

CSE 4510 SOFTWARE DEVELOPMENT

PROJECT PROPOSAL

**Team Route6**

# Project Odyssey



DD

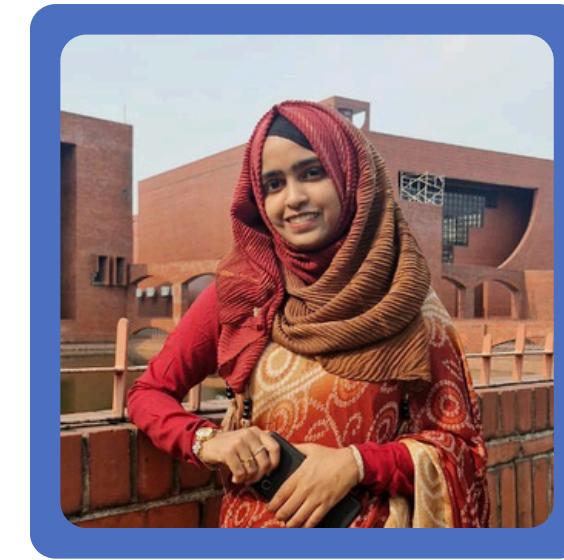
# The Odyssey Team



**Sadman Shaharier  
Mahim  
220041133**



**Nayeemul Hasan  
Prince  
220041125**



**Anjim Hossain  
220041101**



**Alfi Shahrin  
220041153**



**Didhiti Nahid  
220041117**



**Tasnif Emran  
220041135**

# **What is Odyssey?**

**“Odyssey is a unified platform that simplifies trip organization with intuitive planning tools and connects travelers to a vibrant community of fellow travelers. We elevate this experience using advanced AI that automates personalized itinerary generation and route optimization”**

# Project Motivation



## Information Overload

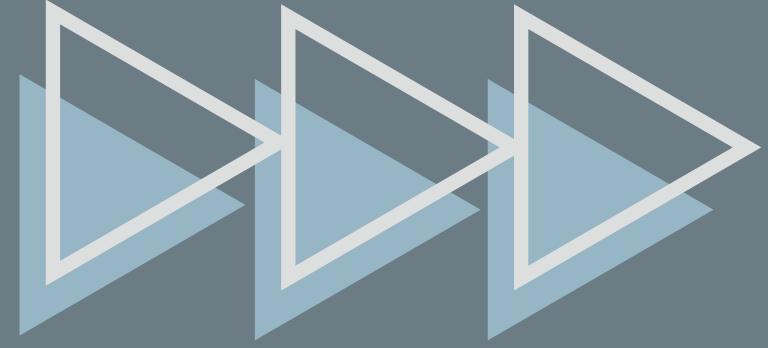
Juggling TripAdvisor, YouTube, and spreadsheets for trip research.

## Lack of Integration

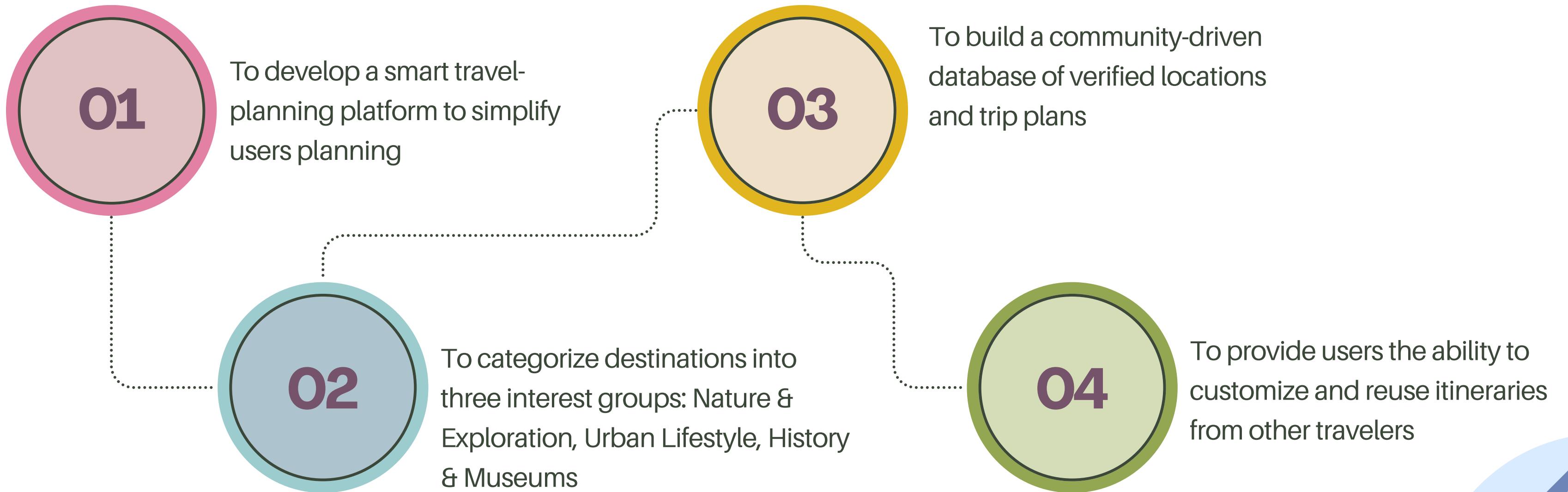
Existing tools are isolated. Review sites lack route planning, map applications aren't social, and social media can't manage logistics. There's no single source of truth.

