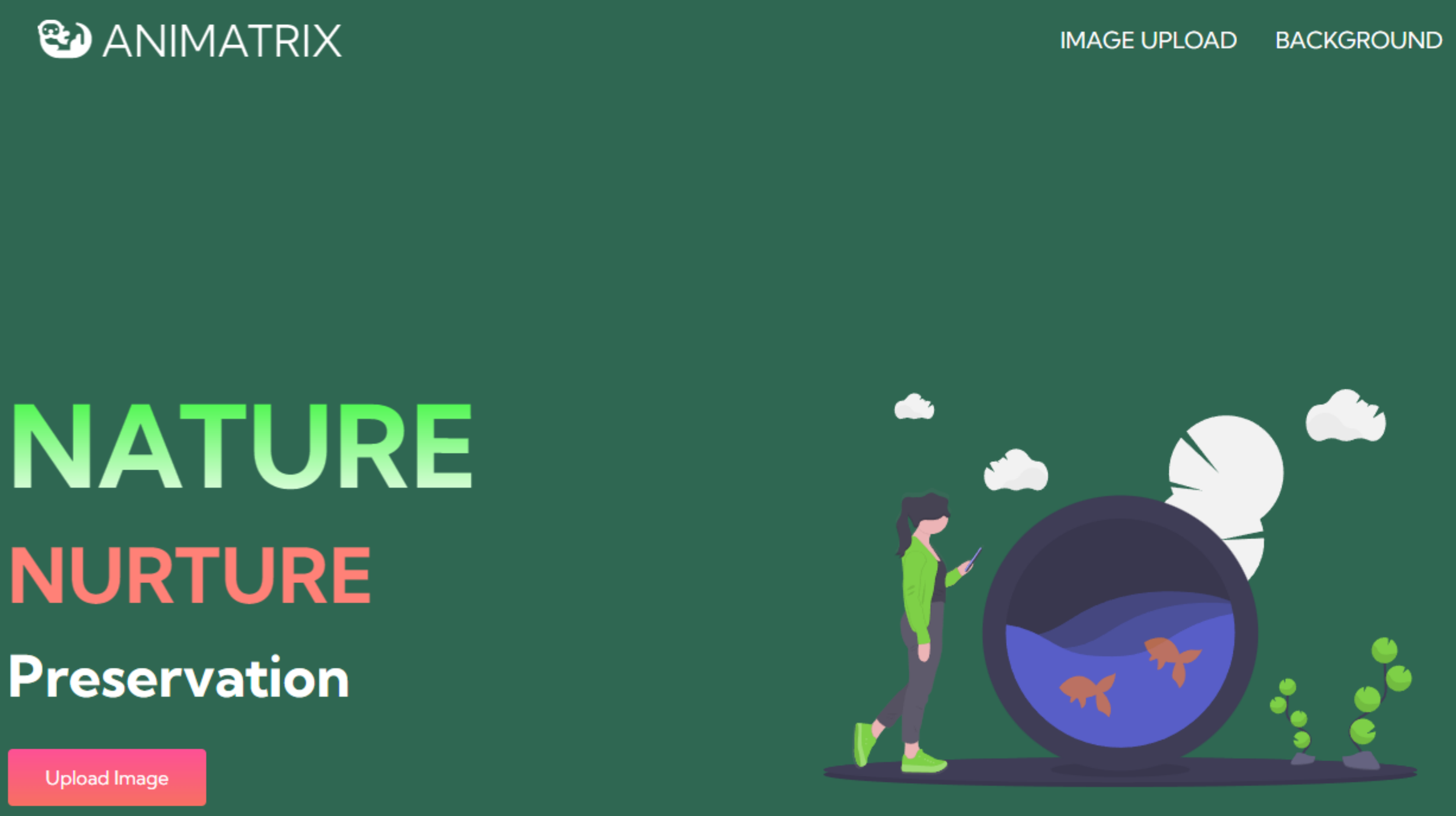


NATURE

NURTURE

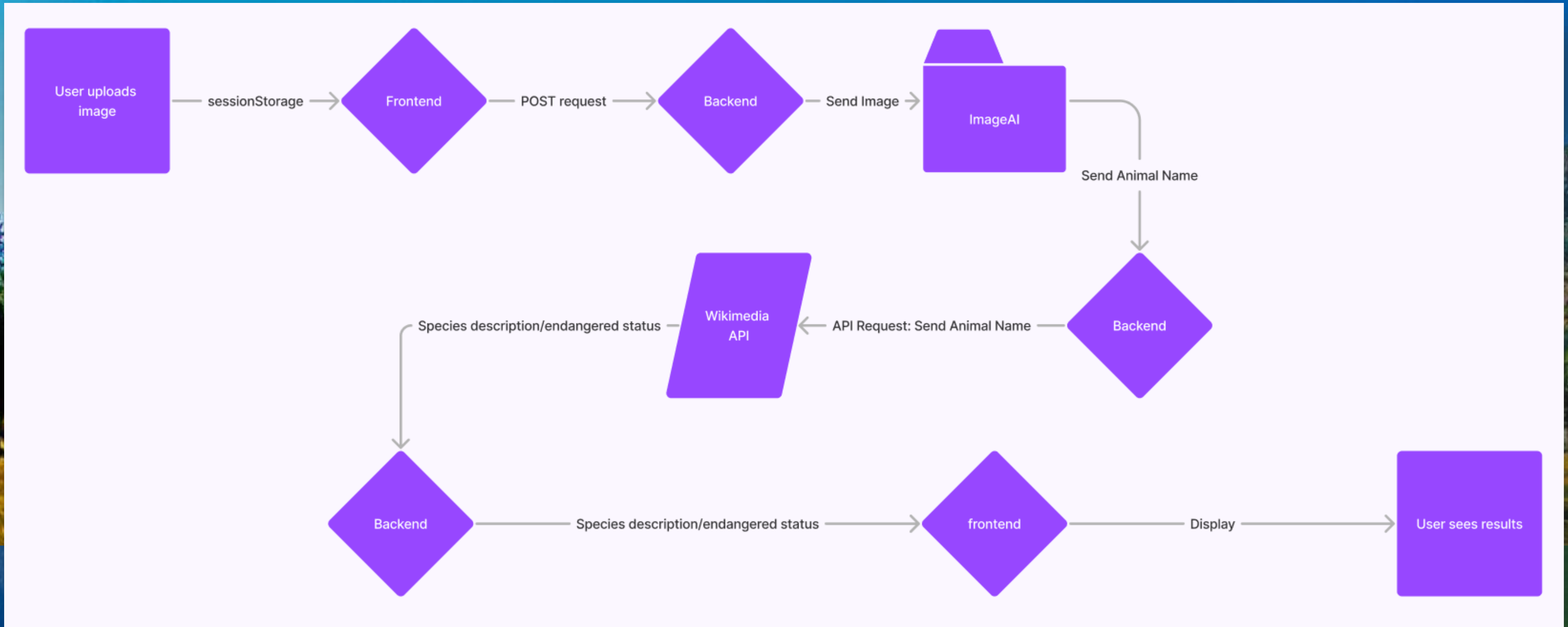
Preservation

Bruce Niemi, Risheit Munshi, Mohammed Fuzail, Teghveer Ateliey

MOTIVATION

To provide important information about species endangerment at your fingertips.

- For outdoor enthusiasts who need help identifying an animal, to students and teachers who want to combine education and exploration, this web app was build for everyone.
- We aim to build awareness on endangered species. With more awareness, the world can take action to preserve Earth’s biodiversity and natural beauty.
- Identifying animals is not easy on your own, our app is easy to use and adapts to pc and phone screens.



