***S Arivuselvan***

***2403717624321004***

***Home Appliance Control System***

***Purpose of Appendices***

**Appendices** include **supporting material** helpful for understanding requirements but not essential to the main document.

* The first two appendices provide **sample input/output data**, **user scenarios**, or **reference diagrams**.
* The remaining appendices are for **educational purposes**, added to demonstrate **methodology** and offer **learning resources** (not typically part of a professional **SRS**).

**Appendix A: External Context Model**

# *Description:*

# *The external context model defines the interaction between the HACS system and external entities such as users, administrators, appliances, and external services.*

**Entities:**

**Remote User:** Initiates appliance control requests via mobile or web interface.

**Administrator:** Manages appliances and users.

**Appliances:** Microwave, Sprinkler, Pet Feeder, etc.

**External Services (AI Integration):** Weather APIs for adaptive scheduling, Cloud AI for voice command processing.

# Appendix B: Internal Context Model

**Description:**

The internal context model represents internal components and their interactions.

**Components:**

**Authentication Module:** Verifies user credentials.

**Session Manager:** Maintains valid communication sessions.

**Appliance Controller:** Executes ON/OFF and schedule commands.

**AI Module:** Predictive control, energy optimization, voice command interpretation.

**Database:** Stores user info, appliance states, logs.

**AI Real-world Link:** AI module works like Google Home’s smart routines for automation.

# Appendix C: Use Case Analysis Notes

***Primary Use Cases***

* 1. Login and Session Management – Validate users and establish sessions.
* 2. View Appliance Menu – Display available appliances.
* 3. Control Appliance – ON/OFF, schedule, or adjust settings.
* 4. AI Suggestions (Extended Use Case) – Suggest optimal schedules based on past usage.

***AI Example:***

*When a user logs in, the system may suggest “Start microwave for breakfast?” based on previous behavior.*

# Appendix D: Development Process

You should describe all the various tasks that you have conducted as well as the various techniques that you have used in the development of this document. You need to describe all information that has been used as inputs for each of the tasks as well as the outputs produced.

*Tasks Undertaken*

|  |  |  |
| --- | --- | --- |
| **Task Name** | **Description** | **Technique(s) Used** |
| Requirement Elicitation | Collected system requirements from assignment briefInterviews, Document Review. | We’re taking Survey by using Google Forms. |
| Use Case Modeling | Defined system interactions and flows | UML Use Case Diagram |
| AI Feature Identification | Analyzed opportunities for AI in HACS | Brainstorming, Research |

Table *51.0* Tasks undertaken in the development of this document

| **Task Name** | **Description** | **Technique(s) Used** | **Notes** |
| --- | --- | --- | --- |
| Requirements Gathering | Identified user needs for monitoring and controlling appliances remotely. | Interviews, brainstorming, document analysis | Helped in defining functional requirements. |
| System Scope Definition | Outlined system boundaries, users, and appliances covered. | Context diagrams, use case identification | Provided foundation for requirements specification. |
| Functional Requirements Specification | Documented actions like ON/OFF, scheduling, and adding appliances. | Use case modeling, user stories | Captured all user and system functions. |
| Non-Functional Requirements Specification | Defined security, reliability, and scalability constraints. | Quality attribute checklists, expert review | Ensured system performance and usability. |
| Interface Design | Designed GUI structure and usability features. | Wire framing, prototyping, usability heuristics | Ensured clarity, consistency, and accessibility. |

### ****Appendix D: Task Log and Outputs****

**Table D1.0 Tasks Undertaken**

Table 52.0 Sections affected by the various tasks.

**Table D2.0 Sections Affected by Tasks**

| **Task Name** | **Outputs** | **Section(s)** |
| --- | --- | --- |
| Requirements Gathering | User Needs, Appliance Scenarios | 1.2 Scope, 2.1 Introduction |
| System Scope Definition | System Boundaries, Actors | 1.4 Constraints, 1.8 Assumptions |
| Functional Requirements Specification | Use Cases, Functional List | 2.3 Functional Requirements, 7.0 Use Cases |
| Non-Functional Requirements Specification | Security, Reliability, Scalability | 5.3 – 5.6 Non-Functional Requirements |
| Interface Design | GUI Requirements, Usability Criteria | 4.0 User Interface Requirements |

# Appendix E: Contributions

**Table E1.0 Document Contributions**

**Contributor Name Sections Worked On**

1. DHARSHINI - Introduction, Product Overview

H.RAJESHWARI - Functional Requirements

G.SHANGARA VADIVEL - Non-Functional Requirements, Operating Environment

S. ARIVU SELVAN - Appendices A, B, C,D, E.

R.J. RAJIVARTHINI - UI Requirements,Appendices F, G,Use case diagram,context diagram.