BLACKTECH CAPSTONE

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Hotel Bookings

Hotel Case Study: Agenda

Entity Relationship Diagram (ERD)

ERD Description

1

2

Issues

Data Quality Issues

Recommendations

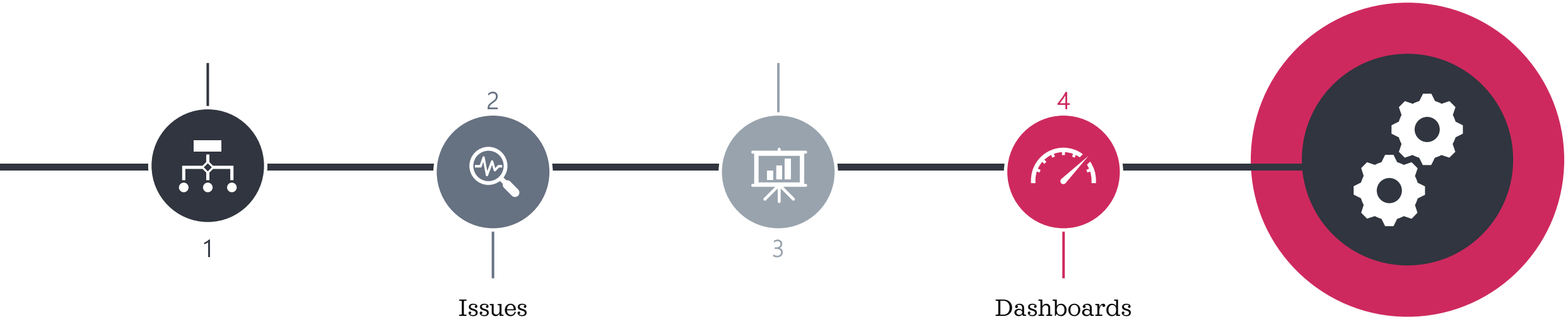
Data Quality Recommendations

3

4

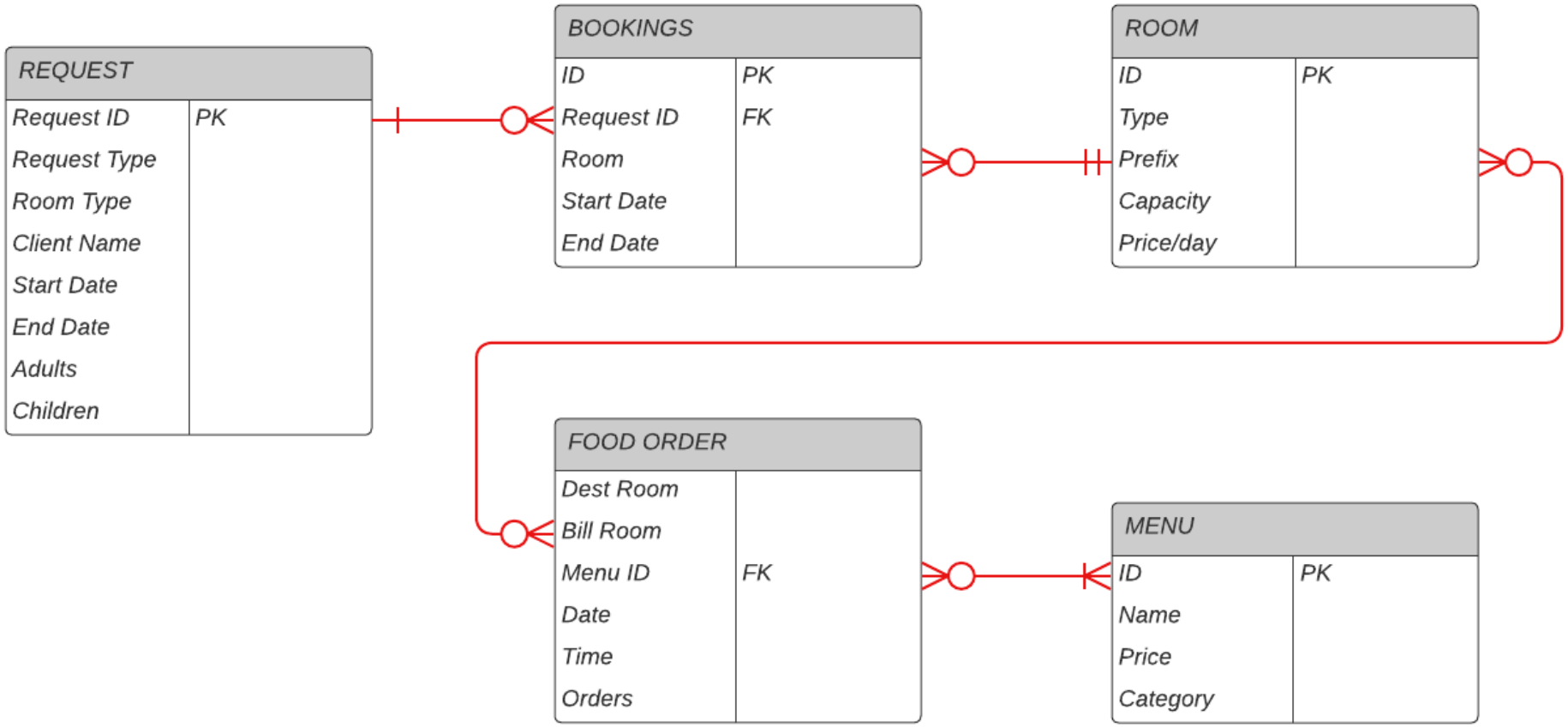
Dashboards

Hotel Bookings Dashboard
Food Order Dashboard



Your logo

Entity Relationship Diagram (ERD)



ERD Description

- Request Table: Request table contains information about client requests, including the room type, number of occupants and request dates. The request ID serves as the unique identifier (PK) which is referenced in other tables. A one to many relationship exists between the Request and Booking tables
- Booking Table: This table contains information about booked rooms, the booked dates. It has a unique identifier - Booking ID - and references the Request ID as a foreign key. A many to one relationship exists between the Booking and Room tables
- Room Table: This table contains the capacity and pricing information of each room type and has a Room ID unique identifier (PK). A one to many relationship exists between the Room and Booking tables.
- Menu Table: This table lists the names and prices of each menu item uniquely identified with the Menu ID (PK). A many to many relationship exists between the Food Order and Menu tables
- Food Order: This table lists information about the date and time of food ordered and references the Menu ID as a foreign key

Hotel Bookings: Summary

- Data was imported and cleaned for analysis using SQL and visualized using Power BI
- Holiday had the highest amount of bookings with 3,441 bookings and generated the largest highest revenue of $1.59M