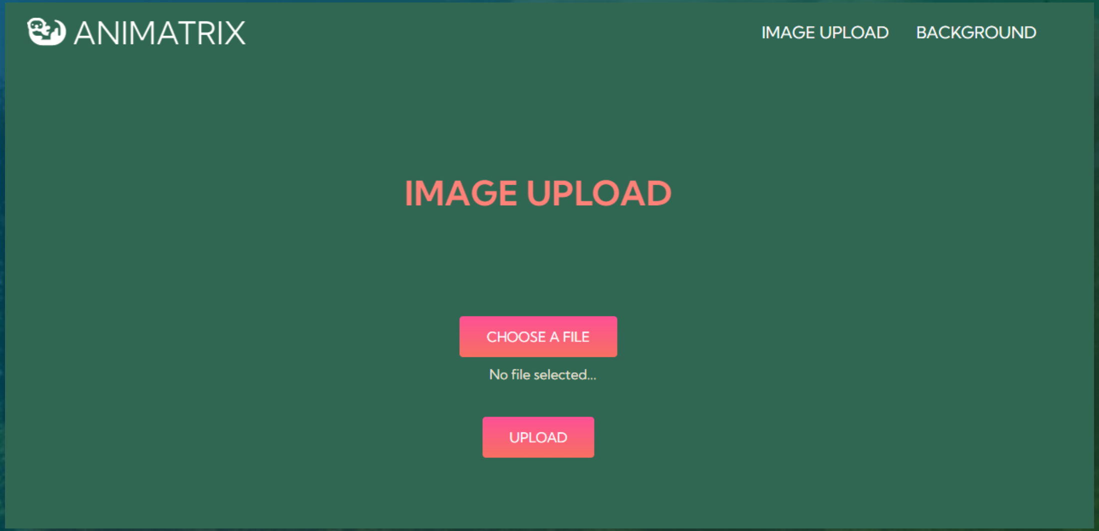
Project Flow

Our full-stack application utilizes ImageAI to identify animals from images and Wikimedia API to return information of the species.

How it works

UI/UX

- Simply click *CHOOSE A FILE* to upload any jpeg or png of an animal.
- Once your picture shows, click *UPLOAD* to send it to our server.
- The animal’s species, genus, endangerment status, and description will be displayed below.



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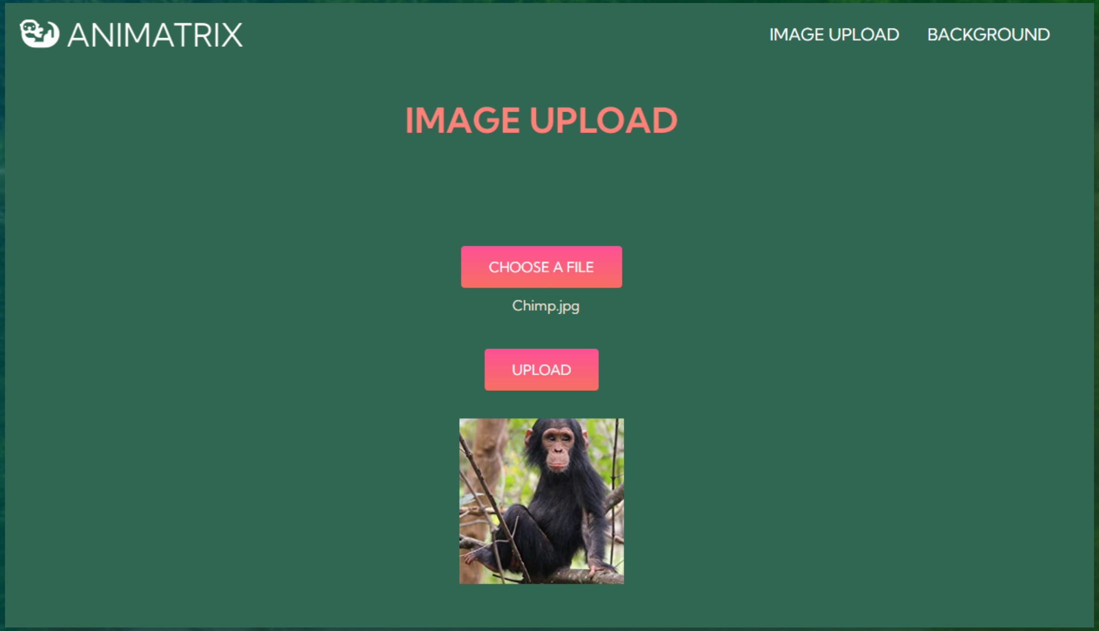


