REFER & EARN PROJECT – OVERVIEW

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Project Title: Refer & Earn System (MERN Stack)
GitHub Link: https://github.com/aviraljain0/refer_earn_mern

This document briefly explains the working, technologies, and structure of the implemented **Refer & Earn System** developed using the MERN stack.

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1. Technologies Used

- **Frontend:** React (Vite)
- **Backend:** Node.js with Express
- **Database:** MongoDB Atlas (Cloud)
- **ORM:** Mongoose
- **Styling:** CSS
- **Version Control:** Git & GitHub

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2. Main Features

- User Registration
- Unique Referral Code Generation
- Apply Referral Feature
- Prevents duplicate referral usage
- Prevents self-referral
- Coin rewards fetched from MongoDB `Config` collection
- Profile viewing option (shows referral code and coin balance)

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3. Folder Structure

```
refer_earn/
│
├── backend/
│   ├── models/
│   ├── routes/
│   ├── utils/
│   ├── server.js
│   └── .env  (not uploaded to GitHub)
│
└── frontend/
    ├── src/
    ├── public/
    └── index.html
```

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4. Working of the System (Step-by-Step)

1. The user first registers in the system by entering their **name, email, and password**.
2. On successful registration, a **unique referral code** is generated for that user and stored in the database.
3. Another user can apply this referral code in the **"Apply Referral"** section.
4. When a referral code is submitted, the system validates that:
    - The referral code is **valid** and exists in the database.
    - The user is **not using their own referral code** (prevents self-referral).
    - The user has **not already applied any referral** earlier (prevents duplicate usage).
5. If the referral is valid, **reward coins** are credited to the user's account. The reward value is fetched from the MongoDB **Config** collection, allowing easy configuration of reward amounts.
6. The user can then open their **Profile page** to view:

