Adesh Kumar Singh

Python Developer

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SUMMARY

Enthusiastic Python developer with 4+ years of experience building web applications using Django and Flask. Proficient in API development, database management with MySQL, and cloud services integration. Strong understanding of REST frameworks and agile methodologies.

SKILLS

- **Programming Languages:** Python, HTML, CSS, Bash
- **Web Frameworks:** Django, Flask
- **APIs:** REST, GraphQL
- **Databases:** MySQL, SQLite, Redis
- **Tools:** Docker, Git, Jenkins, Linux
- **Cloud:** AWS, Azure

PROFESSIONAL EXPERIENCE

Parviom Technologies Pvt. Ltd. | Central Tech Engineer | March 2021 – June 2023

- Managed the configuration, testing, and deployment of control panels across multiple sites, ensuring seamless communication between RFID readers, relays, LCD screens, and LED displays
- Utilized MySQL for efficient data storage and retrieval, optimizing database queries to handle real-time data processing with minimal latency.
- Programmed control panels using Raspberry Pi and Orange Pi to operate boom barriers, LED screens, and LCD screens, ensuring smooth vehicle entry and exit while providing dynamic, real-time parking guidance to users.
- Designed and developed the control panel system using Raspberry Pi, which operates boom barriers and integrates with RFID readers for vehicle entry and exit.
- Utilized MySQL for data storage, and optimized database queries for real-time performance and scalability.
- Deployed and maintained the parking management system at multiple gates, enabling real-time monitoring of parking space availability, vehicle access, and payment

processing while quickly addressing hardware-related issues on-site.

- Resolved complex parking-related issues involving RFID and NFC readers, relays, LED and LCD screens, Raspberry Pi, and Orange Pi devices. This proactive approach ensured minimal downtime and optimized operational efficiency.

ParkMate Smart Parking Solution | Python Developer | June 2023 – Present

- Developed and deployed a complete parking management system, integrating Django and Flask frameworks for efficient backend operations.
- Implemented a two-server architecture: a cloud server on AWS and a local server on-site, using Raspberry Pi to control the parking system hardware.
- Managed parking operations by integrating RFID and NFC readers for contactless access control and Fastag payment processing.
- Designed and developed the control panel system using Raspberry Pi, which operates boom barriers and integrates with RFID readers for vehicle entry and exit.
- Utilized MySQL for data storage, and optimized database queries for real-time performance and scalability.
- Implemented Redis for caching to handle fast data retrieval and synchronization between the cloud and local servers.
- Integrated LCD and LED displays to provide real-time parking status, guiding users through the parking process.
- Coordinated the deployment of the system at multiple parking gates, enabling real-time parking space monitoring and payment processing.

PROJECTS

Parking Management System

- Developed a smart parking solution utilizing Raspberry Pi to control entry and exit points, RFID/NFC readers for access, and Flask for backend management.
- The system includes a cloud server on AWS and a local server that communicates with Raspberry Pi devices to manage parking spaces, handle Fastag payments, and control boom barriers.
- Employed MQTT protocol for real-time communication between the parking hardware and the backend systems, ensuring fast and reliable updates on parking availability.
- Key technologies: Django, Flask, MySQL, Redis, Raspberry Pi, RFID Reader, NFC Reader, LCD Display, LED Display, AWS Cloud, Local Server, MQTT, Tkinter.

Tmate Server for Remote SSH Access

- Built a Tmate server that enables remote SSH access to devices over the internet without the need for static IP or port forwarding.

- Developed using Django and REST API to manage SSH sessions, providing a secure and efficient way to access devices remotely.
- Utilized SQLite3 for database management to store session data and user configurations.
- Designed the front-end with HTML, CSS, and JavaScript for a user-friendly interface to initiate and manage SSH connections.
- The system allows users to seamlessly connect to remote devices and control them as if they were on the same local network.
- Key technologies: Django, REST API, SQLite3, HTML, CSS, JavaScript.

Smart Home Automation System

- Developed and sold a smart home automation system that allows users to monitor temperature and humidity levels and control appliances like fans and lights through a web interface.
- The system was built using Raspberry Pi for hardware integration, along with relays to control the appliances and temperature & humidity sensors for environmental monitoring.
- Used Python and Flask to build the backend, managing appliance control and data monitoring.
- Implemented SQLite3 for local data storage and Redis for real-time data caching and communication.
- Designed the front-end using HTML, CSS, and JavaScript for a responsive user interface to allow remote control of appliances.
- Successfully sold this project to individuals in the open market, providing a practical, easy-to-use home automation solution.
- Key technologies: Raspberry Pi, Relay, Temperature & Humidity Sensor, Python, Flask, SQLite3, Redis, HTML, CSS, JavaScript.

EDUCATION

- **Intermediate** from **CBSE Board** in year 2019
- **High School** from **CBSE Board** in year 2017

CERTIFICATIONS

- Cyber Security Foundation Professional Certificate
- Jetking Certified Ethical Hacking Professional
- Scanning Cyber Security Hacking Course
- Ethical Hacking: Web Enumeration
- Diploma in Network Administration
- CompTIA IT Fundamentals (ITF+)

- KeepassXC Mastery