System Specification Report

For

Irish Hostel Times

Submitted by:

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Project Specification Document

Organization: Irish Hostel Times

Background Information:

Irish Hostel Times is an organization that provides affordable and luxurious hostels for the traveller who are coming to explore the Irish World. Irish Hostel Times provides hostels in the following cities: Dublin, Galway, Cork and Limerick. This organization contains total 18 properties that are spread over the above locations. These properties come with many dormitories' options from twin bed dorms to 12 bed dorms for female separately and the other are for both males and females. Apart from that, Irish Times Hostels provide free breakfast and free WIFI in all the properties.

Going through the internal structure of the organization, Microsoft Dynamics's Customer Service Hub is used where all the clients complains as well as their feedback are dealt. The main source of revenue is from Customer Booking and that's why all the customer related information is very well taken care of.

Market Place:

Irish Hostel Times has set its root in 2011. Initially it provides hostels only in Dublin region but with time they gained their popularity and expanded in other cities as well. Currently Irish Hostel Times is in 4 cities of Ireland and they're looking forward to expand their business in other cities as well. Looking over the data of past 1 year Irish Hostel Times had approximately 1000 customers and it is expected to grow its business over the next year.

Scope of Processes:

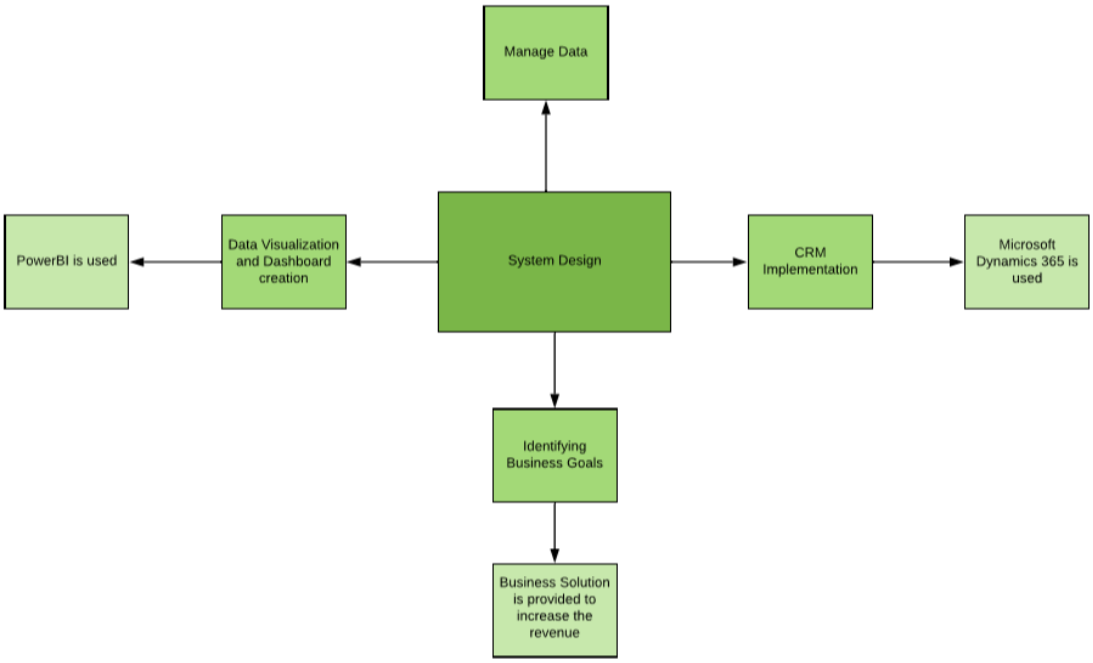
1. **Customer Feedback Survey:**

Once the customer checkout from the hostel then he can provide a feedback survey about property by filling a survey form which can be useful for the property as well as the upcoming customers. Any negative feedback raised as a ticket is stored in the Microsoft Dynamics CRM and is reported as a Case. This case will be assigned to a customer service representative who will work on resolving the same.

2. **Renewal Scheme:**

A provision has been made for the customers of Irish Hostel Times to renew their booking post their expiration of the stay. This option is especially availed by travellers, tourists and international student who are not able to find a permanent accommodation. This data has been captured and is considered as a datapoint for business development.

System Design:



System Design is a process where it is discussed how the solution is implemented on an existing or new system in a manageable way. In system design phase all the requirements are well defined and documented for the future references. Here all the planning of the system takes place. Moreover, this whole system is divided into small parts and each part is implemented with the planned solution and once it is done then all these small modules are integrated together to form a system.