- Their unique referral code
- Current coin balance
- Basic profile details

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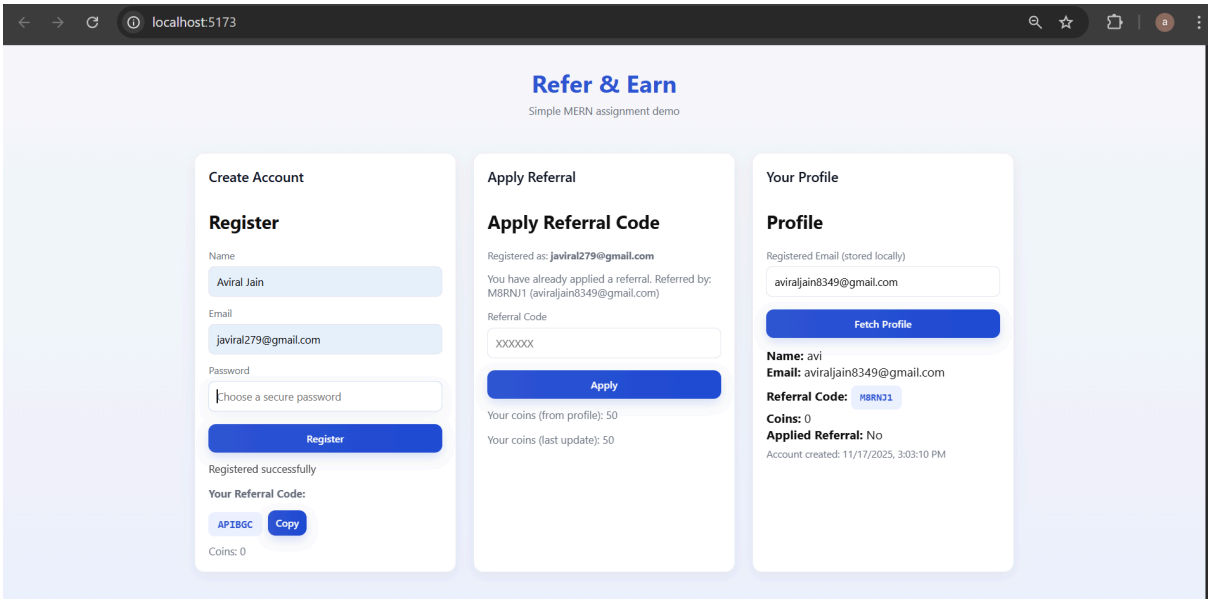
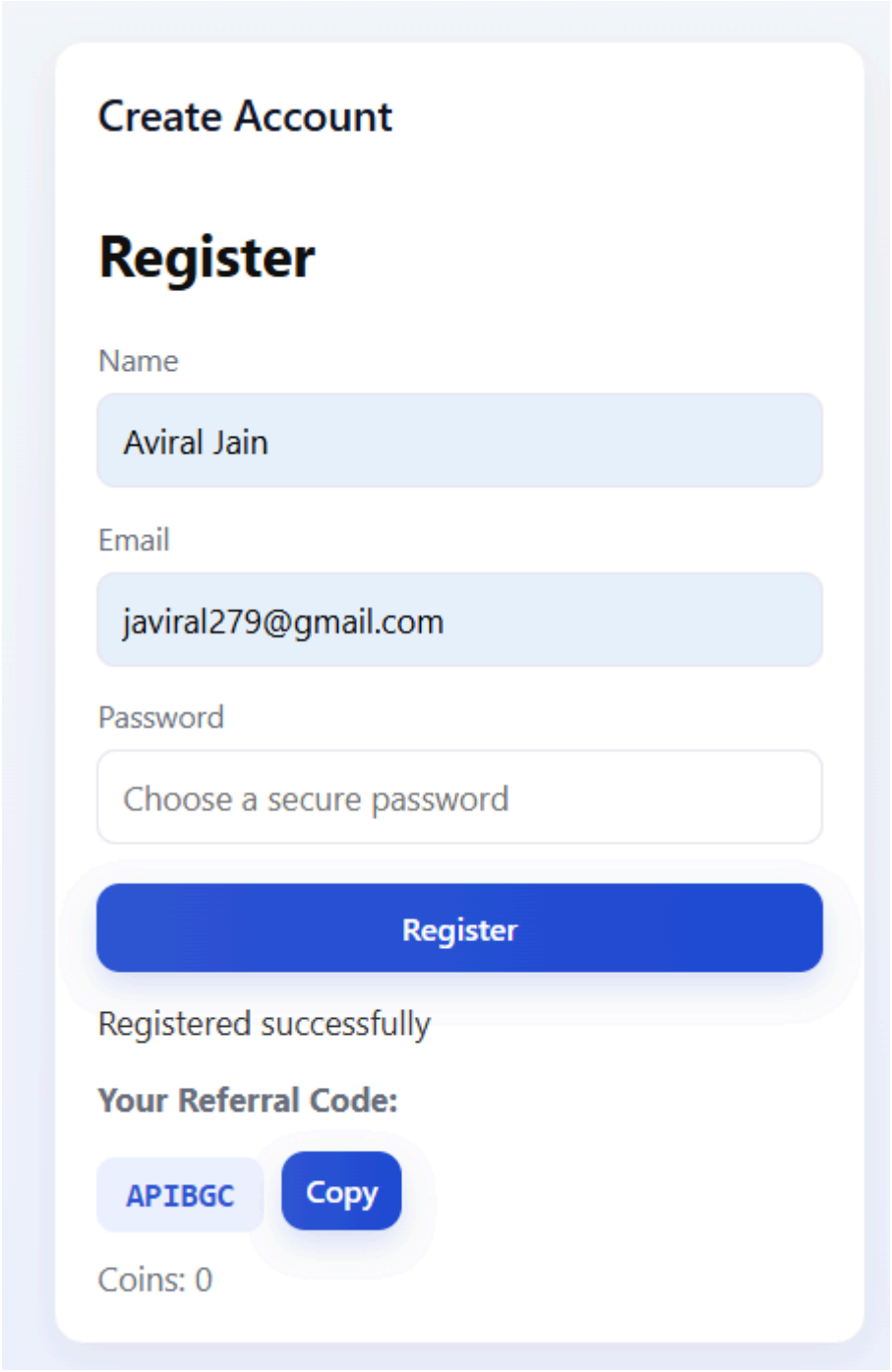
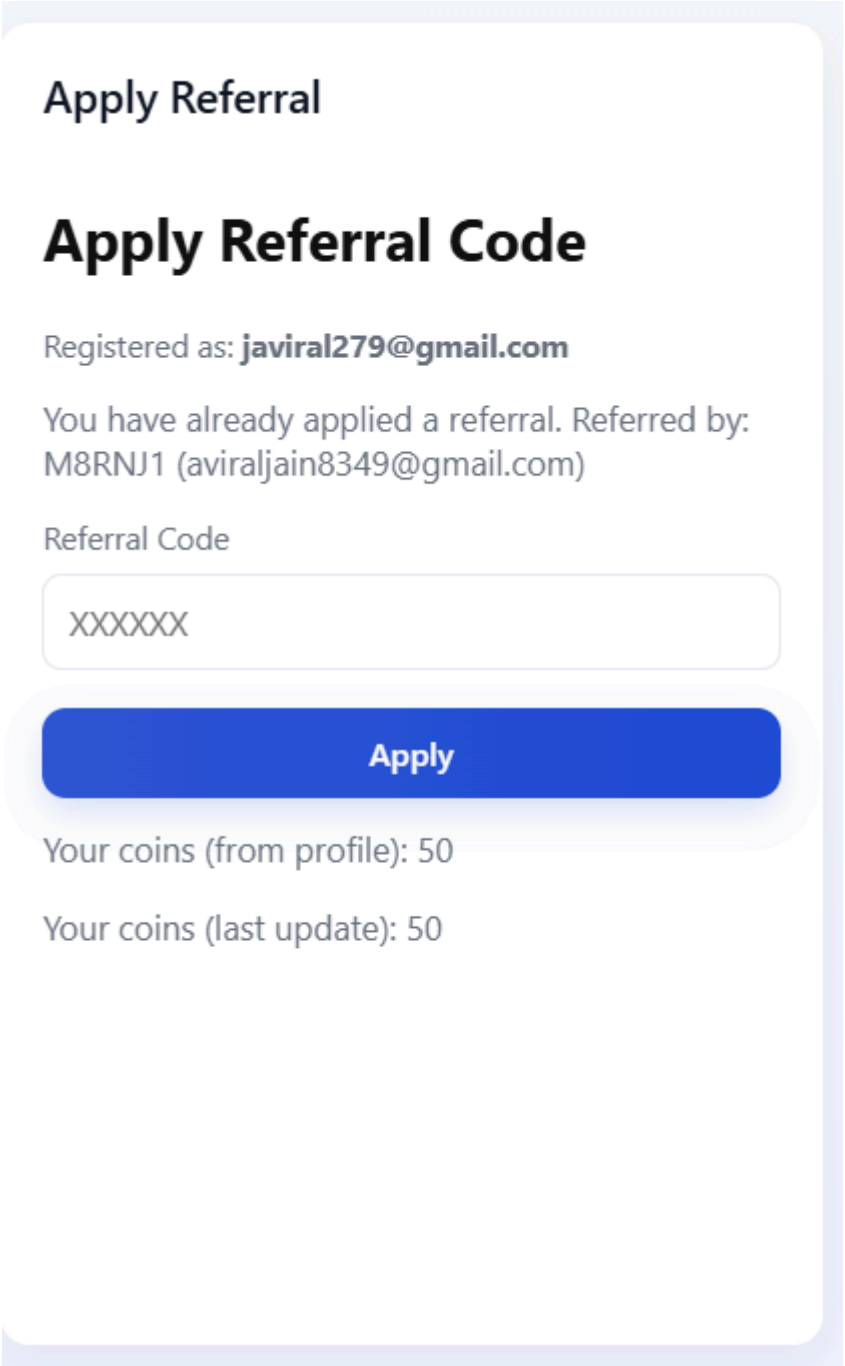
5. Screenshot Placeholders



