

Hotel Search & Booking System

Project Presentation by G1T6

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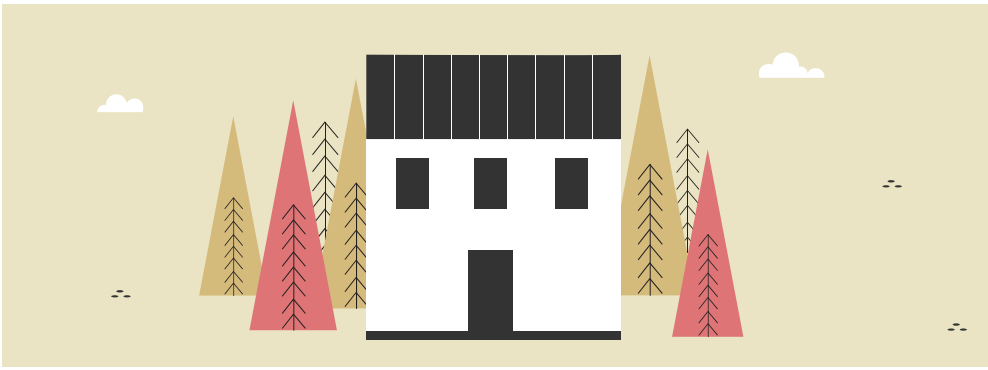
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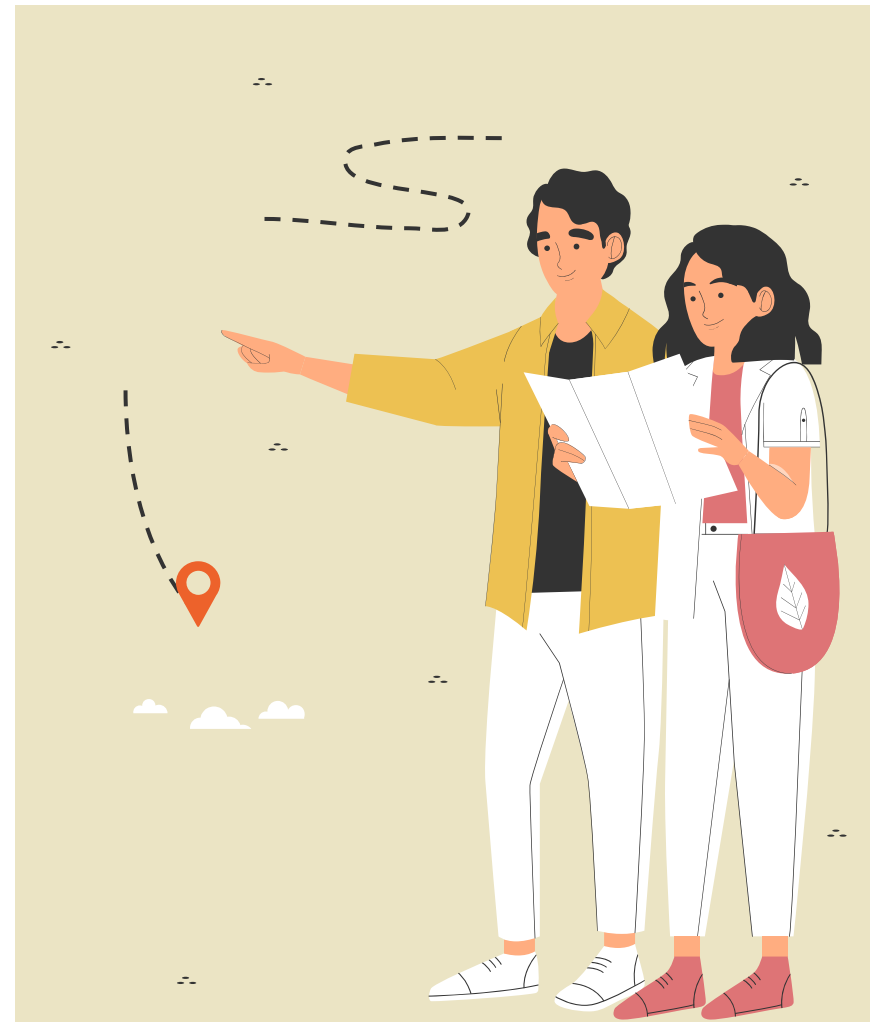
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Background

A Hotel Search and Booking System will be developed as requested by Ascenda Loyalty and used to power whitelabelled hotel booking platforms on behalf of banks, airlines and loyalty programs.



