System Specification

1. Student

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2. System Name

Simple Travel Planner

3. Platform

JADE (Java Agent Development Framework)

4. Methodology

GAIA

5. Introduction

Simple Travel Planner is a prototype multi-agent system (MAS) designed to assists users in planning a trip. The system automates the process of collecting travel information, evaluating available options, and presenting the top 3 best plans according to user preferences. The system aims to simplify travel planning by distributing responsibilities among specialized agents.

It demonstrates how multiple agents can collaborate, communicate, and coordinate to achieve a shared goal.

6. Scope

The Travel Planner MAS focuses on providing a simple yet functional demonstration of how multiple agents can work together to assist users in planning trip.

The system includes 5 agents, each responsible for specific tasks (simple description):

Agent	Short Description
User Agent	Gather input from the user (destination, dates, budget) and displays the final plan
Planner Agent	Act as the coordinator, receives user input, communicates with other agents, and constructs the top 3 best travel plans
Transport Agent	Provide available transport options (bus, train, flight) with associated costs
Hotel Agent	Suggest hotel options based on budget and destination.
Payment Agent	Simulates the payment process and confirms the booking

The system will not connect to real-world APIs but will simulate service responses with predefined datasets for demonstration purposes.

7. System Objectives

- Design and implement a small-scale distributed system using JADE
- Illustrate collaboration and message exchange between autonomous agents
- Automatically create travel plans that fits the user's input
- Serve as an educational demonstration of the GAIA methodology for MAS design

7.1 Main Functionalities

Description
Collect user travel information through the User Agent
Request travel and accommodation hotel data from the Transport and Hotel Agents
Evaluate and select the top 3 best plans according to user budget
Simulate booking confirmation and payment through the Payment Agent
Present the complete travel plan to the user

7.2 Non-Functionalties

- Reliability: The Planner Agent must handle missing or invalid responses
- Maintainability: Each agent’s code should be modular for easy updates or replacement