

*It's time to*  
**TRAVEL**

The Travel Bro

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*Context*

# The Problem behind the solution



## **The impact ?**

- **1 Billion People go to vacation each year**

## **The problem ?**

- **81 pages visited**
- **A minimum of 5 hours**

## **The solution ?**

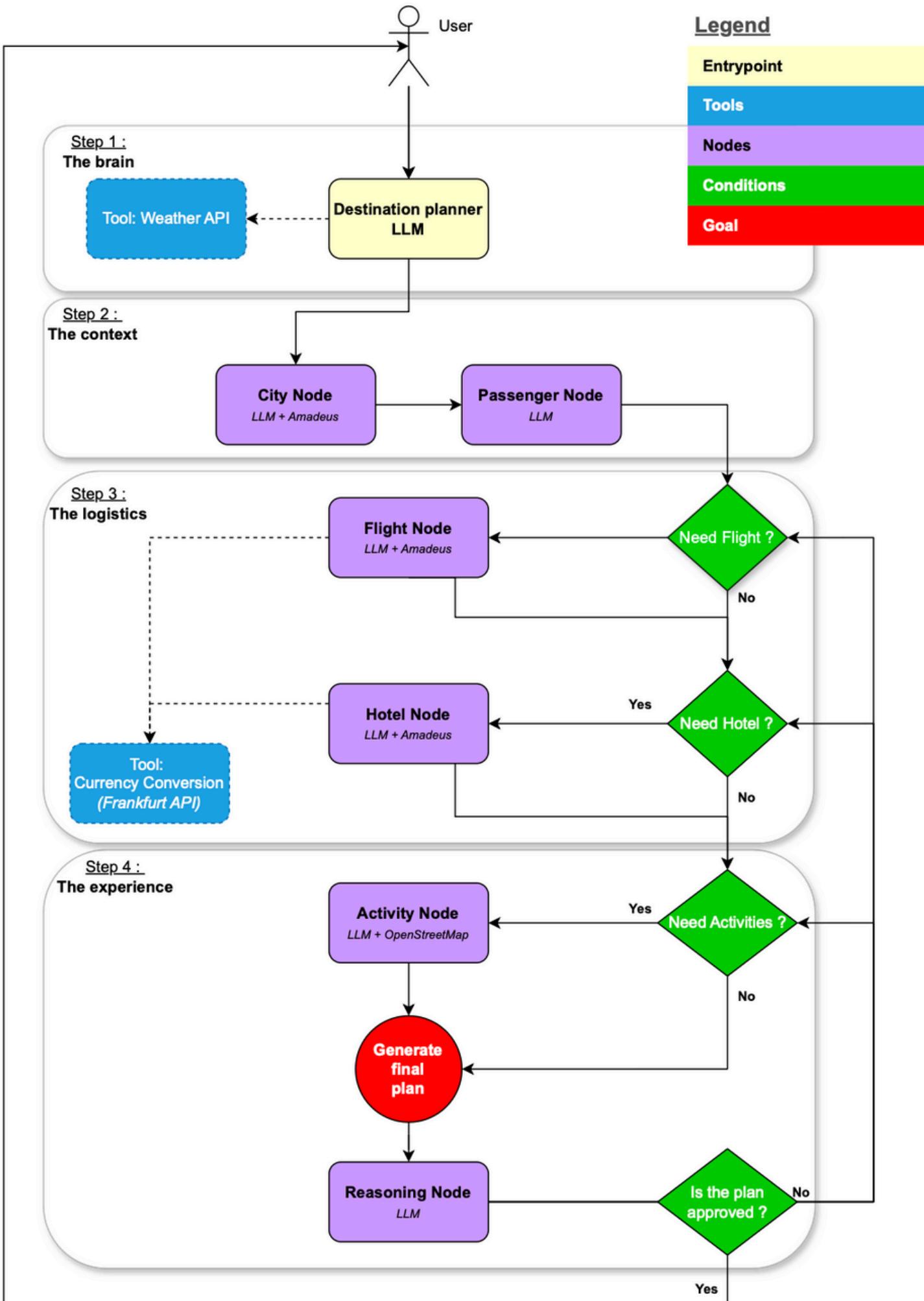
- **A travel agent capable of proposing a full trip planning from the flight to the hotel and activities respecting your budget limitations !**



# TravelBro

# The

# Architecture



## Design Patterns :

- **API Orchestration**
  - Flight: Amadeus
  - Hotels: Amadeus, Booking
  - Activity: Amadeus, OpenStreetMap
- **Planner-Executor**
  - **Plans a complete vacation from the user prompt**
- **Reflexion mode**
  - **Optional option that reflects on the proposed choices by the agent**

**Models used : Llama 3.1 – 8B, HuggingFace Inference models**

# Key Results

# LLM as a judge

**3 metrics used**

## Relevance

- **Identifies user's requirement**
  - *Number of passengers*
  - *Dates*
  - *Destination*
  - *Budget*

## Helpfulness

- **Provides concrete and accurate travel options**

## Logic

- **Physical feasibility**
- **Internal consistency**
  - *Travel time*
  - *Avoids geographically impossible suggestions*

