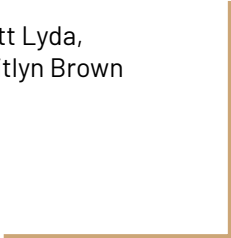


# Coding Buddy

Coding Baddies:  
Jack Toenjes, Calvin Wagner, Wyatt Lyda,  
Christina Fernandez, Ben Willcutt, Kaitlyn Brown



# Coding Buddy Description



- Interactive Tool
- Tests, Coding Exercises, Flashcards



- Class Based
- CU Boulder Students

# Technology Stack: Hosting and Organization



Docker

- Supplied us with containers to run our application.

Ranking: ★ ★ ★ ★ ★



GitHub

- Version control tool, used to create branches and our project board.

Ranking: ★ ★ ★ ★ ★



VS Code

- IDE, platform used to write code and connect to GitHub.

Ranking: ★ ★ ★ ★ ★



Render

- Hosting service, used to host Coding Buddy at a public domain.

Ranking: ★ ★ ★ ★ ★

# Technology Stack: Database and Backend



PostgreSQL

- Used to create the database and insert data.
- Ranking: ★ ★ ★ ★ ★



Node.js

- Used to create get and post routes for the different pages.
- Ranking: ★ ★ ★ ★ ★



JavaScript

- Used to create timers, progress bars, and features in motion.
- Ranking: ★ ★ ★ ★ ☆



Piston

- Used to compile the users C++ code and generate an output.
- Ranking: ★ ★ ★ ★ ☆

## Technology Stack: Backend Tools

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Nodemon

- Restarted docker containers at each update.
- Ranking: ★ ★ ★ ★ ★



Mocha/Chai

- Created test calls for post and get routes.
- Ranking: ★ ★ ★ ★ ★



Express

- Framework used to build our backend. Handled session management, hashing passwords, and parsing form data.
- Ranking: ★ ★ ★ ★ ★

# Technology Stack: Frontend



HTML

- Used to create forms and structure the front end.
- Ranking: ★ ★ ★ ★ ★



Handlebars

- Templating engine used connect HTML and Node.js responses.
- Ranking: ★ ★ ★ ★ ★



CSS

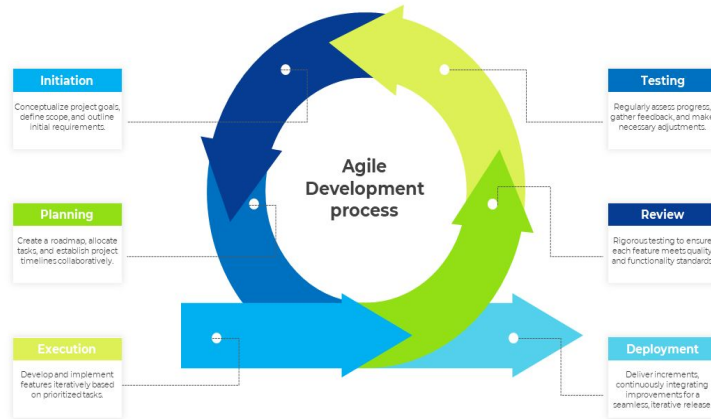
- Used to style the pages.
- Ranking: ★ ★ ★ ★ ★



