

**HOTEL INFO SYSTEM**

APRIL 23, 2023

Alex Safarian, Jeff Calica, Parth Gohil, Temuujin Dorjbat

**SUBLIME HOTELS** Presented by:ISCON

Project Scope StatementDate:April 23, 2023

**GENERAL PROJECT INFORMATION**

Project Name: Hotel Information System

Project Manager: Yue Zhang

Project Members: Alex Safarian, Jeff Calica, Parth Gohil, Temuujin Dorjbat

**PROBLEM/OPPORTUNITY STATEMENT**

The Sublime Hotels team is having trouble keeping an accurate record of transactions and reservations at the hotels and are in dire need of a new information system to help operate the business more effectively and accurately.

**PROJECT OBJECTIVES**

To create a database to better keep track of sales transactions and customer profiles, as well as keep track of damage that occurred to the hotel. The hotel can use our database to manage and analyze sales transactions to better marketing and fund allocation. The database can be used to help make relationship-driven marketing plans that boost consumer responsiveness and revenue. When using our database, accessing, storing, and maintaining any sort of data will be easy and simple. Our database will also be eliminating redundant data and protecting the data from unauthorized systems. Data access will also be easy for the user.

**PROJECT DESCRIPTION**

A new information system will be constructed that will collect all customer reservation and invoice data. All data of the hotel facilities data will be included, from the hotel branch info, hotel employees, hotel rooms, and room types.

**ESTIMATED PROJECT DURATION**

Project will be completed no later than May 23, 2023

**ENTITY RELATIONSHIP DIAGRAM**

**A picture containing text, indoor

Description automatically generated**

**BUSINESS RULES**

|  |  |  |
| --- | --- | --- |
| **RULES** | **ARGUMENT** | **CARDINALITY** |
| Each EMPLOYEE designates many INVOICEs or none.  Each INVOICE is designated by one and only one EMPLOYEE. | An employee can create many invoices, but only one employee can each invoice. | **1-M** |
| Each INVOICE belongs to one and only one CUSTOMER.  Each CUSTOMER is recorded on one and only one INVOICE. | A single customer can be used on one invoice, and it can only belong to said customer. | **1-1** |
| Each CUSTOMER has many RESERVATIONs or none.  Each RESERVATION is assigned to one and only one CUSTOMER. | A customer can make many reservations at a hotel, but the reservation only belongs to the customer who reserved it. | **1-M** |
| Each ROOM has many RESERVATIONs or none.  Each RESERVATION is assigned to one and only one ROOM. | A room can be reserved many times but when a room is reserved a reservation belongs to one room only | **1-M** |
| Each HOTEL contains many ROOMS.  Each ROOM belongs to one and only one HOTEL. | Every hotel has many rooms, and all of these rooms belong to the hotel. | **1-M** |
| Each HOTEL employs many EMPLOYEES.  Each EMPLOYEE is employed by one and only one HOTEL. | Every hotel has many employees, but all the employees work for only one hotel. | **1-M** |
| Each HOTEL has many CUSTOMERS or none.  Each CUSTOMER visits one and only one HOTEL | Every hotel has many customers, but each customer visits one and only one hotel. | **1-M** |
| Each ROOM is attributed to one and only one ROOMTYPES.  Each ROOMTYPE attributes at least one ROOMS. | A room can only have one room type, each room type can be displayed in many rooms. | **1-M** |

**RELATIONAL MODEL**

**A picture containing table

Description automatically generated**

**SQL QUERIES**

|  |  |
| --- | --- |
| QUERY | PURPOSE & RESULTS |
| SELECT HOTELID, ANNUALSALES, CITY,  (SELECT AVG(ANNUALSALES) FROM HOTELS  GROUP BY CITY  HAVING CITY = 'NORTHRIDGE') AS MYCITYAVG  FROM HOTELS AS MAINHOTEL  WHERE ANNUALSALES >  (SELECT AVG(ANNUALSALES) FROM HOTELS  GROUP BY CITY  HAVING CITY = 'NORTHRIDGE'); | Lists the Hotels whose average sales are higher than the AVG sales of its own city.  **CORRELATED SUBQUERY**  **ALEX SAFARIAN** |

|  |  |
| --- | --- |
| SELECT City, AVG(ANNUALSALES) As CITYANNUALSALES,  (SELECT AVG(ANNUALSALES) FROM HOTELS) As HOTELAVERAGES  FROM HOTELS  GROUP BY CITY  HAVING AVG(ANNUALSALES) <  (SELECT AVG(ANNUALSALES) FROM HOTELS); | Show a count of rooms that are not reserved for each hotel differentiated by the bed count and the type of room it is.  **ALEX SAFARIAN**  Table  Description automatically generated |

|  |  |
| --- | --- |
| SELECT City, AVG(ANNUALSALES) As CITYANNUALSALES,  (SELECT AVG(ANNUALSALES) FROM HOTELS) As HOTELAVERAGES  FROM HOTELS  GROUP BY CITY  HAVING AVG(ANNUALSALES) <  (SELECT AVG(ANNUALSALES) FROM HOTELS); | Display Hotels with an average sale less than the average of all hotels on the table.  **NON-CORRELATED SUBQUERY**  **ALEX SAFARIAN**  Text  Description automatically generated |

|  |  |
| --- | --- |
| SELECT a.INVOICEID AS Invoice\_ID, b.BILL AS Total\_Amount, a.INVOICEDATE AS PREPARED\_ON  FROM INVOICE a, INVOICE b  WHERE a.INVOICEDATE = b.INVOICEDATE  ORDER BY a.INVOICEDATE DESC; | Display the Invoice ID and total amount of the bill of the customer. Also order by the most recent date the invoice was prepared on.  **SELF JOIN QUERY JEFF CALICA**  Table  Description automatically generated |

|  |  |
| --- | --- |
| SELECT C.CUSTOMERID,MISCCHARGES  FROM CUSTOMER C  LEFT JOIN INVOICE I ON C.CUSTOMERID = I.CUSTOMERID  WHERE I.MISCCHARGES > 0  GROUP BY C.CUSTOMERID,MISCCHARGES; |  |

|  |  |
| --- | --- |
| SELECT BILL, HOTELNAME, CFIRSTNAME,CLASTNAME  FROM ((HOTELS AS H  INNER JOIN CUSTOMER AS C  ON H.HOTELID=C.HOTELID)  INNER JOIN INVOICE AS I  ON I.CUSTOMERID=C.CUSTOMERID)  WHERE BILL > (SELECT AVG(BILL) FROM INVOICE)  GROUP BY CFIRSTNAME,CLASTNAME, HOTELNAME, BILL  ORDER BY CFIRSTNAME,CLASTNAME, HOTELNAME, BILL DESC; | Any customers that pay more than the average bill price will be selected to join the VIP list. The VIP list will show the customer’s name and the hotel they are staying in, as well as their bill from high to low. Descending order to determine the priority of the customers. Highest Bill = the most valuable customer.  **MULTITABLE INNER JOIN** with **GROUP BY** and **SUBQUERY**  **Temuujin Dorjbat** |