## Insufficient Planning

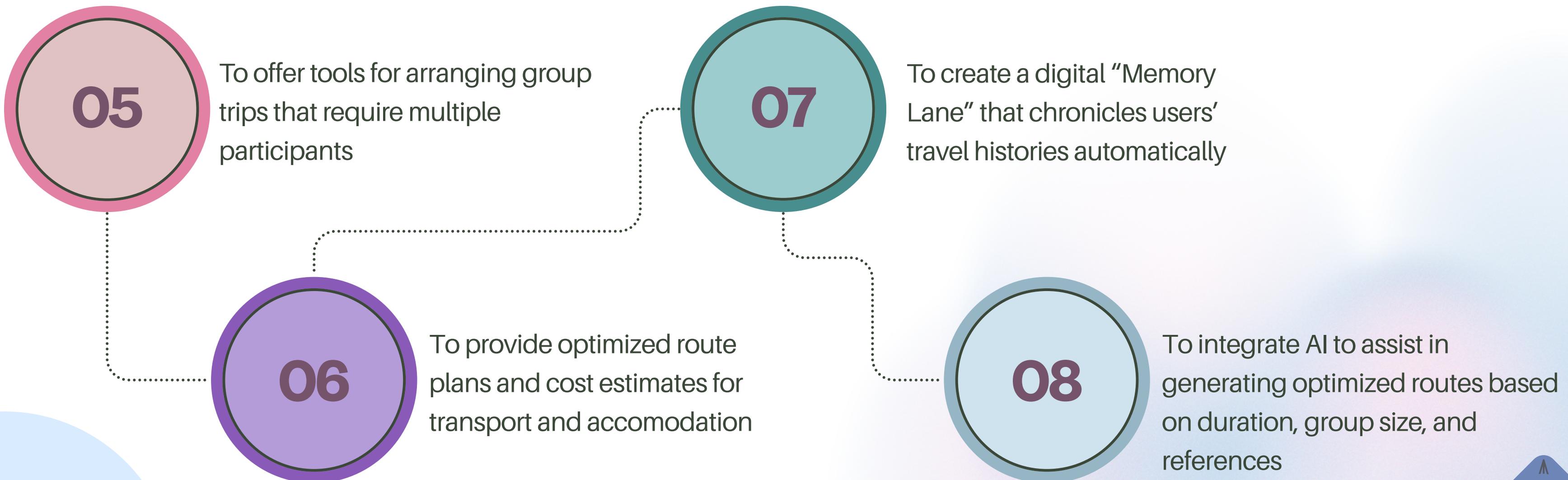
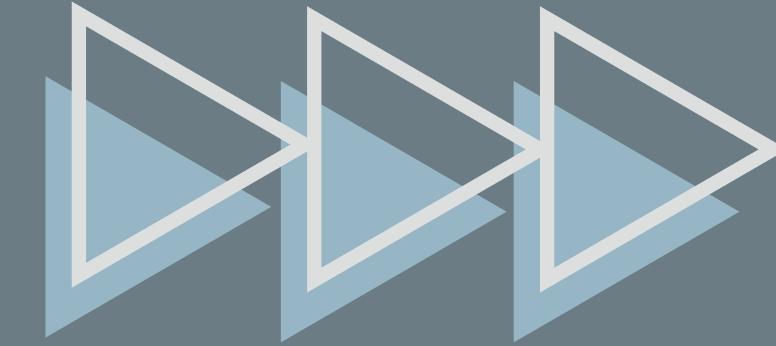
Poor plans result in inefficient routes, missed gems, and budget overruns.