For the following system is further categorized into smaller modules:

- *Manage Data*: Here cleaning of the data takes place before it proceed any further. All the relationships among the data is checked thoroughly. For now the data is maintained in an excel sheet.

- *CRM Implementation* : **Microsoft Dynamics 365**'s Customer Service Hub is used for this section. Here all the internal flow of an organization happens. All the tickets which are raised by the clients or the feedback received resolved here. Here client can sync up with the customer care service via email or get in touch through a phone call. All the cases created from client's perspective forms as queue and are resolved as quickly as it can. Ticket generated is taken care by the associate manager and he'll decide where the ticket lands for further clarification. If it is something he can look into then he will and after that ticket will be

closed or otherwise it will sent out to the technical or managerial team for further review and once it is solved then the ticket is closed.

- *Data Visualization and Dashboard creation*: **PowerBI** is used for visualizing the data and creating optimal dashboards as per the requirements. The dashboards created shall be easily understandable and provides relevant information about the system and the data flow.

- *Identifying business goals*: After visualization one can have a complete idea about the system and can identify or can review the gaps if present and can provide a solution to it.

Types of System Designs:

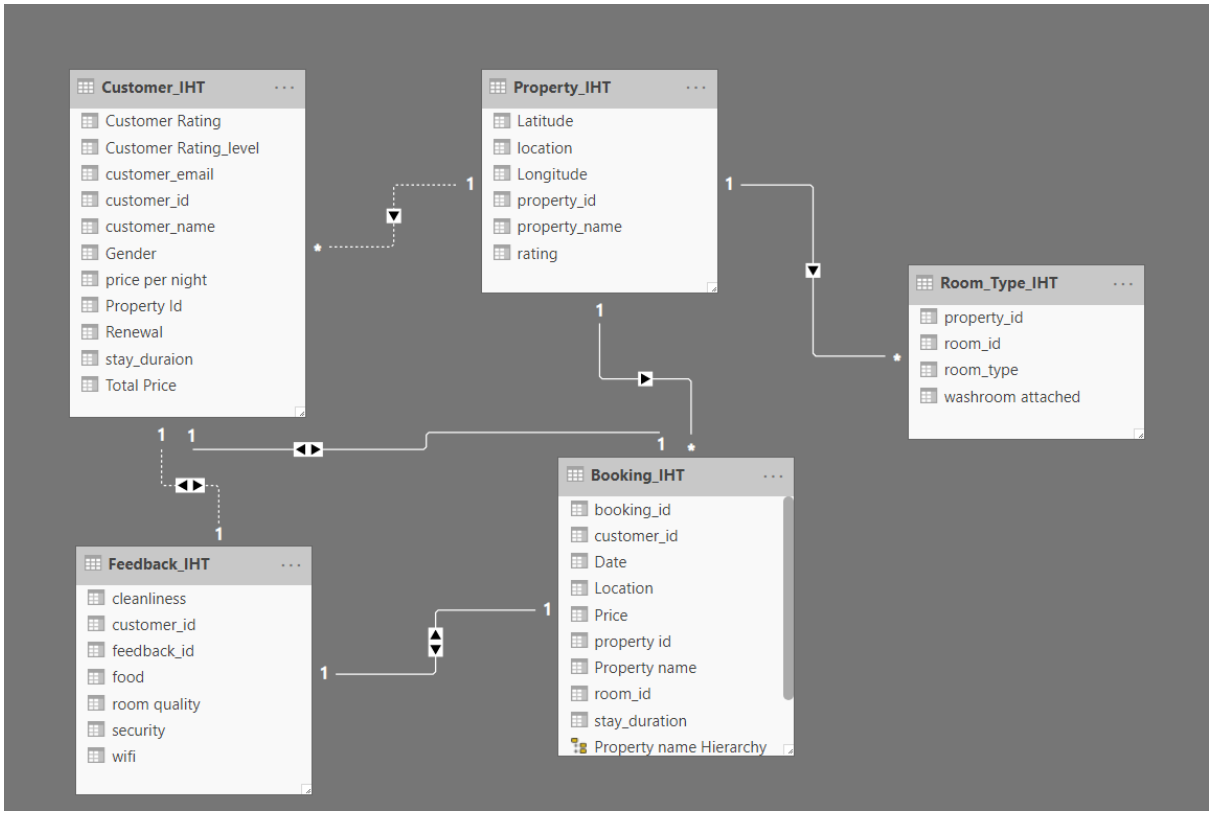
- *Architectural Design*: The design that deals with the overall structure of the system.It basically covers the models, views and behaviour of the system.
- *Logical Design*: It will show how data flows through an entire system from initial input state to final output state. ER Diagram is the best example
- *Physical Design*: It deals with how users sends request to the system and how system response it back. Not only from users side it also shows how the data is kept inside the system and how it is modelled through and out the system.[1]