Bootstrap

- Used to add external styling and functionality.
- Ranking: ★ ★ ★ ★ ☆

# Methodology

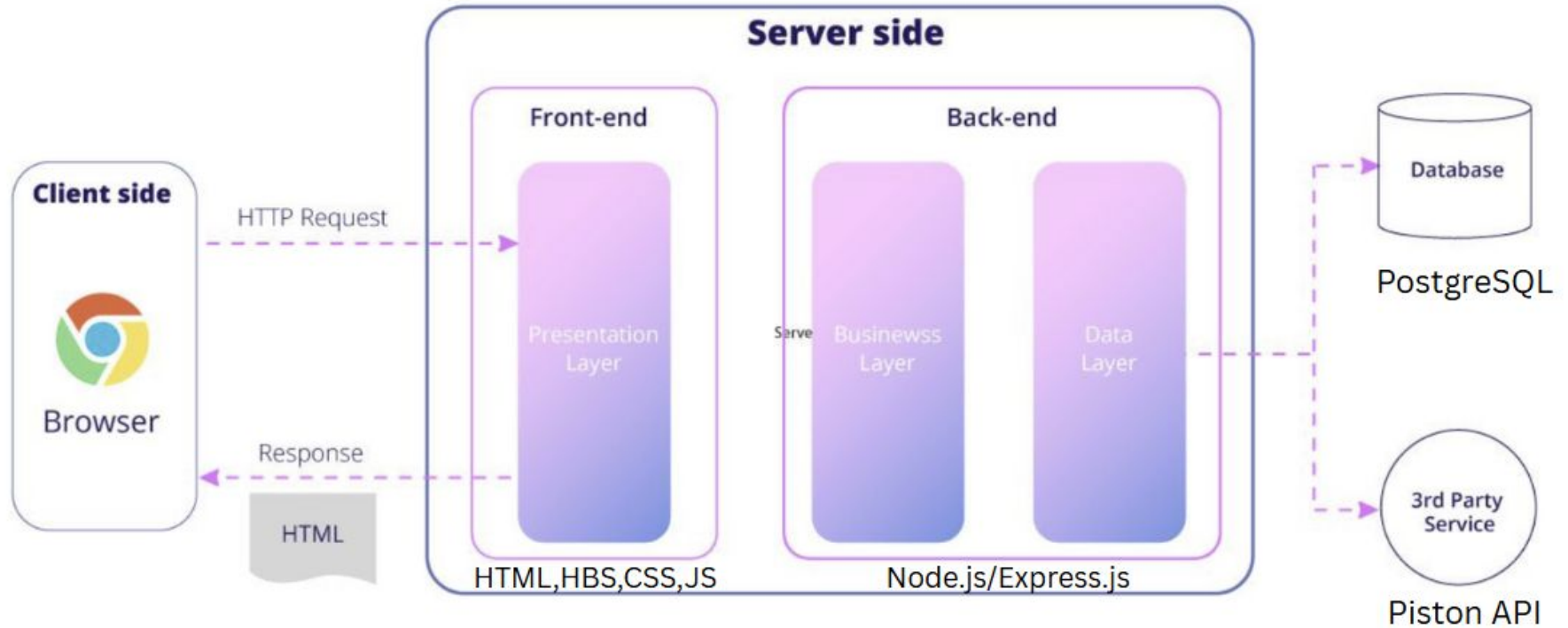


- Agile Project Management
- Iterative Development

- GitHub Projects Kanban Board
- Epics/User Stories



# Architecture Diagram





Demo

Coding-Buddy

# List of Functionalities

- Login - remember me
- Register- cannot register without username, email, and password
- Coding Practice
  - Timer
  - Course buttons generate questions
  - Save coding after submit, clears it when done with all of them.
  - Message pops up with success or expected output vs generated output.
- MCQ
  - Courses
  - Check Answer
  - Points earned
- Flashcards
  - Edit/delete decks/cards (only if owner)
  - Create decks and cards (create card only if deck owner)
  - Flip front/back
  - Link to practice selected deck (via name)
- Flashcards practice (carousel)
  - Flip, next, prev, back
- Profile
  - Edit profile (name, username, email)
  - Change password
  - Percentage of questions done
  - Points earned
  - Ranking

# Challenges

- Coding environment API
- Merging code

+401,024 -24 

## CodeX API

---

CodeX Failed

This API is still in very early stages of development. So consider not using the API in production since things might change in the future.

# Future Enhancements

- Tailored Feedback
  - Coding test case-specific feedback
  - Flashcards assigned by quiz and coding practice
- UI Improvements
  - Randomization of MCQ questions
  - Select specific coding questions, allow retakes
  - Images
- User interactivity
  - Forum, messages, view other profiles, share flashcards
- Broaden audience-generic topics
  - Search and filter

Incorrect Output: "Original List 1: 1 2 3 4 5 \nReversed List 1: \nOriginal List 2: 10 20 30 \nReversed List 2: \nOriginal List 3: 42 \nReversed List 3: \n"  
Expected: "Original List 1: 1 2 3 4 5 \nReversed List 1: 5 4 3 2 1 \nOriginal List 2: 10 20 30 \nReversed List 2: 30 20 10 \nOriginal List 3: 42 \nReversed List 3: 42 \n"  
Time taken: -1 seconds

**1300 Quiz**

What is the output of the following code? `int x=5; cout<< x++;`

☐ A) 6

☐ B) 5

☐ C) Compilation Error

☐ D) Undefined Behavior

Time: 27s

## Regression Testing

card #2 created by user #1

Edit Card

Delete Card

Thank you!

Questions?