# Project Objectives



# Project Objectives



# Functional Requirements

## DISCOVERY & CATEGORISATION

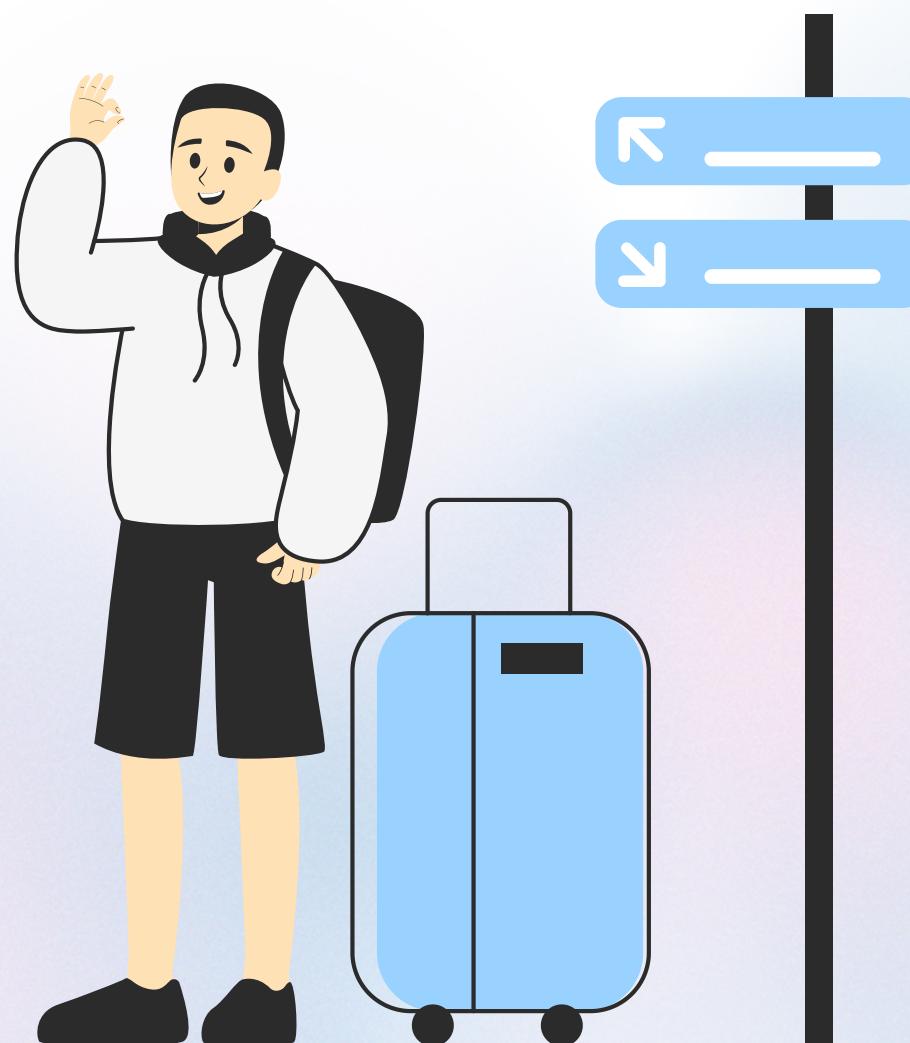
- Location Browser
- Categorised Content
- Search Nearby Places

## SMART PLANNING TOOLS

- Route Optimization
- Price Estimation
- Manual Planning
- AI Itinerary Planner



# Functional Requirements



## PERSONAL UTILITIES

- Memory Lane
- Offline Mode

## SOCIAL AND COMMUNITY

- Trip Sharing
- Group Finder
- Content Contribution
- Blogging Feature

# Modular Breakdown



**"OUR PLATFORM IS DIVIDED INTO FIVE KEY MODULES TO MANAGE COMPLEXITY AND ENSURE SCALABILITY"**

## USER MANAGEMENT

Handles user authentication, profiles, and account settings.

## DATA ACQUISITION

Stores and manages locations, attractions, categories, and media assets.

## OPTIMISATION ENGINE

Core system for route planning, itinerary generation, and AI-driven trip logic.

## SOCIAL INTERACTION

Enables sharing, posting, commenting, and collaborative trip planning.

## VENDOR MODULE

Provides support for third-party services and travel package integrations.

# Timeline

## Major Tasks

### Design & Setup

- Set up GitHub, MERN structure, wireframes, MongoDB, Cloudinary, and Redux Persist.

### Core Development

- Implement authentication, map integration, and Itinerary Builder CRUD.

