
    - Thought Frontend would be easier
- Colourblind.
    - yes , colour > color
- Googling expert for anything react / css related.

Livya Riany

Lead Frontend Engineer

Sprint 1 Scrum Co-master

- prior web development experience
  - INFO30005 Web Information Technologies
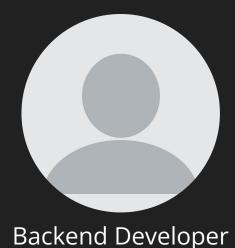
Nathanael Putro

Lead Backend Engineer

Project Manager

Scrum Product Owner

- pre-2018 HSC survivor
- prior web development experience
  - CS50x
  - INFO30005 Web Information Technologies
- writer of documentation
- establisher of standards

Stanley Wirian

Backend Developer

Sprint 1 Scrum Co-master

- pre-2018 HSC survivor
- no prior web development experience
- code whisperer
- loves hunting bugs
  - real insects are scary though

Requirements

Requirements: Core

Functional:

- users
  - registration
  - authentication
  - profile update
- contacts, groups, memos
  - CRUD operations
  - dashboard overview
- contacts, groups
  - name-based search

Non-functional:

- web application
- UI/UX
  - blue-based color scheme
  - simple and minimalistic feel
- security
  - user authentication
  - data storage

Requirements: Optional

Functional:

- contacts
    - picture upload
- contacts, groups
    - name-based search via dashboard

Design

Design: Backend: Architecture

- RESTful API → server + database

- facilitates CRUD operations

Design: Frontend: Architecture

- facilitate request and response from backend

- fully frontend based search and image resizing functionality

- React stack

  - view layer: React component and function

  - state management: local storage

  - API client: Axios

Design: Frontend: UI/UX

- usability testing

- user personas

- hours of client meetings

Design: Testing

- separate testing database + environment

- backend

  - integration testing

  - Continuous Integration

- frontend

  - functional testing

  - acceptance testing

Design: Deployment

- Continuous Deployment
  - separate production database + environment
- API server serves:
  - API calls
  - frontend

Technologies

Technologies: Design

- modeling
  - draw.io
  - Motivational Model Editor
- UI/UX
  - Canva
  - Figma
  - Miro

Technologies: Backend

- TypeScript
- server
  - Node.js + Express → web framework
- security
  - Passport.js + bcrypt → user authentication
  - validator.js via express-validator → data validation
- database
  - Mongoose ODM + MongoDB → persistent storage
- testing
  - Jest + supertest → automated testing

Technologies: Frontend

- TypeScript

- web interface

  - Axios → connecting backend and frontend

  - HTML + Bootstrap → base framework for CSS

  - React.js via Create React App

Communication Tools

- internal team communication
    - Discord → voice calls
    - GitHub → code reviews
    - Slack → regular updates
    - Trello → work assignments
- client + supervisor meetings
    - Zoom

What was delivered?

- GitHub repository
  - code base
  - documentation
- Heroku application
- MongoDB Atlas cluster

Key Challenges: General

- 2 out of 5 members are unfamiliar with MERN stack

- time zone differences

  - problem compounded by vastly different working habits

Key Challenges: Backend

- no prior experience with Test Driven Development
  - writing tests are tedious
- Jest (Integration Testing) and CI Issues
  - MongoDB bandwidth, concurrency issues, socket connection issues

Key Challenges: Frontend

- Adjusting UI in the web application to look like the prototype
    - Adhere to initial design aspects approved by client whilst improving upon it. A delicate balance between functionality and design.

Key Accomplishments

- created standards for:
    - coding
    - testing
    - documentation
- established workflow
    - GitHub: feature branches → PRs → code reviews → CI/CD
    - Trello: work assignment + GitHub integration

Live Demo

Slide Allocations

- Dyno: 3, 8-10, 19, 26

- Josh: 4, 13-14, 17-18, 20, 25

- Ivy: 5, 28

- Nathan: 1-2, 6, 15-16, 21-22

- Stan: 7, 11-12, 23-24