Hamzah Ahmad

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Education

B.M.S. College of Engineering (Bengaluru, Karnataka)	B.E., Information Science. CGPA 9.09/10,3rd Year
Tyndale Biscoe School (Srinagar, J&K)	Class XII: Percentage: 92.8%
Tyndale Biscoe School (Srinagar, J&K)	Class X: Percentage: 99.2% (State Rank: 3)

Projects

Automated Token Management System (React.js, Next.js, MongoDB, TypeScript, Tailwind CSS, Vercel)

-Replaced paper-based token queues with a fully digital check-in system using **QR validation** (React, Next.js).

-Enabled real-time registration tracking and role-based access with **MongoDB and TypeScript**.

-Designed a live analytics dashboard (Tailwind, Vercel) to monitor usage, improving efficiency by **80%**.

-Integrated **Next.js API routes with MongoDB** to enable real-time validation, role-based access, and dynamic token generation and admin **analytics dashboard** with live stats on registrations, token usage, and validation rates.

PDF Heading Extraction Engine (Python, Docker, pdfplumber, langdetect)

-Containerized using **Docker** for consistent cross-platform execution (runs in <200MB RAM, processes **50-page PDFs in <10s**) Parsed PDFs at character level using `pdfplumber` to extract text layout data (font size, position, etc.) for accurate heading detection.

-Extracts and summarizes document structure by identifying **headings** (Title, H1–H3) to generate a navigable outline.

-Supported **multilingual PDFs** (e.g., Japanese, Korean, English) with `langdetect` and Unicode normalization.

-Applied **regex** and heuristics to clean and organize headings into structured **JSON** for use in indexing systems.

Library Management System (React.js, TypeScript, SQL, Tailwind CSS)

-Built a **full-stack app** to manage 1000+ books and 500+ users with real-time borrowing, **role-based access**, and automated workflows.

-Implemented secure login, dynamic dashboards, smart search, overdue alerts, and fine tracking and a responsive UI using **Tailwind CSS**,integrated features like auto-return status updates and admin control panels.

-A digital platform for libraries to manage books, users, and circulation with minimal manual effort.

Real-Time Quiz & Evaluation System (C, Unix, FIFO Pipes)

-Built a real-time quiz platform enabling interactive Q&A between teachers and students using **named pipes** for synchronized communication.

-Integrated automated grading via file handling, cutting manual effort by **50**%.

Skills

Languages: C, C++, Java, JavaScript, TypeScript.

Technologies & Frameworks: HTML, CSS, React.js, Node.js, Express.js, Next.js,MongoDB, SQL,PostgreSQL.

Core Skills — Data Structures and Algorithms, Object-Oriented Programming ,Operating System, Database Management System, Computer Organization and Architecture,Unix, Shell Scripting.

CI/CD & Testing: Git, GitHub, Postman, Vercel.

Leadership and Achievements

- Organized a **Git Workshop** on version control best practices.

- Volunteered in a **Capture the Flag (CTF)** Competition, promoting **cybersecurity** and hands-on problem-solving.

- Served as School Head Boy, demonstrating leadership, teamwork, and organizational skills.

- ISE Department Council, Organizing Member,- Technical Fest Phase Shift, Junior Coordinator.