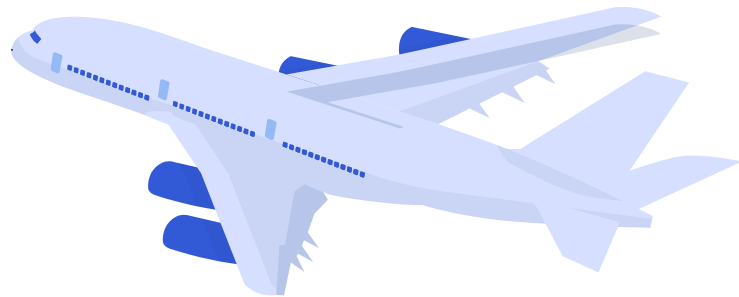
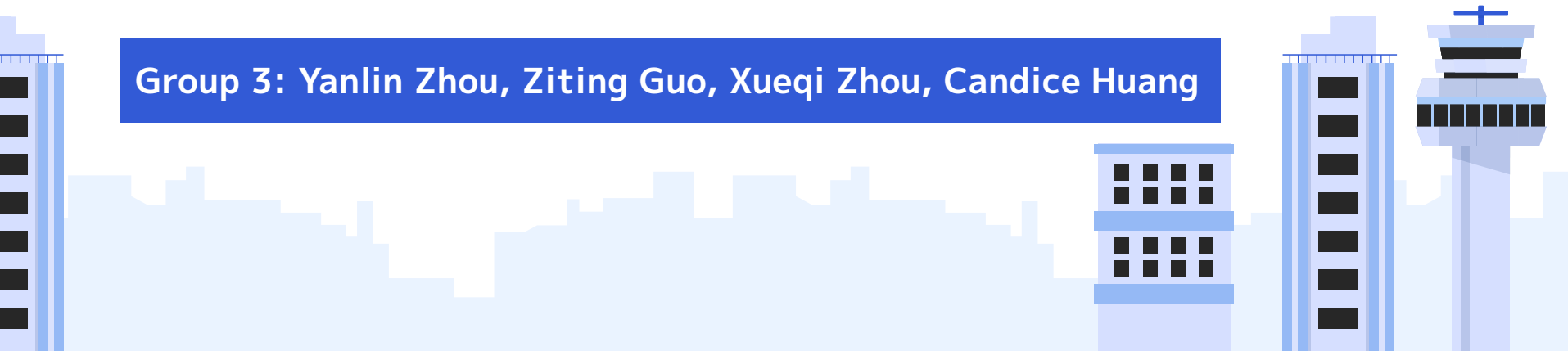


Super Travel



Group 3: Yanlin Zhou, Ziting Guo, Xueqi Zhou, Candice Huang

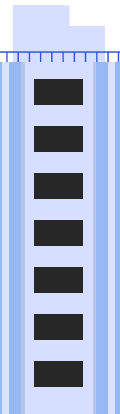




Super Travel

SuperTravel is a third-party platform that provides customers with a one-stop-shop for airline tickets, rental cars, and hotel bookings.

SuperTravel has approached us **to create a comprehensive and efficient database** that can quickly **update travel and user data, record reservation information, incorporate user reviews and feedback, and store company information.** By providing SuperTravel with a centralized platform for their data, our improved **database design will help them to access and analyze data quickly and efficiently,** leading to better business decisions and improved customer service.



Data Overview

Real Data

travelCode	userCode	from	to	flightType	price	time	distance	agency	date
850	425	4	Aracaju (SE) Campo Grande (MS)	firstClass	1389.37	1.69	650.10	CloudFy	09/26/2019
851	425	4	Campo Grande (MS) Aracaju (SE)	firstClass	1581.80	1.69	650.10	CloudFy	09/29/2019
8994	4497	45	Aracaju (SE) Brasilia (DF)	premium	755.62	1.11	425.98	CloudFy	10/08/2020
8995	4497	45	Brasilia (DF) Aracaju (SE)	premium	987.07	1.11	425.98	CloudFy	10/10/2020
9458	4729	47	Aracaju (SE) Rio de Janeiro (RJ)	economic	717.04	1.55	597.61	CloudFy	04/09/2020