Business requirements

Derive (some) functional requirements from business requirements

Destination Search

01



Search by
Destination, list
provided by client

Hotel Search Results

02



Hotel Search
results returned
filtered by price

Booking Data

03



Booking hotel
through the
application

Quality requirements

Derive (some) non-functional requirements from quality requirements

Speed

01



Scalability

02



Maintainability

03



Data Security

04








Recovery

05

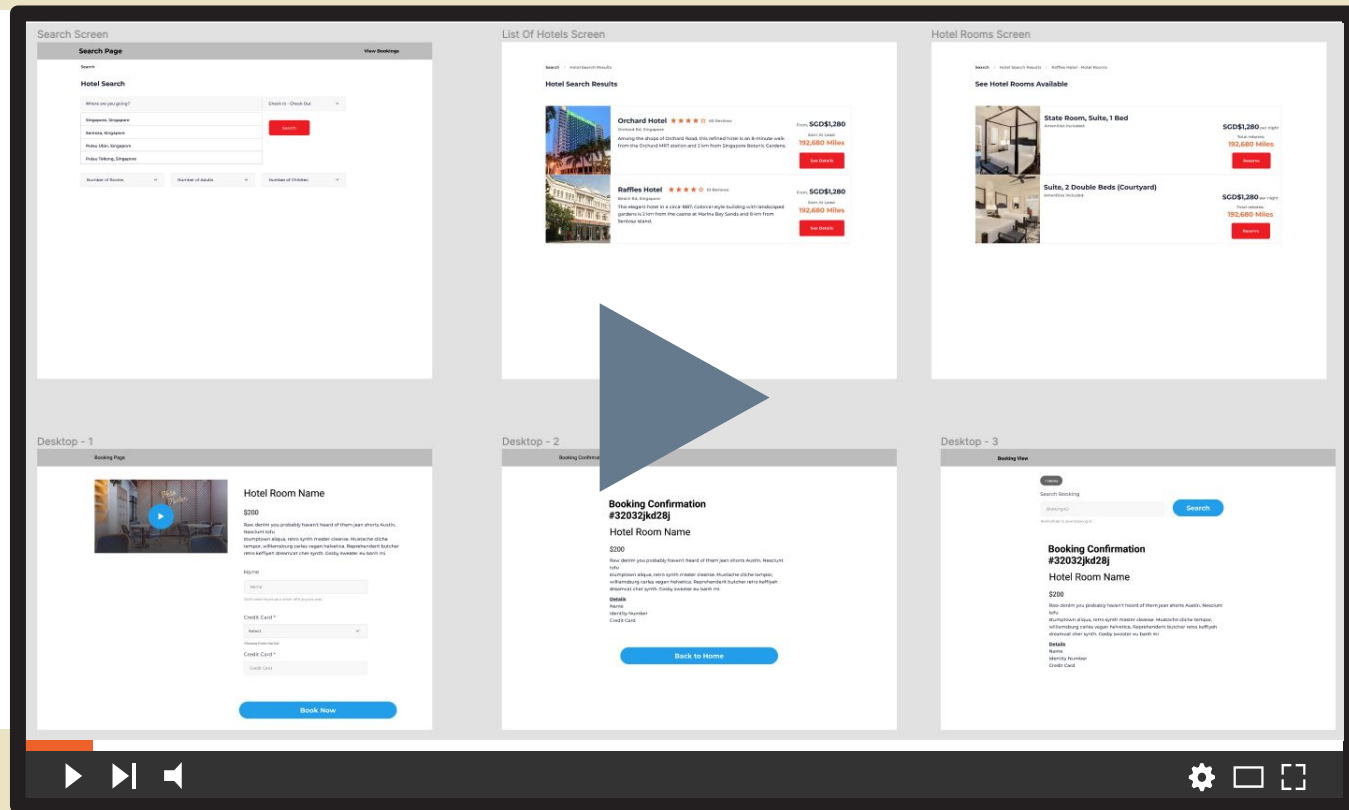


Stakeholders

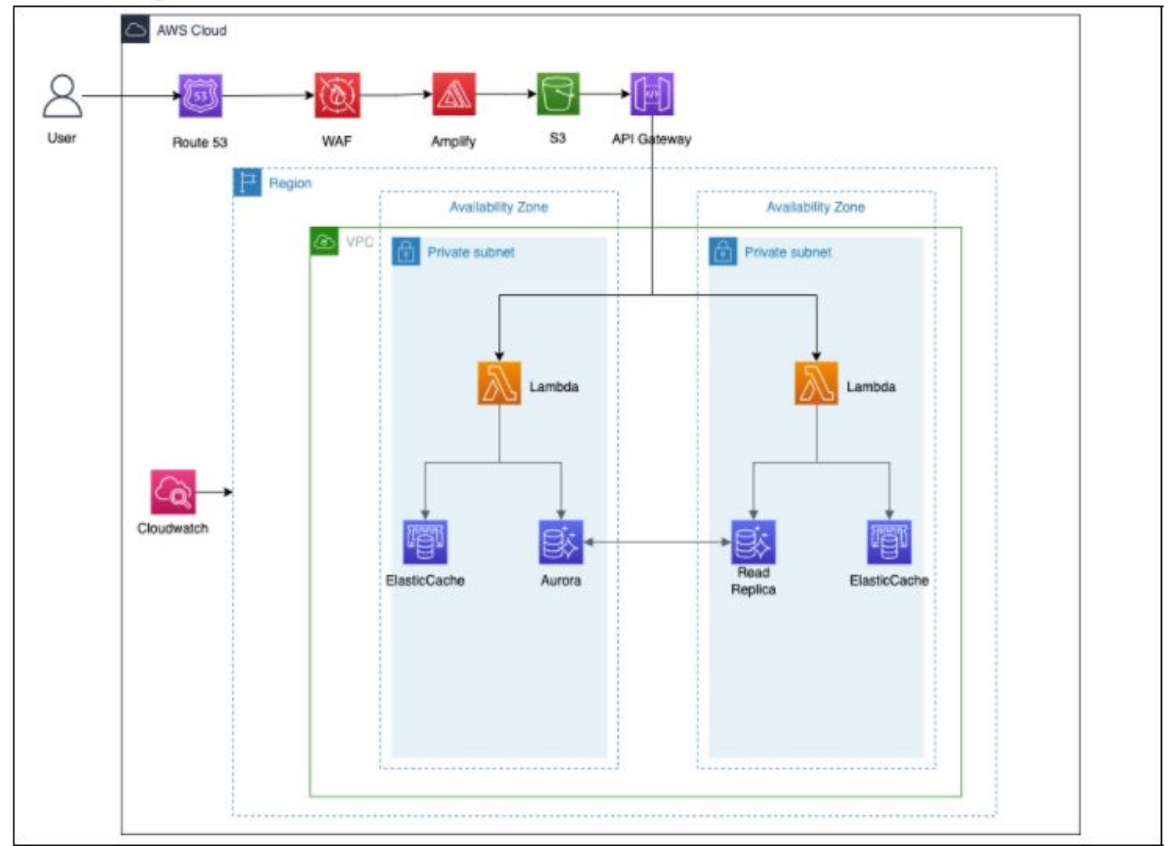
Ascenda		Client, has master access over system and data, configurable using IAM.
Hotel Suppliers		Provide data (no special read-write access)
Users		Can view hotel rooms and rates, and can make bookings
AWS		Provide PaaS including Lambda, Aurora, etc
Developers		Provide continued maintenance, frontend and backend developers would have varied read-write system access as required.