- Normal rooms had the highest number of bookings with about 3.3k bookings and generated the highest hotel revenue of $1.22M
- $51,670 was lost due to 281 requests that didn't follow through.
- Normal rooms had the highest amount of lost hotel revenue - $15,440 - due to failed requests
- Steak 'N' Stuff generated the highest food revenue and French breakfast was the most ordered at 600 orders
- Large conference rooms generated the highest food revenue and the ordered the most amount of food
- Dinners had the largest amount of orders monthly with about 2727 orders.

Data Quality: Issues

- Wrong Format: Inconsistent time format in Food Orders table i.e. 24hr format and 12hr format
- Wrong Values: Wrong year values were entered in booking start and end dates during data entry
- Redundant Values: the categorical data, vacation is a synonym for holiday in the request type column of the Request table
- Redundant Field: The “Room ID” primary key is not referenced in other tables.
- No “Food Order” table primary key
- Inconsistent attribute names in different tables

Data Quality: Recommendations

- Investment in database management systems like Azure or Oracle for easy data storage, manipulation and analysis
- Validation for request type, time and booking date columns should be established for accurate data entry
- Use of “Room ID” primary key in “Request” and “Food Order” tables to facilitate easy retrieval of room data
- Addition of “number of rooms” column in “Request” table to easily calculate capacity limits
- Creation of “Client” table to store client information, reward frequent customers, and for targeted ads.
- A separate column for title should be added to eliminate issues with searching client names.