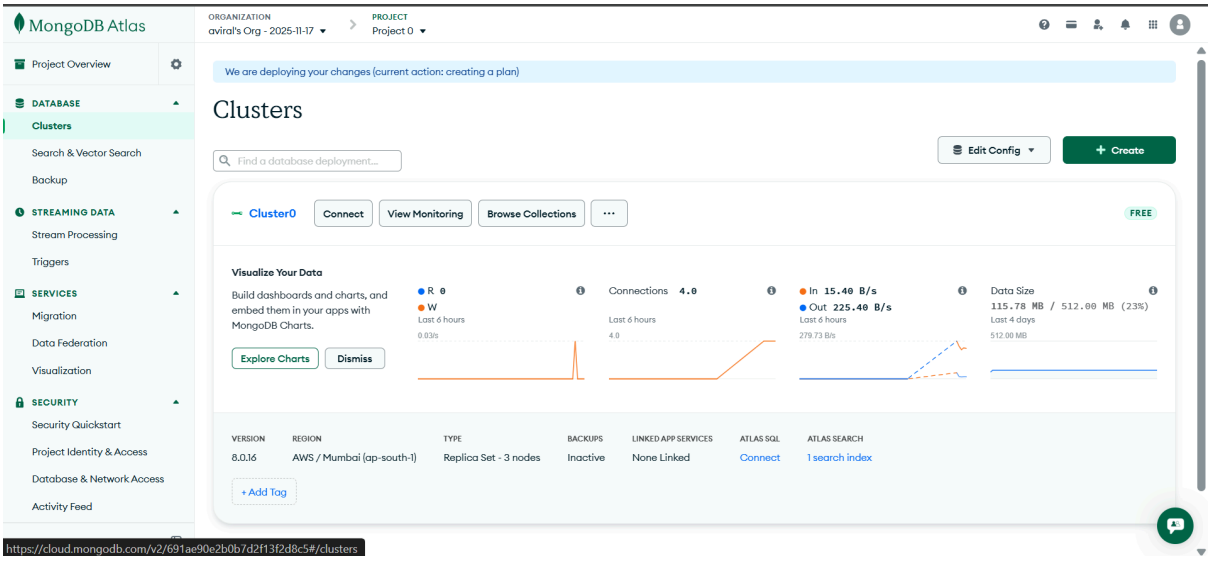
- **Screenshot 1:** User Registration Page



