Soham Sachin Sonar

Pune, India | soham.2004@outlook.com
GitHub: github.com/soham-exe | LinkedIn: linkedin.com/in/soham-sonar-a98400251

Professional Summary

Aspiring Software Developer with a strong foundation in system programming and automation. Experienced in building network applications and file system simulations using C and Java. Skilled in Python scripting for stress-testing and workflow automation. Proficient in data structures and algorithm optimization.

Technical Skills

- **Languages:** C, C++, Java, Python, JavaScript
- **Core Concepts:** System Programming, OS Internals, Socket Programming, Data Structures
- **Web & Tools:** Flask, HTML/CSS, Git/GitHub, Linux (WSL)
- **Databases:** MySQL

Key Projects

Concurrent FTP Server (Multi-Client File Transfer)

Tech Stack: C (Linux System Programming, Socket Programming)
- Developed a concurrent file transfer server on Linux using TCP socket programming and process-based concurrency (fork()) to handle multiple clients simultaneously.
- Designed a custom communication protocol that sends file headers (metadata) followed by data chunks to ensure reliable transmission.
- Implemented core Linux system calls including socket, bind, listen, accept for networking and open, read, stat for file operations.

File Packer & Unpacker with Encryption

Tech Stack: Java (File Handling, Swing GUI, Encryption)
- Built a file utility tool to 'pack' multiple files into a single archive while preserving metadata (names, timestamps) and 'unpack' them back to their original state.
- Integrated encryption and decryption logic to ensure data security for the archived files.
- Developed a graphical user interface (GUI) using Java Swing for user-friendly interaction, alongside command-line support.

Customised Virtual File System (CVFS)

Tech Stack: C Programming (System Programming, Data Structures)

- Simulated a Linux-like file system with a custom shell to accept commands like open, read, write, ls, and rm.
- Implemented custom data structures including Incore Inode Tables, File Tables, and User File Descriptor Tables to replicate OS storage logic.
- Engineered system call simulations (open, read, write, lseek) to mimic actual OS behavior in a virtual environment.

Generalised Data Structures Library

Tech Stack: C++ (Templates, OOP)

- Architected a generic C++ library providing object-oriented implementations of linear (Linked Lists, Stack, Queue) linear data structures.
- Utilized C++ Templates to ensure the library is data-type independent and reusable for integers, strings, or custom objects.
- Implemented standard searching (Binary, Linear) and sorting (Bubble, Selection, Insertion) algorithms for direct integration into client applications.

Canteen Management System

Tech Stack: Python (Flask), MySQL, HTML/CSS/JS

- Full-stack web application to digitize canteen operations using Flask and MySQL.
- ACID-compliant transaction logic to handle Instant Ordering, Live Status Tracking, and Sales History.
- Dual-interface system featuring a Digital Menu for customers and a Live Dashboard for admin management.

Education

B.E. in Computer Engineering (Pursuing)

GSM COE, Savitribai Phule Pune University

HSC (Science)

DY Patil School, Maharashtra Board

SSC

DY Patil School, CBSE