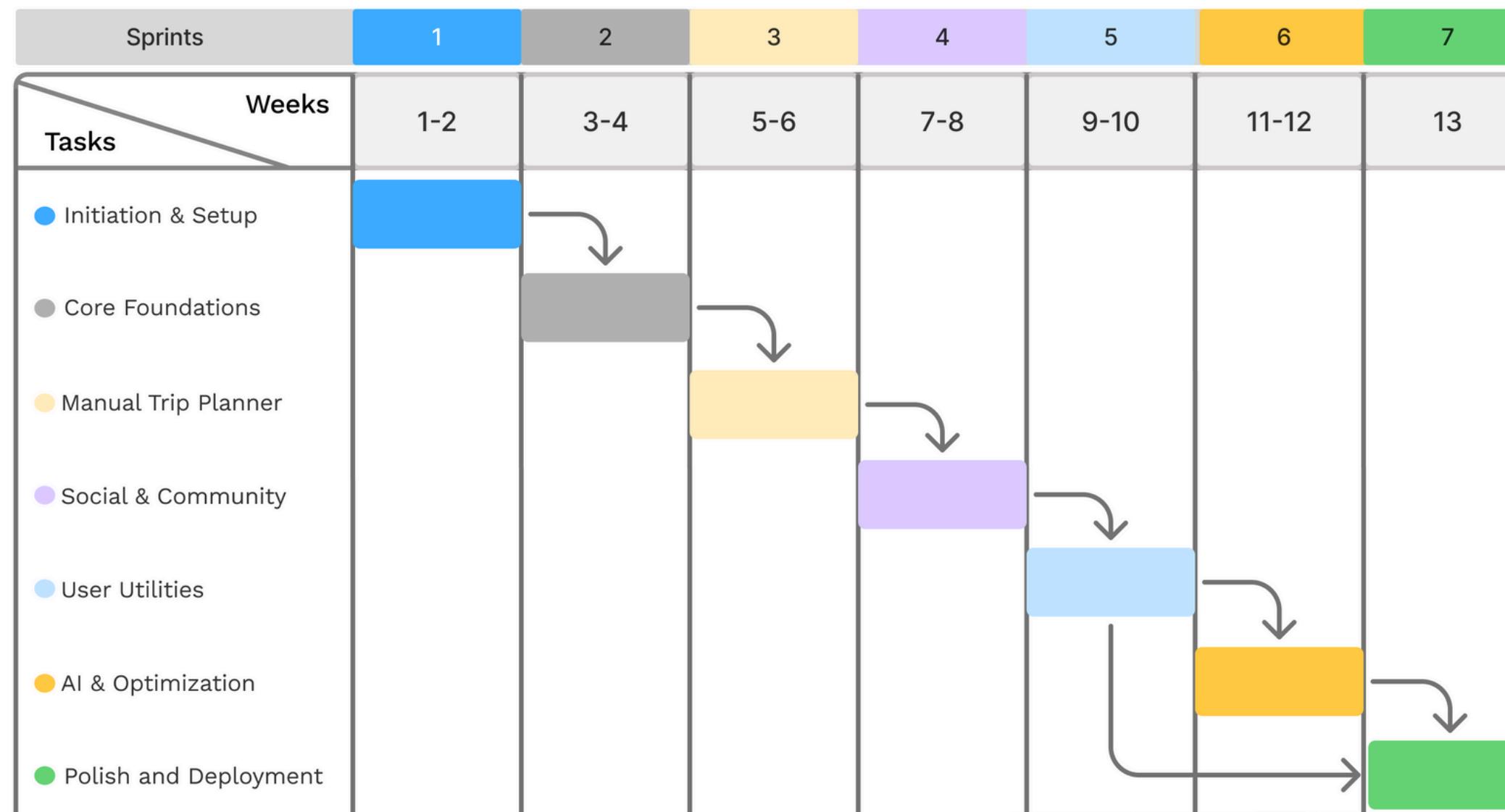
### Advanced & AI

- Add social feed, AI-generated itineraries, and route optimization.

### Deployment & QA

- Test, polish UI/UX, and deploy frontend and backend.

# Timeline Gantt Chart



- 01** Initiation and Setup
- 02** Core Foundations
- 03** Manual Trip Planner
- 04** Social & Community
- 05** User Utilities
- 06** AI & Optimization
- 07** Polish and Deployment

# Key Stakeholders



## End Users

Primary users planning trips, discovering destinations, and sharing experiences.



## Community / Social Groups

Contributing content, reviews, and recommendations.