Architecture	Tokens	Latency	Helpfulness	Help. Var	Logic	Logic Var	Eff. Ratio
Planner + Tools + Reasoning	5500	8234.5	4.00	5.89	3.72	4.65	1347.95
Planner + Tools	3300	5821.2	3.95	7.84	3.68	5.12	821.52
Planner Only	15000	2456.8	1.21	2.34	1.15	1.89	12358.68

Table 1: Performance Summary Across Architectures

# Learned Lessons

# The Reflexion

## APIs

- Free APIs are not always the best
- Rate limiting
- One api per task, create reliability issues

## Models

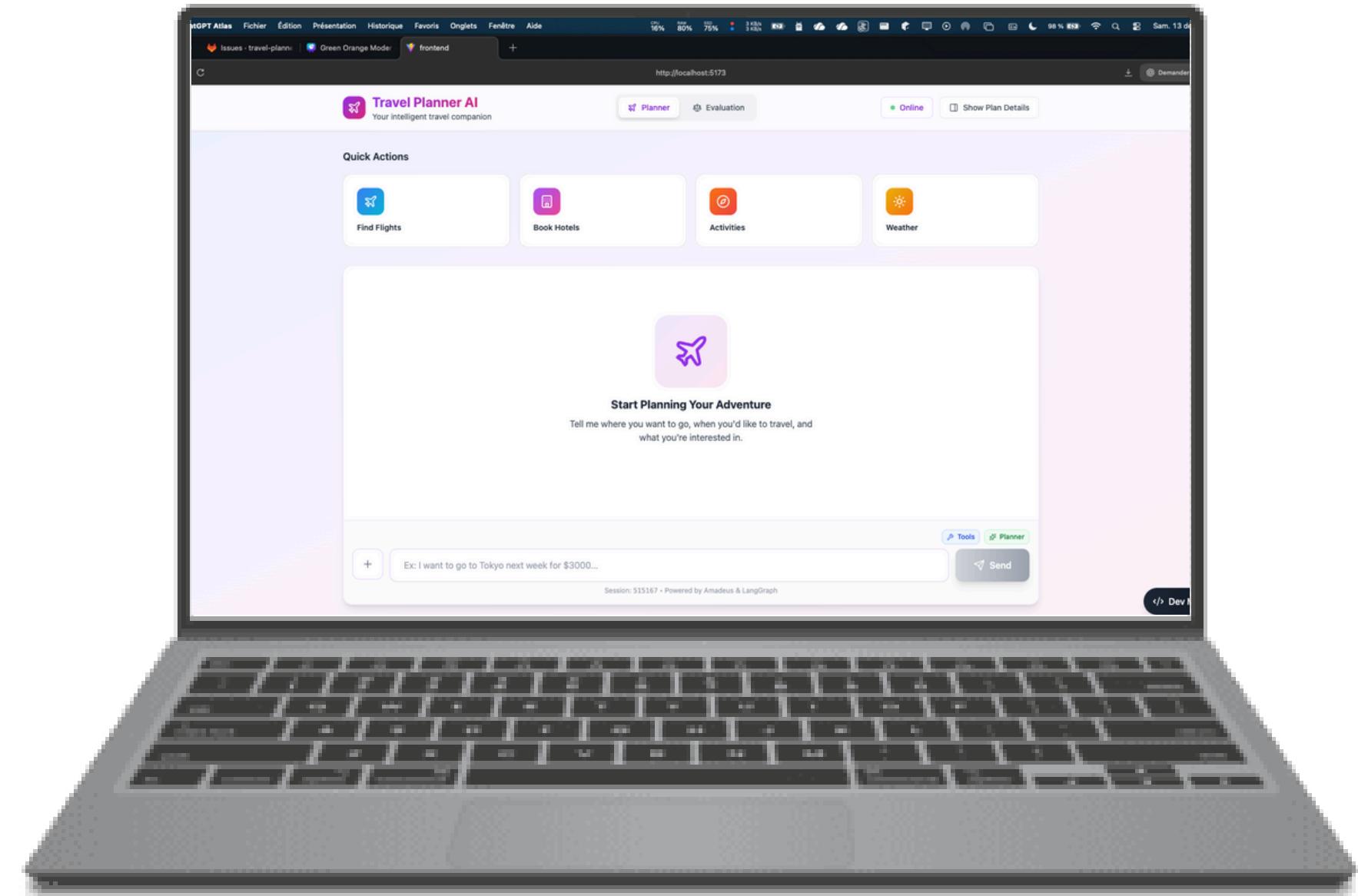
- LLMs hallucinates a lot making tool pattern very important
- Local LLMs can be resource consuming

## Monitoring

- LangSmith and LangGraph callbacks are required to monitor model
- Defining accurate metrics and evaluation process (LLM as a Judge, well defined scenarios ...) helps measure impact of each pattern



# Travel Presentation Demo



<https://youtu.be/arBmsSlphOM>



The TravelBro

*See you next time*  
**Thank you  
For Attention**

