Pode

User Documentation
Version 1.0

Contents

1   Purpose of the System

Pode is a beginner-friendly programming learning tool designed to make coding as accessible and engaging as possible. Inspired by language-learning apps like Duolingo, it introduces a gamified approach that allows users to learn coding concepts through interactive exercises. As of now, the only supported language is Python.

2   Features
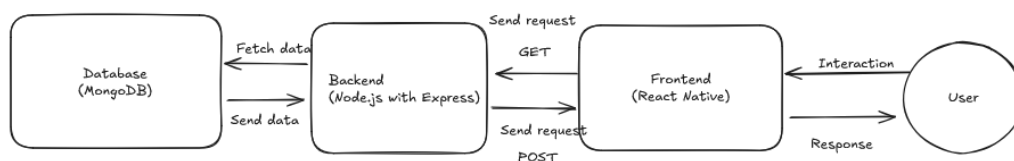
The application follows a three-layer architecture for its communication between frontend, backend and database as shown above in the figure. The backend includes the server that runs all the endpoints for the frontend to communicate with. Mongoose is used in the backend for easy data manipulation with the MongoDB database.

The frontend includes what is rendered to the user in the mobile application.

The application is built on TypeScript in both the back- and frontend. The data is handled in the MongoDB database on a BSON-based format which can easily be translated into JSON inside the application.

3 Usage

Since the demo-application is deployed as a web-application, it is suggested to run the application in browser either on a smartphone, or in device mode on a browser. The device mode can be accessed by opening devtools in browser (F12), and then pressing (ctrl+shift+m) to access device mode, and then reloading the page (F5).
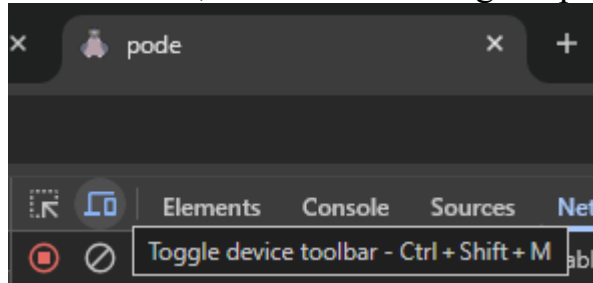
Register

To register a new user, press the register-button upon launching the app new user with a unique username and password and click the register button. Once you have registered, you will be presented with a welcome message.

Welcome Message

The welcome message gives a short explanation and guide about the application. This message can be accessed at any time by clicking the icon in the top left corner on the Progress map view.

Login

To log in as an existing user, press the log in-button upon launching the app and enter your username and password that you registered earlier.

Lessons

To start a lesson, press a lesson cloud in the progress map view. This will open the introduction view for a lesson. Read the short theory about the subject, and once you are done, start the lesson to begin the first exercise. Each lesson consists of about 4-6 exercises.

Exercises

Exercises consist mainly of a description, intended output and a piece of code to either analyze or complete. Different exercise types require different actions from the user. To move on to the next exercise you first have to put the correct answer for your current exercise. To check if your answer is correct, press the check-button. You will get a message on the screen that says if your answer was correct. If your answer was correct, press next to move to the next exercise. If your answer was incorrect, try selecting a different answer and check again.

Drop-Down Exercise

To do a drop-down exercise, after reading the question, click the drop-down menu and select an answer.

Fill In the Blanks Exercise

To do a fill-in-the-blanks exercise, you typically must complete code that is missing some syntax. Press the answer bubbles in the correct order to fill the holes and check your answer.

Box Exercise

To do a box exercise, you must complete a short line of code. Press the answer bubbles in the correct order to build a line of code, then check your answer.

Change avatar

Press the profile icon in the right corner on the progress map view to open Profile view, here you can change your avatar by pressing the avatar, and picking the icon you would like as your avatar

Log out

Press the profile icon in the right corner on the progress map view to open Profile view, here you can log out of your account by pressing the log out-button