Simulated Data

user_id	first_name	last_name	gender	email	phone_number	credit_card	address_id
1	Renae	Wong	Female	rwong0@wikia.com	391-305-7828	3.54938E+15	1
2	Garwood	Langmuir	Male	glangmuir1@seesaa.net	106-414-5723	6.70995E+15	2
3	Nate	Gulberg	Male	ngulberg2@amazon.com	923-154-5798	3.37942E+14	3
4	Galen	Shillitto	Male	gshillitto3@cbslocal.com	289-413-9218	5.55811E+15	4

Normalization Plan

1

Goal

Design a centralized database that addresses SuperTravel's needs and improves their decision-making process

2

Research

Researched vacation planning tools such as Booking.com and TripAdvisor to understand the standard data requirements for a travel booking database.



3

Design

Design a database that centralizes SuperTravel's data and enables efficient access to customer data and company data

4

ETL

Extract, transform, and load data from multiple sources into a unified format. Use real data as much as possible and generate virtual data to fill in the gaps.

Database Design

1

Goal

SuperTravel database involves creating 15 tables that adhere to the third normal form (3NF) to ensure data consistency and accuracy.

2

Data Preparation

Acquire actual travel reservation data from kaggle. Try to subtract useful data columns from real data as much as possible and generate virtual data to fill in the gaps.



3

Design

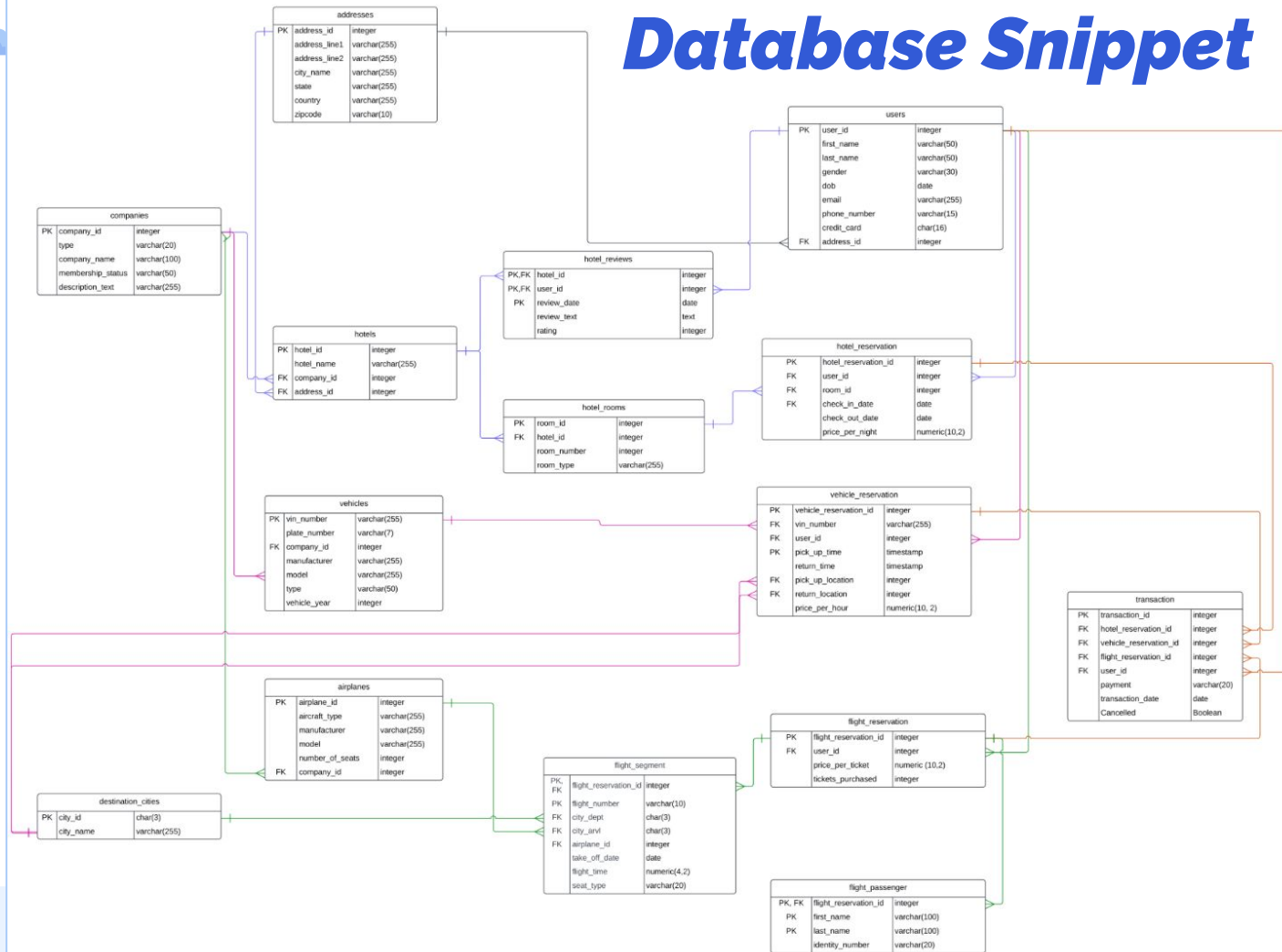
Includes tables for users, companies, addresses, destination cities, flights, flight segments, flight passengers, vehicles, hotels, hotel room types, hotel rooms, hotel reservations, vehicle reservations, flight reservations, and transactions.