HOTELS GROUP

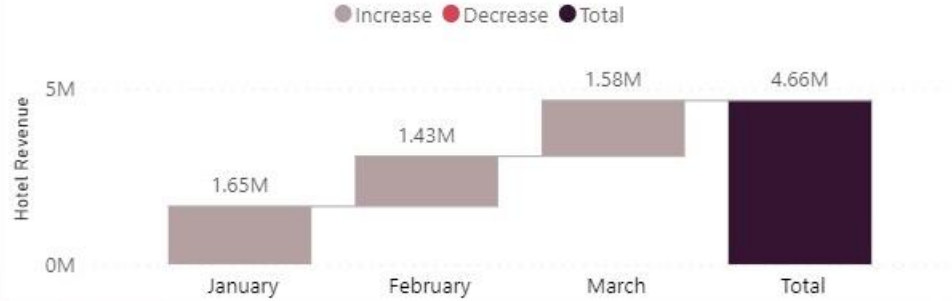
Quarterly Hotel Booking Dashboard

10.35K	4.66M	4.73M
Number of Bookings	Hotel Revenue	Total Revenue

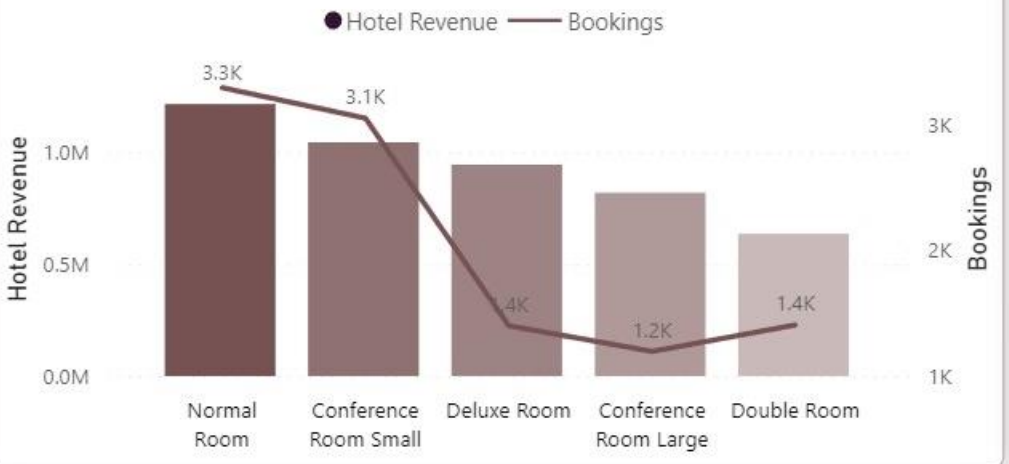
01/01/2016 30/04/2016

Bookings by Date

Hotel Revenue and Number of Bookings by Month

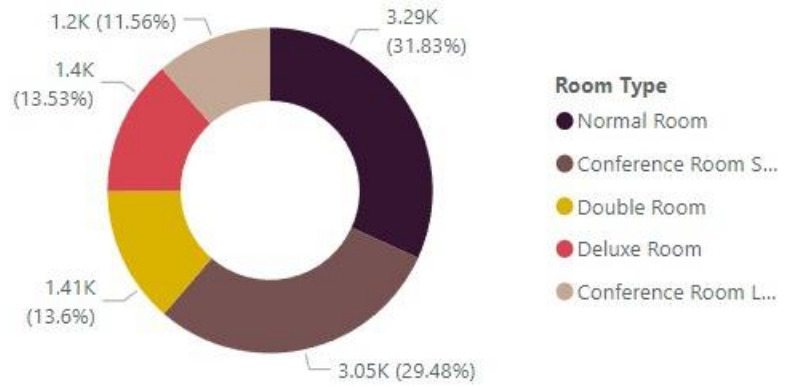


Hotel Revenue and Bookings by Room Type



Number of Bookings by Request Type

Number of Bookings by Room Type



HOTELS GROUP

Quarterly Food Order Dashboard

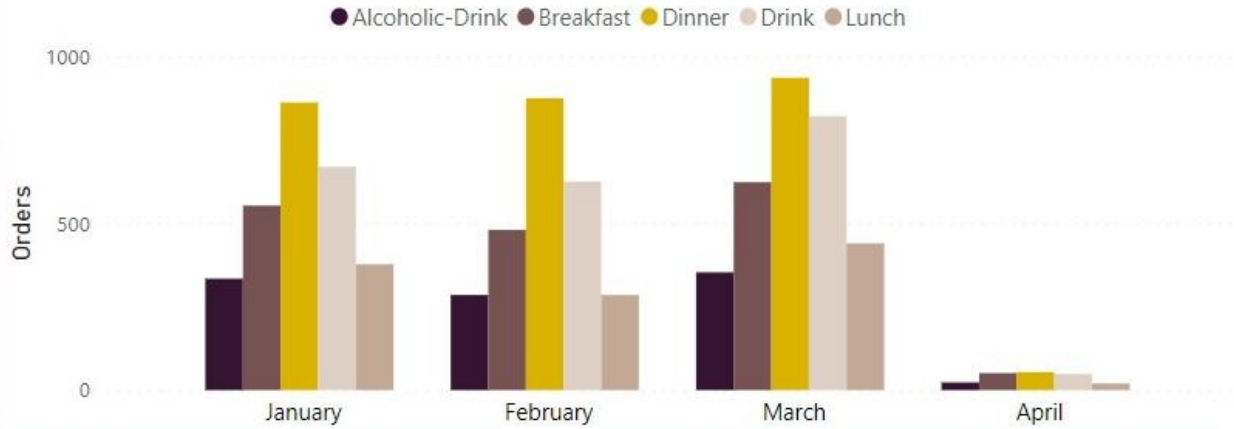
01/01/2016 30/04/2016

8714
Orders

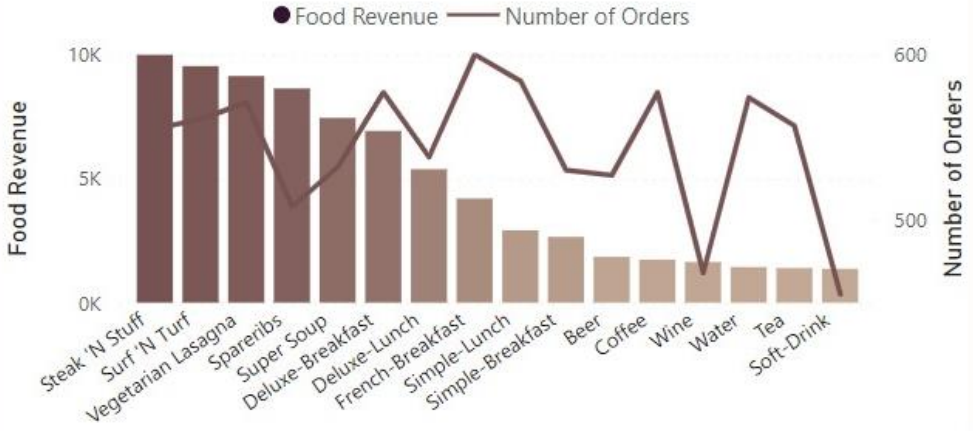
76.23K
Food_Cost

Orders by Date

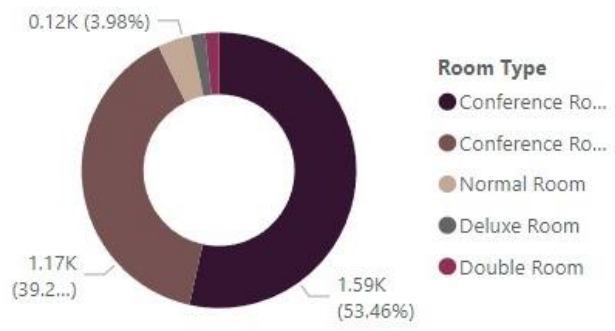
Orders by Month and Category



Food Revenue and Number of Orders by Menu



Orders by Room Type



Food Revenue and Orders by Room Type

INSIGHTS

Bookings/ Request/ Rooms Insights

Bookings per Month

- Bookings trended down, resulting in a 5.88% decrease between Friday, January 1, 2016 and Wednesday, March 30, 2016.
- Bookings started trending down on Saturday, February 27, 2016, falling by 23.08% (30) in 16 days.
- Bookings dropped from 125 to 105 during its steepest decline between Monday, January 11, 2016 and Wednesday, January 20, 2016.

Booking per Category

- At 3,441, Holiday had the highest Number of Bookings and was 31,181.82% higher than Vacation, which had the lowest Number of Bookings at 11.
