



Cloud-based Flight Search System

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Description

- A distributed flight search system that combines results from multiple airlines to give users the best set of flights
- Search speed
- Ease of use



Functionality

- Search for flights from multiple airlines
 - Sort by lowest price or time
- Save trips
- Delete trips

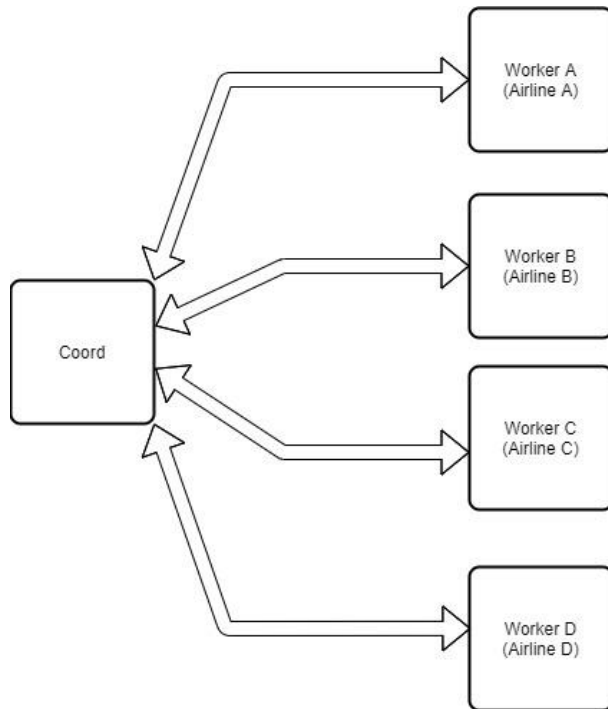


Backend

- Two components
 - Search API: algorithm for trip search
 - User-based APIs: user related requests

Search API

- Distributed Dijkstra's algorithm on multiple graphs
- Coordinator/worker structure
 - Coordinator spawns threads to alerts workers and process results
 - Workers keep flight table graphs, run multi-threaded Dijkstra's, and return results to coordinator





User-based APIs

- Modifies user NoSQL database in the backend
- Implements REST
 - User POST: create account
 - User GET: login
 - Trips POST: save trips
 - Trips DELETE: clear trips

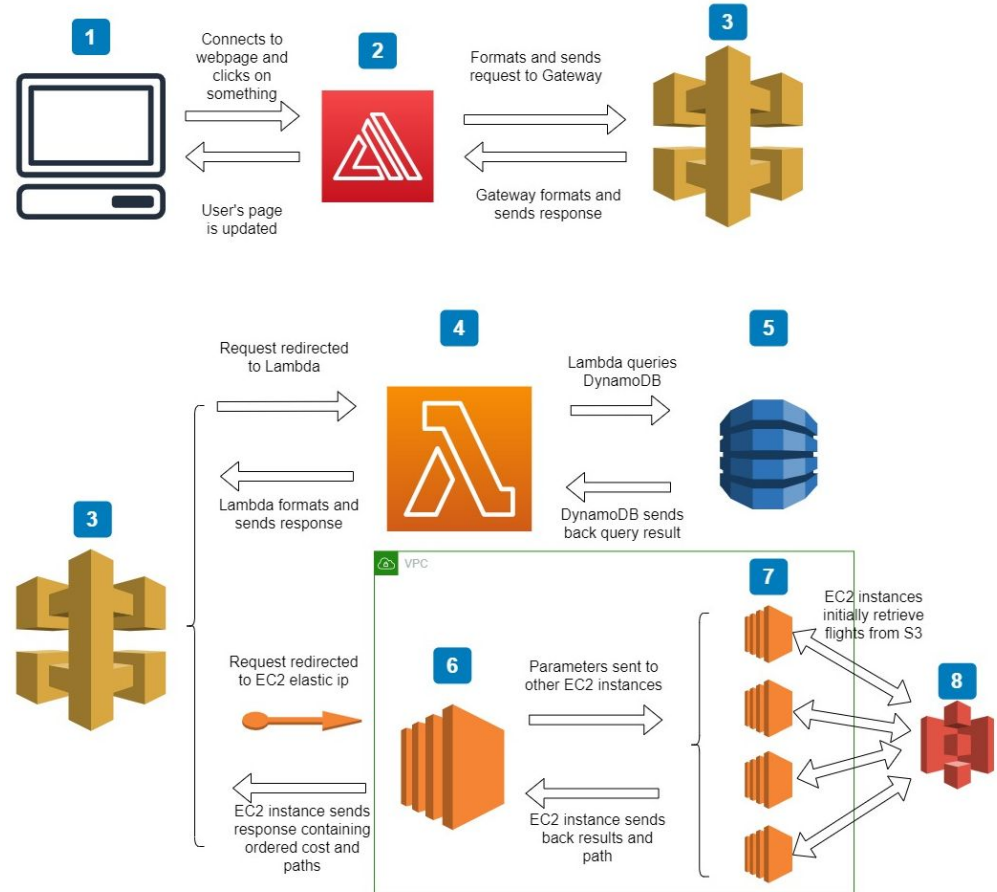


Frontend

- ReactJS web app
- 4 pages
 - Login
 - Register
 - Search
 - Search for flights
 - Save trips
 - Trips
 - View/Delete saved trips

Cloud Architecture

- EC2 and VPC
 - Search API
- Lambda and DynamoDB
 - User APIs
- S3
- API Gateway
- Amplify



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Demo