Figma Design

Hotel Search and Booking System

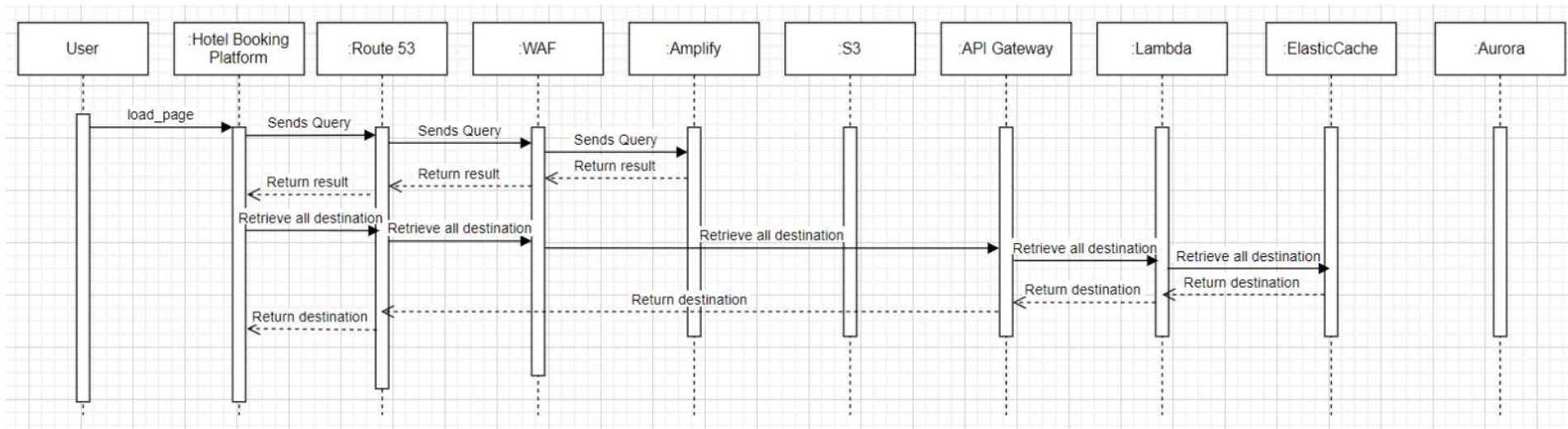


Solution Overview

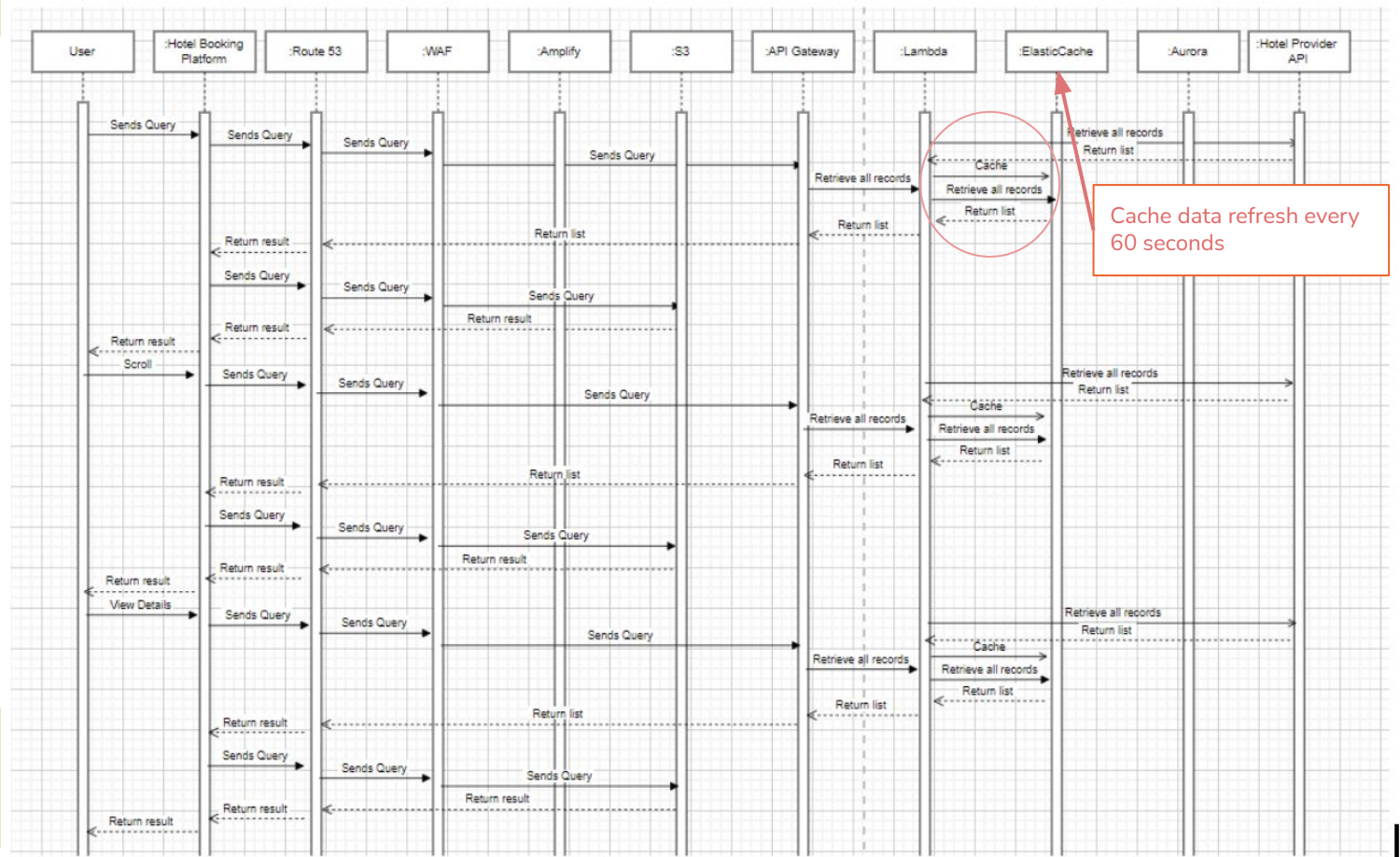


Sequence Diagram

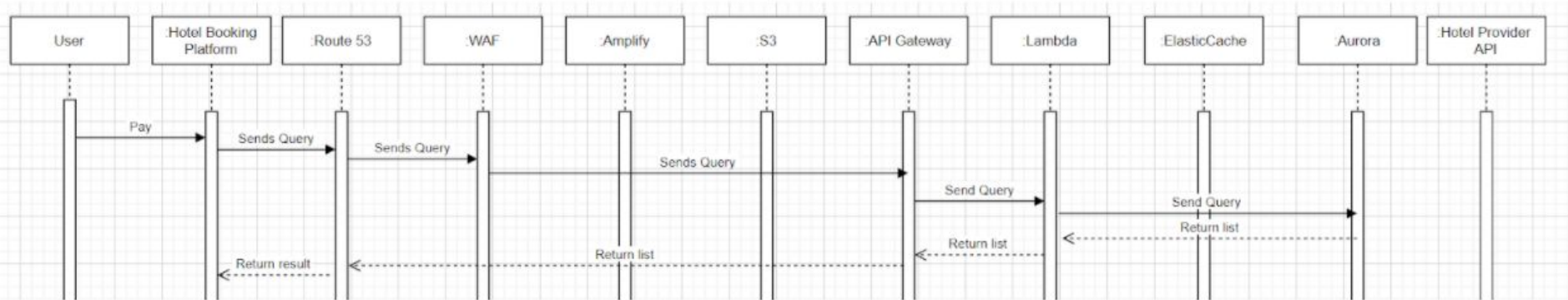
Use Case 1



Use Case 2 & Use Case 3



Use Case 4





AWS Amplify



Amazon ElastiCache



Amazon Aurora

Quality Attribute - Speed

- AWS Amplify distributes the web app to users globally with low-latency and high speed transfer of data.
- Combination of Amazon ElastiCache and Amazon Aurora creates a combination of fast in-memory cache and reliable database .



AWS Lambda



Amazon S3

Quality Attribute - Scalability

- AWS Lambda is able to adjust the number of instance according to the number of events without the need for configuration or deployment due to its serverless nature.
- AWS S3 offer a pay-as-you-use model which allows us to start small and slowly scale up in the future without compromise on performance or reliability.



Amazon API
Gateway



AWS Amplify



Github

Quality Attribute - Ease of Maintenance

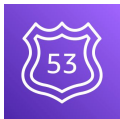
- AWS API Gateway allows for easy maintenance of the many APIs used within our application as it is a fully managed service by AWS
- A CI/CD pipeline automates the deployment of application changes to reduce manual errors and time spent.



AWS WAF



AWS IAM



Amazon Route 53

Quality Attribute - Security

- AWS Amplify, AWS Web Application Firewall (WAF), and Amazon Route 53 work seamlessly together to create a flexible, layered security perimeter against multiple types of attack.