4

Benefit

Allow users to book flights, rental cars, and hotels, make reviews, manage reservations, and make transactions. Help SuperTravel tailor their offerings to user preferences.

Database Snippet



ETL Process



Extract

Extract data from CSV files and simulated data through Python.

Real data (flights, hotels, car rental and reviews)
Simulated data (users, Flight_passager, airplanes, etc)



Transform

Utilizing Python to clean the data, select relevant columns, and create new dataframes with the database schema designed to fulfill SuperTravel's needs.

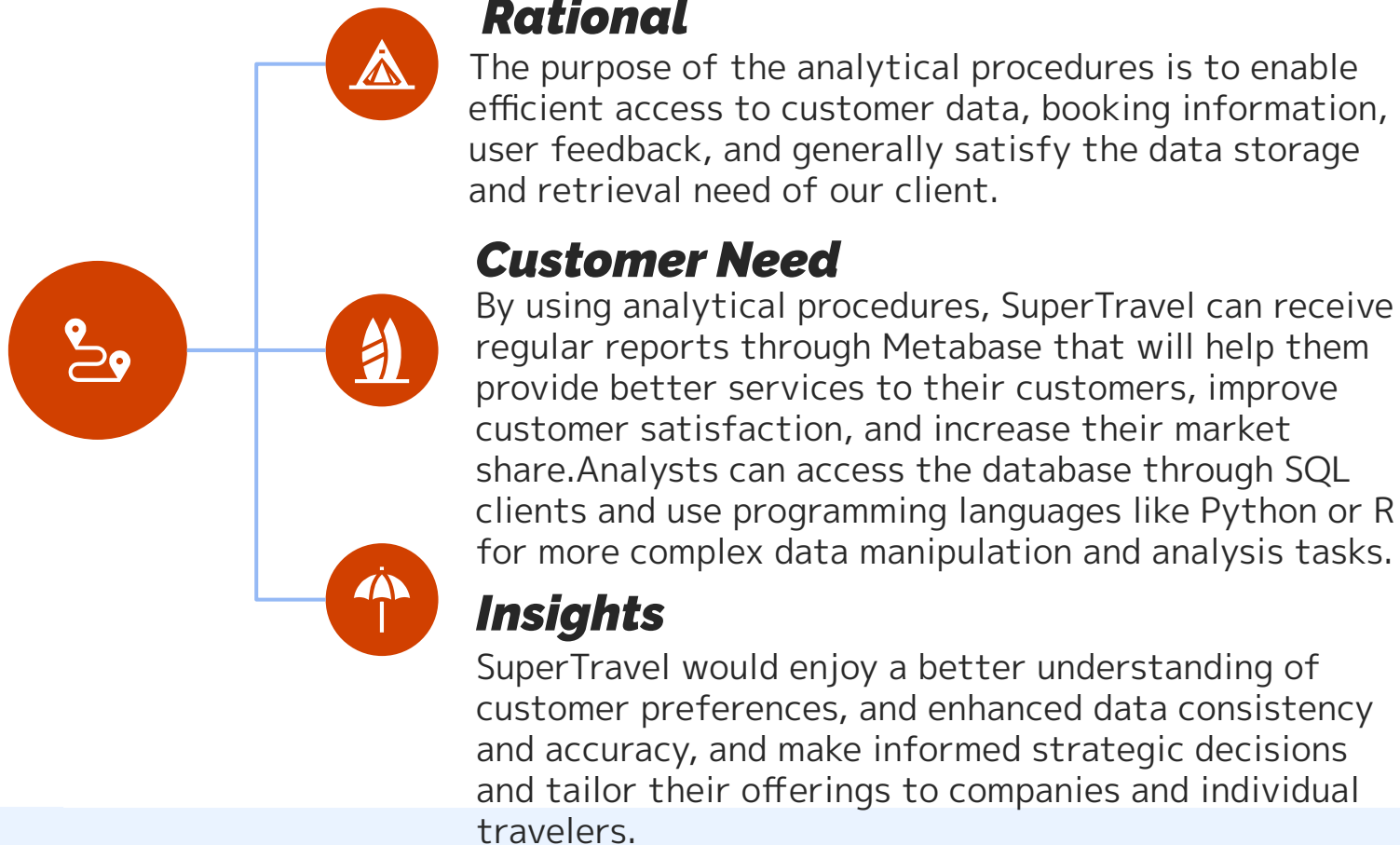


Load

Load transformed data into SQL.

After data quality check, load aggregated data into 15 designed 3NF tables.

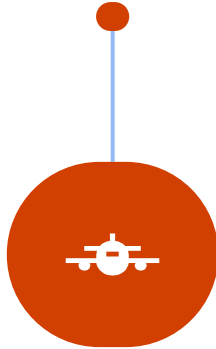
Analytical Process



Redundancy & Performance Concerns

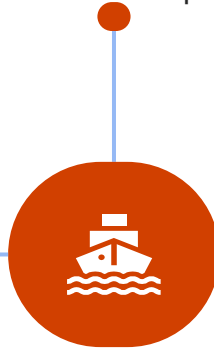
