Jayil - Tourism Application

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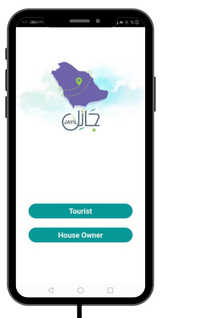
Abstract

Jayil application is a comprehensive solution for tourists in Saudi Arabia, offering a range of services to simplify travel planning and exploration. It uses association rule mining algorithm for recommendation system, and dynamic salesman problem to create a plan, an interactive map, currency conversion and language translation features to remove barriers and simplify communications. The app also integrates with Booking.com and allows house owners to list their accommodations, contributing to the growth of Saudi Arabia's tourism industry and providing a seamless and unforgettable travel experience for tourists.

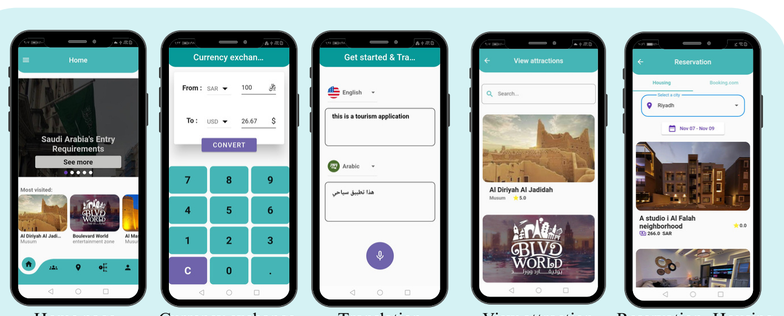
Objectives

- Highlighting Saudi Arabia's tourism industry and backing Vision 2023.
- Making recommendations to individuals who may not be familiar with Saudi landmarks.
- Providing all the services the tourist requires in a single application.
- Enabling homeowners to advertise their properties, earn money from them, and manage their reservations.

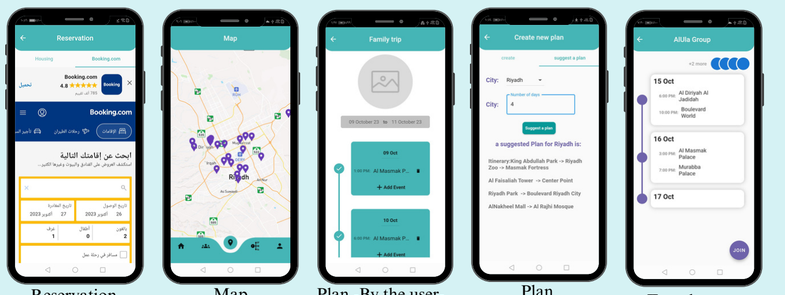
Result



Tourist

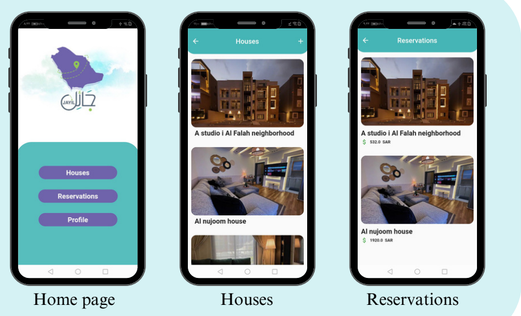


Home page | Currency exchange | Translation | View attraction | Reservation -Housing-



Reservation -Booking.com- | Map | Plan -By the user- | Plan -By the algorithm- | Travel group

House owner



Home page | Houses | Reservations

Algorithms

Disjunctive Rule Mining

1- Data Preparation: Collecting a dataset and convert it to transactions

2- Rule Generation: Extract disjunctive rules between attractions.

3- Rule Evaluation: Measuring strength and reliability of the rule.

4- Rule Application: The result is used to recommend attractions.

Traveling salesman Held-Karp

1- Data Representation: Represent cities, their attractions, and the distance.

2- Set Iteration: Apply the dynamic programming concept.

3- Get Optimal Rout: Calculate the shortest optimal rout.

4- Set Duration: Divide the total attractions by any duration.

Tools

Python | Flutter | VS code | Flask

R | Dart | Firebase | Mapbox

Conclusion

We have proposed a full-featured mobile application using well known algorithm that has best complexity. The Jayil system, in our opinion, combines convenience, accessibility, and community involvement, enhancing the travel experience for tourists while providing a venue for locals to advertise their residences and communicate with tourists. It promotes sustainable tourism methods and fosters cultural interchange, making it a useful tool for both tourists and hosts.

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