**Planning and Requirements Gathering**

The planning phase involves setting clear goals, understanding the user base, and identifying the system features. To begin, we conducted a requirements-gathering session that included user surveys, interviews with potential travelers, and a competitive analysis of similar applications.

This process helped in outlining the basic and advanced features that users expect. Priority was given to features such as destination input, budget tracking, and activity recommendations, followed by secure login mechanisms and real-time updates.

We also defined the technical stack and tools:

* **Frontend**: React.js
* **Backend**: Node.js with Express
* **Authentication**: JWT
* **APIs**: Flight, hotel, and activity data providers (Skyscanner, Amadeus, etc.)
* **Database**: MongoDB

Roles during Planning:

* Student khalil handled frontend feasibility analysis.
* Student hala researched API compatibility and backend architecture.
* Student hala gathered functional and non-functional requirements.
* Student Khalil managed documentation and workflow planning.

**SDLC Model**

We chose the **Waterfall Model** for its structured and sequential nature. This model is appropriate for academic projects with fixed deadlines, as it allows us to complete one phase before moving to the next, reducing scope creep and rework.

The stages include:

1. **Requirements Analysis**: Gathering detailed system specifications.
2. **System Design**: Designing UI and defining backend architecture.
3. **Implementation**: Developing the frontend and backend.
4. **Testing**: Functional testing, bug fixes.
5. **Deployment**: Local and cloud deployment for demonstration.
6. **Maintenance**: Handling feedback and issues post-deployment.