- **Screenshot 2:** Referral Code Applied Successfully



- **Screenshot 3:** MongoDB Users Collection



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6. How To Run The Project (Local Setup)

Backend Setup

Open terminal and navigate to the backend folder:

```
cd backend
```

1.

Install dependencies:

```
npm install
```

2.

Start the backend server:

```
npm run dev
```

3.

   Backend runs on: `http://localhost:5000`

Frontend Setup

Open a new terminal and navigate to the frontend folder:

```
cd frontend
```

1.

Install dependencies:

```
npm install
```

2.

Start the frontend development server:

```
npm run dev
```

3.

Frontend runs on: `http://localhost:5173`

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7. Key Points

- MongoDB is connected using **MongoDB Atlas** (cloud-based database).
- All confidential information like **database credentials** and **connection strings** is stored in the `.env` file (not uploaded to GitHub for security reasons).
- The system successfully implements referral logic as per the assignment instructions, including:
    - Self-referral prevention
    - One-time referral usage
    - Proper reward calculation and crediting

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8. Conclusion

This project successfully demonstrates the implementation of a **Refer & Earn System** using the **MERN stack**. It ensures:

- Secure user registration
- Proper and validated referral application
- Correct reward distribution
- Protection against invalid, self, or duplicate referral usage

Overall, the system is modular, scalable, and can be extended with features like transaction history, referral analytics, and email notifications in the future.