

# Project Architecture

## Components and Modules

### Backend Services:

1. Dashboard - This service will be responsible to expose the APIs needed by the UI (View cost data, set budgets, view optimization recommendations, cost allocation)
2. User Service - Implement user authentication and authorization (access control) for different roles
3. Recommendations - Use AI/ML algorithms to generate optimization recommendations
4. Integrations - this service will be responsible to integrate with the Public Cloud's APIs and read the relevant data for different services
  - **AWS Integration:** Utilize AWS SDKs and APIs for retrieving cost data, managing EC2 instances and RDS databases.
  - **Cost Explorer API:** Access AWS Cost Explorer API for cost data.
  - **AWS Lambda:** Use Lambda functions for automated tasks such as resource tagging and optimization recommendations.

### Programming Language:

#### Backend

We will use Java for user path services, and Python for non-user path services. The services are mentioned below:

#### User path services

1. User service
2. Dashboard service

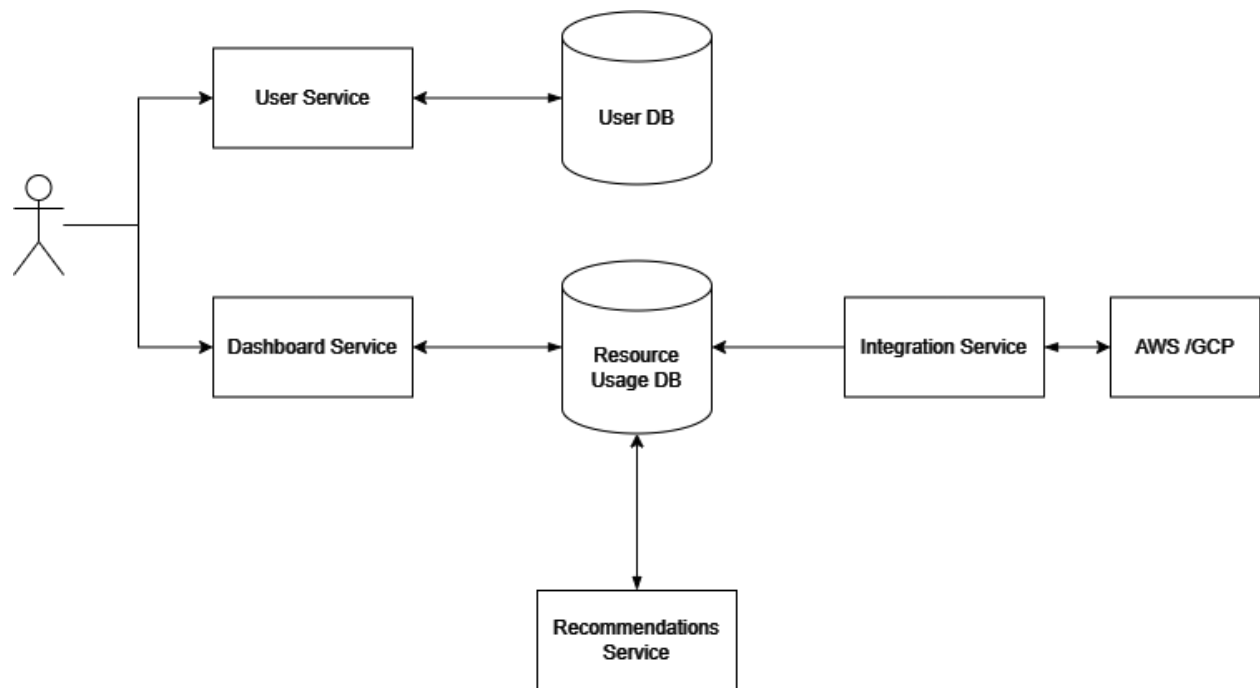
#### Non-user path services

1. Integrations service

#### Frontend

We will use React for the frontend

## Architecture Diagram



## Database

### UserDB

We will use MySQL for UserDB

### Schema

TBD

### ResourceUsageCostDB

We will use mongo for ResourceUsageCostDB

### Schema

TBD

## Interfaces and APIs

TBD