- Holiday accounted for 33.26% of Number of Bookings.
- Across all 6 Request Type, Number of Bookings ranged from 11 to 3,441.

Bookings Per Room Type

- Normal Room accounted for 31.83% of Number of Bookings.

Hotel Revenue per Room Type

- At 1215280, Normal Room had the highest Hotel Revenue and was 91.20% higher than Double Room, which had the lowest Hotel Revenue at 635600.
- Hotel Revenue and total Bookings are positively correlated with each other.
- Normal Room accounted for 26.08% of Hotel Revenue.
- Hotel Revenue and Bookings diverged the most when the Room Type was Normal Room, when Hotel Revenue were 1211987 higher than Bookings.

Food Order Menu Insights

Orders by Date

- Orders trended down, resulting in a 78.26% decrease between Friday, January 1, 2016 and Thursday, April 7, 2016.
- Orders started trending down on Thursday, March 17, 2016, falling by 96.38% (133) in 21 days.
- Orders jumped from 23 to 51 during its steepest incline between Friday, January 1, 2016 and Tuesday, January 5, 2016.

Food Order and Number of Orders by Menu

- At 9990, Steak 'N Stuff had the highest Food Revenue and was 631.87% higher than Soft-Drink, which had the lowest Food Revenue at 1365.
- Steak 'N Stuff accounted for 13.11% of Food Revenue.
- Food Revenue and Number of Orders diverged the most when the Menu was Steak 'N Stuff, when Food Revenue were 9435 higher than Number of Orders.

