

Motion Sensor Alarm using Arduino MKR WiFi 1010

Project Presentation

Pranav Kumar Jha

Submitted to:

Dr. Fadi El-Hassan

June 15, 2023

1 Overview:

- **Overview:** The ICDE design of a restaurant website using Django - a Python based web framework.
- **Functional Requirements:** Display menu, place order, reserve a table, modify bookings, registration, authentication and login, online payment.

2 The major architectural design decisions:

- **Generic application architecture:** Client-server architecture (request-response), Model-View-Template (MVT), distributed system.
- **Fundamental approach:** Structural (server) components, UI and UX (client) components
- **Structural components:** Server, Database: postgresql (RDBMS)
- **Alternate architecture design:** Serverless architecture
- **Strategy:** System flexibility, stability and reliability, scalability and performance.
- **Architectural organizations:** Software consultancy companies, IT departments, Software houses etc.
- **Documentaion of NFRs:** Domain-specific language, risk models, failure trees, etc.

- **System distribution:** Presentation layer (PL) - user interface, Business logic layer (BLL) - server, Data access layer (DAL) - server memory, Data service layer (DSL) - server
- OS:** Windows server, Linux etc. **Processor:** Intel® Celeron® Processor 847, 1.10 GHz, or equivalent. **Storage:** Between 1.3 GB - 2.3 GB.

- **Architectural documentation:** Project context, architecture requirements and use cases, non-functional requirements, structural and behavioral views etc.

3 Effect of architectural design decisions on non-functional attributes: Structure components:

- sqlite - Performance efficiency and reliability.

Alternate architecture design: serverless - security.

4 Decision stages:

Generic application architecture Agile: - at the planning stage of the project.

Fundamental approach Agile: - while designing the general architecture and front-end implementation.

Structural components Agile: - after completing the front end part - implementation phase.

Alternate architecture Agile: - after the structural components decision - implementation and deployment phase.