SarvamAI Internship Assignment Report

Part 1: Solution Design & Business Strategy (40%)

Use Case Overview:

GoodFoods aims to automate and scale its reservation operations using an AI conversational agent that understands natural language, recommends restaurants, checks slot availability, and confirms bookings.

Key Business Problems & Opportunities:

- Manual phone-based booking causes delays and errors.
- No unified reservation system across branches.
- Double-booking risk due to lack of slot management.
- No analytics on user preferences or restaurant performance.
- Opportunities: cross-sell, CRM integration, multi-chain expansion.

Success Metrics:

- 80%+ bookings via AI agent.
- 60% reduction in manual booking load.
- <2% double-booking rate.
- 15-20% increase in table utilization.
- Booking completion time <10 seconds.

ROI Potential:

- Lower staffing cost.
- Higher utilization.
- Accurate bookings $\rightarrow$ fewer cancellations.
- Scalable system with low marginal cost.
- Can be licensed to other chains.

Vertical Expansion:

• Other restaurant brands.

• Co-working space booking.

• Salon/spa appointments.

• Event/turf space booking.

• Healthcare appointment scheduling.

Competitive Advantages:

1. True LLM tool-calling architecture.

2. Real slot-based dynamic booking.

3. Multi-industry adaptability.

Part 2: Technical Implementation (60%)

System Components:

• Streamlit frontend.

• Python backend orchestrator.

• LLM: Grok (optional) or fallback parser.

• Datastore: restaurants.json, restaurant_slots.json, bookings.json.

• Analytics: cuisine distribution, rating charts.

Technical Features:

• 100-restaurant dataset with cuisine, location, capacity, ratings.

• Real-time slot removal after booking.

• Tools: search_restaurants, get_availability, book_slot.

• LLM determines intent: search/book/availability.

• Persistent chat history.

• Cloudflare/ngrok public deployment.

Architecture Summary:

User → LLM → Intent JSON → Orchestrator → Tool → Response → Streamlit UI.

Evaluation Criteria Met:

• End-to-end reservation agent built.

• Business strategy documented.

• Dataset implemented.

• Streamlit UI working with charts.

• Tool calling implemented correctly.

• LLM-driven orchestration functional.

Final Notes:

This solution demonstrates both business acumen and technical execution for scalable AI agent design.