Eduardo Bezerra de Moraes

Ribeirão Pires, São Paulo, Brazil
https://www.bm7.dev
bmoraes.eduardo@gmail.com
linkedin.com/in/eduardo-moraes77

Professional Profile

Web Developer and Software Engineering student with a journey that began through the Introduction to Computer Science (CS50) course at HarvardX. I am currently in the final phase of my studies at 42 São Paulo, a globally recognized school of software engineering known for its innovation (ranked among the top 6 most innovative schools in the world by the World University Rankings for Innovation - WURI). My professional experience includes freelance web development projects and managing a digital marketing company. In terms of languages, I have advanced English proficiency and basic knowledge of German.

Education

- **42 São Paulo, Student in Software Engineering (Current)**
  - Focus on project-based learning and practical skill development in a collaborative environment.
- **Universidade Anhembi Morumbi, Bachelor's Degree in Music Production**

Certifications

- **CS50's Introduction to Computer Science**
  - Issued by: edX, Universidade de Harvard
  - Date: February, 2022
  - Certificate URL: https://courses.edx.org/certificates/00fdcaef37e34af9adbec8f910813bda

Professional Experience

- **Freelancer in Web Development (Current)**
  - Specialized in creating Landing Pages using Flask (Python), HTML, CSS, and JavaScript. Responsible for deploying applications on AWS servers.
- **Owner and Web Developer**, Loja Plug, Digital Marketing Company (January 2021 to August 2021)
  - Web Development and Facebook Ads Management.

Technical Skills

- **Programming Languages:** C, Python (Flask), PHP, JavaScript (including jQuery), HTML, CSS, Bootstrap
- **Databases:** SQL (MySQL, MariaDB, PostgreSQL, SQLite3)
- **Cloud Platforms:** AWS

Projects and Portfolio

- Details of projects and work are available on my GitHub profile: github.com/edu-bm7. Below are some of the highlighted projects.
- **Minishell (42 São Paulo)**
  - **Description:** Collaborative development of a Linux shell in a two-member team. This project was my first major challenge at 42 São Paulo, as we had to implement functionalities of the Bash shell in C, such as Pipe, AND, OR operators, redirections, heredoc, environment variables, exit status, single and double quotes, command history, and builtins like echo, env, cd, among others.
  - **Contributions:**
    - **Parser and Tokenization**: Development of LL grammar rules for the shell, focusing on minimizing left recursion and responsible for creating a Recursive Descent Parser.
    - **Lexical Analysis:** Implementation of Lexical Analysis, defining Tokens to facilitate Syntax Analysis.
    - **Signal Management:** Development of signal functionality to enable the execution of commands like “CTRL+C”, “CTRL+\”, and “CTRL+D”.

        - **Heredoc and Redirections:** Implementation of Heredoc functionality and command redirection systems.
    - **Challenges and Teamwork:**
        - Overcoming communication challenges and efficient collaboration in a team, resulting in few conflicts and a successful project delivery.
    - **Version Management and Workflow:**
        - Advanced experience with Git, Git Flow, and branch management. Use of Kanban strategy for continuous updating during the development of Minishell.
    - **Results:**
        - Successful project delivery with additional functionalities, demonstrating advanced software development skills and teamwork.
- **Philosophers(42 São Paulo)**
    - **Project:** Dining Philosophers Problem
    - **Description:** Practical approach to solving the classic problem of synchronization and resource allocation in concurrent computing. I implemented two distinct solutions, each exploring different concurrency control techniques.
        - **Solution with Mutex:** Use of threads to represent philosophers, employing mutexes to manage access to resources (forks). This approach provided a deep understanding of mutual exclusion in multi-thread environments.
        - **Solution with Semaphores:** Process-based implementation, without the use of threads, to represent philosophers. Use of semaphores to control access to resources, presenting an additional challenge due to the restriction of not using global variables or shared memory.
    - **Challenges and Learning:**
        - Deep understanding of data racing issues, concurrency, and parallelism in computational systems.
        - Development of a "referee" using threads to monitor philosophers' conditions, ensuring synchronization and avoiding deadlocks.
        - Resolution of complexities in synchronizing processes without the use of shared memory, utilizing signal sending (kill) technique for safely terminating processes without memory leaks.
    - **Technologies Used:** C, pthreads, POSIX semaphores, IPC (Inter-process Communication).
- **FdF (42 São Paulo)**
    - **Description:** 3D data visualization project from coordinates in a matrix, representing maps in an isometric projection.
    - **Technologies and Techniques:**
        - Application of Bresenham's line algorithm and mathematical manipulation for matrix rotation and isometric projection.
    - **Challenges:**
        - Development of applied mathematical skills, mainly in matrix rotation and multiplication, and in determining angles for isometric projections.
    - **Collaboration and Innovation:**
        - Collaborative work with peers to solve mathematical challenges. Additional development of 'fdfgen', a 3D map generator written in Go, available at github.com/taandreo/fdfgen.