Chimp.jpg

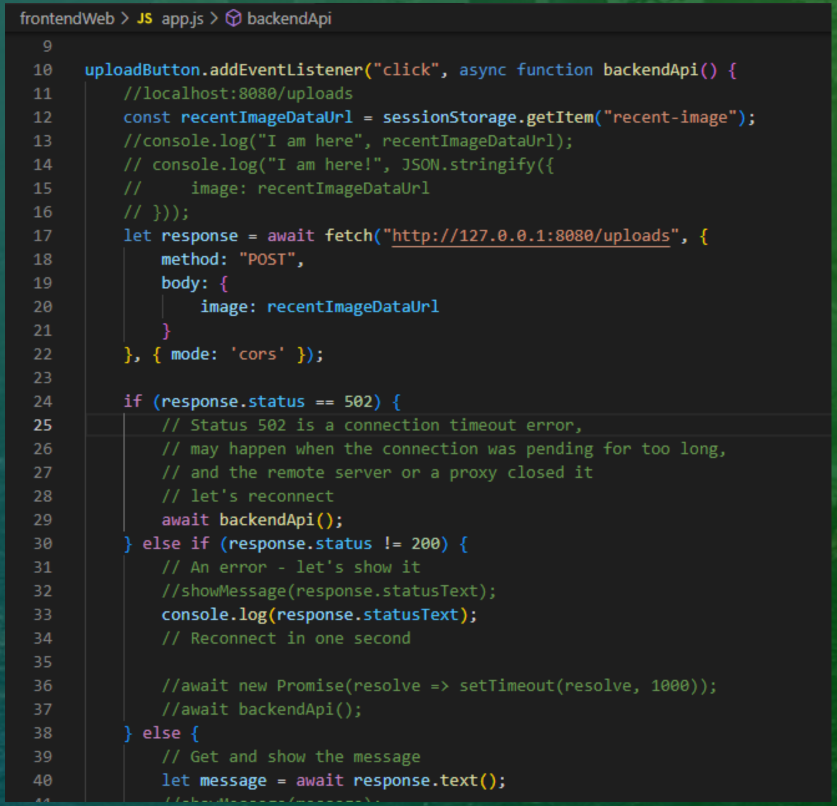
How it was built

- **Frontend**
  - HTML/CSS/JavaScript - session storage for images.
- **Backend**
  - Java/Kotlin server using Gradle-Wrapper.
  - Handles all API calls, communicates with all parts of the project.
- AI
  - Python - image fed to ImageAI as base64 string, returns what it identifies.
- Wikimedia API
  - Used to gain information on AI identified animals.
  - Communicates with backend.

Challenges

Issues and Challenges we ran into

- Connecting frontend and backend
  - Middleware ad sharing dependencies was a big challenge for us.
- Finding the API for animal info
  - Not many good APIs were available for our purpose that did not require us to get approved.
- UI/UX Design
  - Our group is inexperienced in web design.



frontendWeb > JS app.js > backendApi

```javascript

uploadButton.addEventListener("click", async function backendApi() {
    //localhost:8080/uploads
    const recentImageDataUrl = sessionStorage.getItem("recent-image");
    //console.log("I am here", recentImageDataUrl);
    // console.log("I am here!", JSON.stringify({
    //     image: recentImageDataUrl
    // }));
    let response = await fetch("http://127.0.0.1:8080/uploads", {
        method: "POST",
        body: {
            image: recentImageDataUrl
        }
    }, { mode: 'cors' });

    if (response.status == 502) {
        // Status 502 is a connection timeout error,
        // may happen when the connection was pending for too long,
        // and the remote server or a proxy closed it
        // let's reconnect
        await backendApi();
    } else if (response.status != 200) {
        // An error - let's show it
        //showMessage(response.statusText);
        console.log(response.statusText);
        // Reconnect in one second

        //await new Promise(resolve => setTimeout(resolve, 1000));
        //await backendApi();
    } else {
        // Get and show the message
        let message = await response.text();
```

What’s Next?

- Improve UI design.
  - A better web design would make our app feel more inclusive and welcoming.

- Return more information about animals and provide additional links.
  - A dedicated landing page for the results of the image upload would help display information better.

- Host web application for everyone to use.
  - Allow everyone to benefit from our vision.

Thank You!

ANIMATRIX