Queries

Ensure queries are
as efficient as
possible



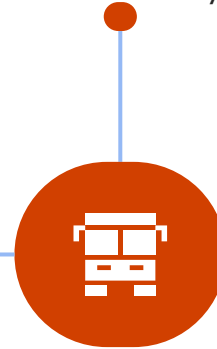
Servers

Store data in
distributed servers
for performance
and backups



NFs

Use 3NF tables in
the database to
maintain data
consistency



Database Interaction

Q1



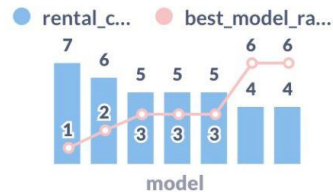
Q2

^ hotel_name	^ company_name	^ lo
Hotel AU	Mcneil-Bonilla	Reci
Rows 1-1 of 7		

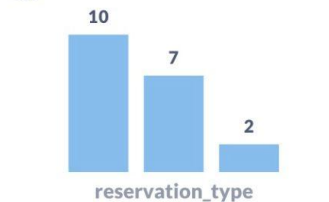
Q3

^ hotel_name	^ rating	^ review_text
Hotel BD	10	Exceptional
Rows 1-1 of 165		

Q4



Q5



Q6



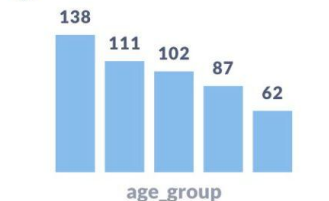
Q7

^ user_id	^ first_name	^ last_name
10	Angel	Fernier
Rows 1-1 of 11		

Q8

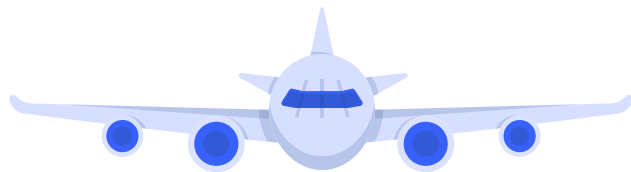
^ transaction_id	^ hotel_reservation_id
3	179
Rows 1-1 of 161	

Q9



Q10

^ user_id	^ first_name	^ last_name
34	Federica	Hallums
Rows 1-1 of 6		



Thank You !!!

