**Project Overview:**

**Product Owner:**

Durga Sri R

**Team**

Durga Sri R

**Stakeholders:**

Hotel

Epic 1

User Story 1.1 - Task of setting up local environment

Acceptance Criteria: Installed Python and local virtual environment

Status: Completed

Subtask 1.1.2 - Install Python

Status: Completed

Epic 2

User Story 2.1 - Sentiment Analysis & Service Alert Engine

Acceptance Criteria: The sentiment analysis system has been deployed, triggering real-time notifications in response to shifts in guest sentiment.

Status: Completed

Epic 3

User Story 3.1 - Personalized Recommendation System & Dynamic Guest Profile Management

Acceptance criteria : The personalized recommendation system is live, with a dynamic profile management system that updates seamlessly based on real-time behavior analysis.

Status: Completed

Epic 4

User Story 4.1 - Staff Notification & Feedback Integration Hub Deployment

Acceptance Criteria: The staff notification system is now integrated with Slack and Email, delivering automated alerts for potential service issues and personalization opportunities.

Status: Completed

## **Sprint Plan**

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| **Sprint** | **Goal** | **Key Tasks** | **Deliverables** |
| Sprint 1 | Local env setup and data collection | 1. Install python &   setup local environment   1. Data collection,   examine artificial  data | 1. Data for feedback analysis 2. Virtual environment setup |
| Sprint 2 | Sentiment Analysis & Service Alert Engine | 1. Implement sentiment analysis using AI through user feedback 2. Develop a system to trigger real-time notifications | 1)Feedback analyser  2) Automated notifications (via Slack & Email) |
| Sprint 3 | Develop recommendation engine and dynamic profile recommendation system | 1. Develop a Personalized Recommendation Engine 2. Integrate Dynamic Profile Management | 1)Recommendation engine module  2)Profile management system |
| Sprint 4 | Add email and slack alerts | 1)Integrate sentiment analysis and notification logic  2) Testing & Optimization of Notification System | 1) Validated Alert Mechanism  2) Automated Staff Notification System |
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## **Testing Plan**

**Unit Testing**: Verified individual components and functions for correctness.  
**Integration Testing**: Ensured seamless interaction between integrated modules (e.g., Slack & Email).  
**Performance Testing**: Assessed system responsiveness according to the accuracy of the recommendations.   
**User Testing**: Gathered feedback on usability and effectiveness from staff.

## **Key Metrics**

* **Recommendation Accuracy**: Precision, Recall.
* **Sentiment Classification Accuracy**: F1 Score
* **Profile Update Latency**: Average time to update profiles.
* **Feedback Processing Time**: Time taken to analyse feedback and trigger alerts.