Orders Per Room Type

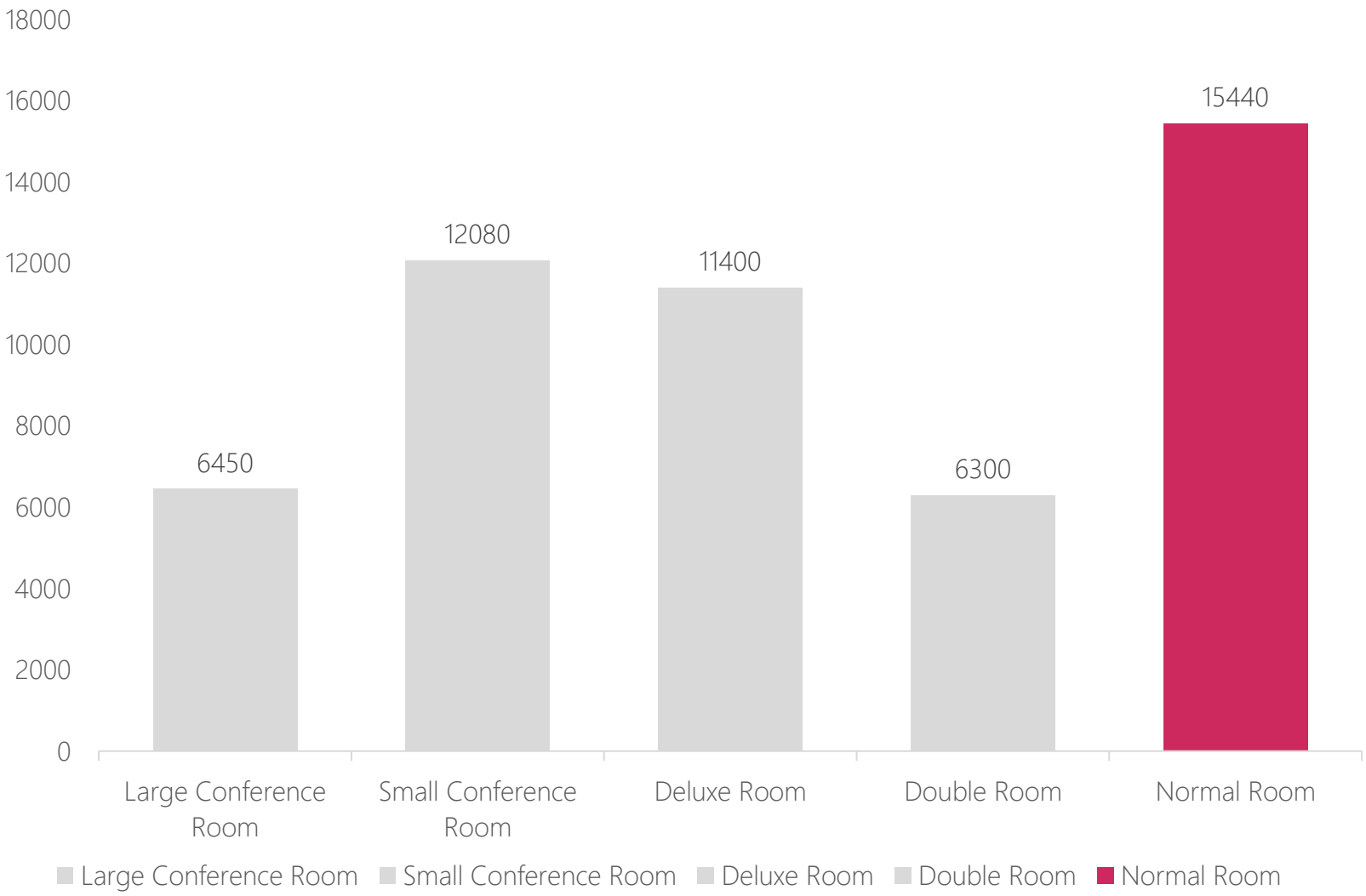
- Conference Room Large accounted for 53.46% of Orders.

Orders Per Month

- 10.74% of Orders across all categories were made in March.

Food Revenue Per Room Type

- At $41,192, Conference Room Large had the highest Food Revenue and was 3,942.39% higher than Double Room, which had the lowest Food Revenue at $1,019.
- Food Revenue and Total Orders are positively correlated with each other.
- Conference Room Large accounted for 54.04% of Food Revenue.
- Food Revenue and Orders diverged the most when the Room Type was Conference Room Large, when Food Revenue were 36504 higher than Orders.

Thank You

Revenue Lost per Room Type