## Investors / Sponsors

Funding the project and its development.



## Developers / Tech Team

Building, testing, and deploying the system.



## Admins / Managers

Responsible for platform oversight and management.

# Hardware, Software, & Tool Requirements



## PROGRAMMING LANGUAGES

- JavaScript / TypeScript
- HTML / CSS
- SQL
- NoSQL

## FRAMEWORKS & THIRD-PARTY LIBRARIES

### Frontend

- React.js
- Next.js
- Tailwind CSS
- Leaflet

### Backend

- Node.js (Express)
- OAuth
- WebSocket Libraries

## MAPS AND GIS

- OpenStreetMap (optional Google Maps)
- PostGIS (spatial functions for PostgreSQL)

## STORAGE

- Cloudinary or AWS S3 (for media storage)

## DATABASES

- PostgreSQL with PostGIS (for map heavy operations)
- MongoDB (for user-generated and flexible content)

## TESTING TOOLS

- Mocha (Node)
- Cypress (End-to-End)
- Postman for API testing

## VERSION CONTROL

- Git + Github



# Critical Challenges



## Technical Complexities

Real-time geolocation, mapping, route optimisation and ai itinerary generation

## Data Availability

Securing reliable location data and moderating user-generated content

## Resource Constraints

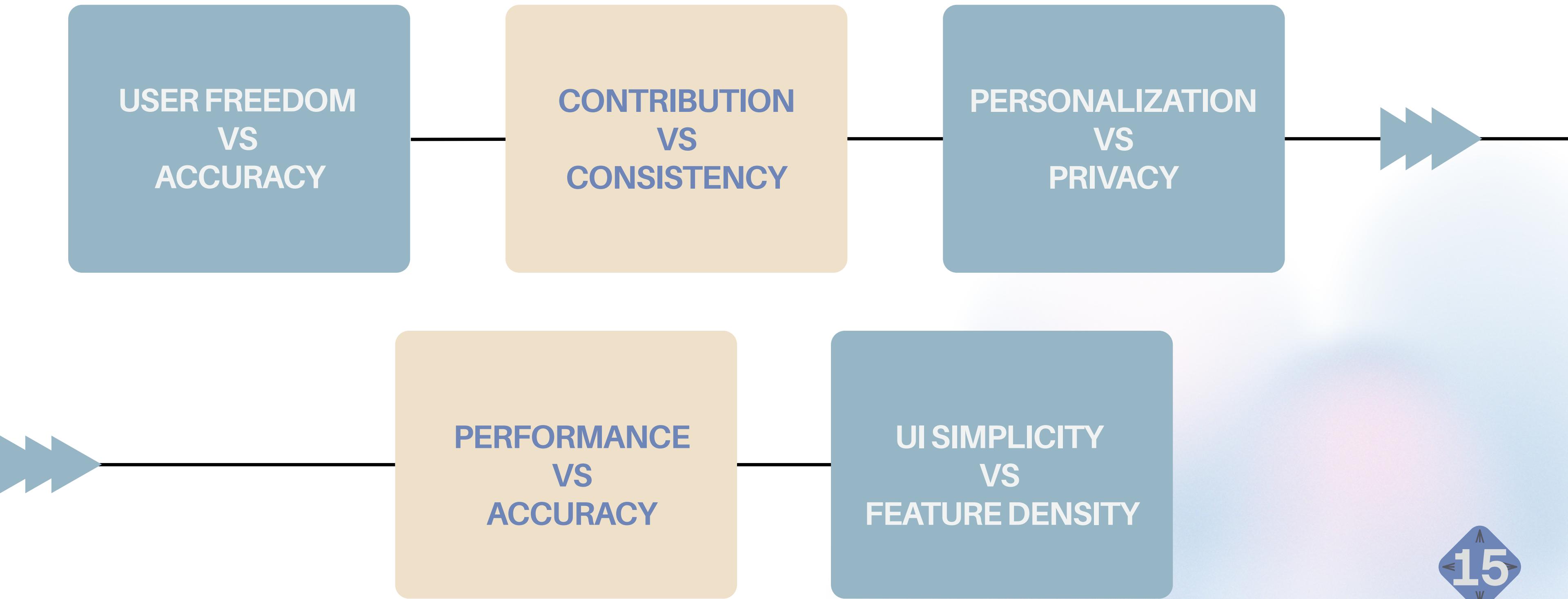
Paid APIs, storage and bandwidth for media

## Integration Issues

API compatibility, rate limits and offline functionality synchronization



# Conflicting Requirements



# Thank You

We are open for Q&A