- All data would be encrypted at rest in Amazon Aurora. Access control managed by AWS IAM.



Amazon
CloudWatch



Amazon API
Gateway



AWS Lambda



Amazon Aurora

Quality Attribute - Resilience & Data Recovery

- AWS managed services offer several features to support data resiliency, backup needs and recovery.
- Multi-AZ architecture ensures the system remains available when unexpected events occur.
- AWS API Gateway is capable to act as a load balancer ensuring the system to be highly available.

Development Budget



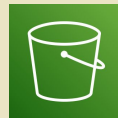
Amazon API
Gateway
(Free Tier)



AWS Lambda
(Free Tier)



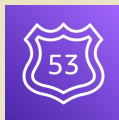
AWS Amplify
(Free Tier)



Amazon S3
(Free Tier)



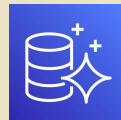
Amazon
CloudWatch
(Free Tier)



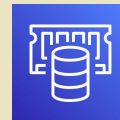
Amazon Route 53
(\$0.90 USD)



AWS WAF
(\$6.60 USD)



Amazon Aurora
(\$29.93 USD)



Amazon ElastiCache
(\$24.82 USD)

Monthly Total: \$62.25 USD

Production Budget



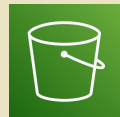
Amazon API
Gateway
(\$32.24 USD)



AWS Lambda
(\$164.59 USD)



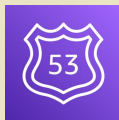
AWS Amplify
(Free Tier)



Amazon S3
(\$7.52 USD)



Amazon
CloudWatch
(Free Tier)



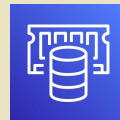
Amazon Route 53
(\$0.90 USD)



AWS WAF
(\$6.60 USD)



Amazon Aurora
(\$132.35 USD)



Amazon ElastiCache
(\$24.82 USD)

Monthly Total: \$369.02 USD