Database Design:

Database design is a collective process that will design, develop, implement and maintain the enterprise data management systems. Once the database is implemented properly, then it is easy to maintain organizational data and reduce cost. For implementing business analysis different datasets are integrated with the help of relatable columns as below:

- *Property* : This database table will provide a brief information about the hostels that are spread across the four locations with their respective ratings. This table has 4 columns namely : property_id, property_name,location and rating
- *Room_type*: This database table provide details about the type of rooms these hostels are having. This table contains 4 columns namely: room_id, property_id, washroom_attached and room_type.
- *Customer*: This table contains the details of customers. There are 9 columns in this table namely : customer_id,customer_name,property_id,gender, customer_email, price_per_night, renewal, stay_duration, total_price.
- *Booking*: This table provides information about all the bookings that has been made so far. It contain following columns : Booking_id, customer_id, property_id, property_name, location, room_id, date, price, stay_duration
- *Feedback*: This table will show all the feedbacks that has been provided by the customers. It contains following columns: customer_id, feedback_id,cleanliness, room_quality, wifi, security.

Entity Relationship Model: The following model will show how all the databases are correlated with each other and what is the link that is joining these databases all together.



Data Dictionary: It will define the structure of the database. How one database is related to another and will also show the primary and foreign keys if present. Apart from that it will show the data type of the attributes present in the database. Below are the following data dictionaries used in this project:

Property	Data_Type	Description
Property_id	int	Primary Key
Property_name	varchar	Name of the property
Location	varchar	Location of the property
Ratings	int	Total ratings given to the property

Room_Type	Data_Type	Description
Room_id	int	Primary Key
Property_id	int	Foreign Key
Attached_washroom	char	Washrooms are attached with the rooms or not
Room_type	varchar	Type of room

Customer	Data_Type	Description
Customer_id	int	Primary Key
Property_id	int	Foreign Key
Customer_name	varchar	Name of the customer

Gender	char	Gender of the customer
Customer_email	varchar	Email id of the customer
Price_per_night	int	Price of the room per night basis
Renewal	char	Customer wants to renew stay or not
Stay_duration	int	Total number of days customer stays
Total_price	int	Total price of the room

Booking	**Data_Type**	**Description**
Booking_id	int	Primary Key
Customer_id	int	Foreign Key
Property_id	int	Foreign Key
Location	varchar	Location of the property
Room_id	int	Foreign Key
Date	date	Date of the stay
Price	int	Price of the room per night basis
Stay_duration	int	Total number of days customer stays

Feedback	**Data_type**	**Description**
Feedback_id	int	Primary Key
Customer_id	int	Foreign Key
Cleanliness	char	Survey done on cleanliness
Food	char	Survey done on food quality
Room_quality	char	Survey done on room quality
Wifi	char	Survey done on wifi speed
Security	char	Survey done on security

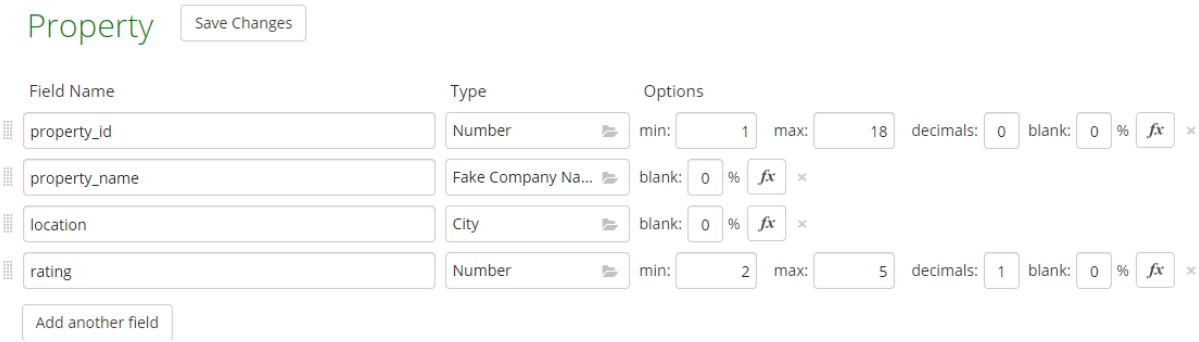
Creation of Test Data:

For Irish Hostel Times, we've mocked test data for following tables and later this data was used for PowerBI and Microsoft Dynamics 365(Customer Service Hub)

Source from where data has been created: [2]

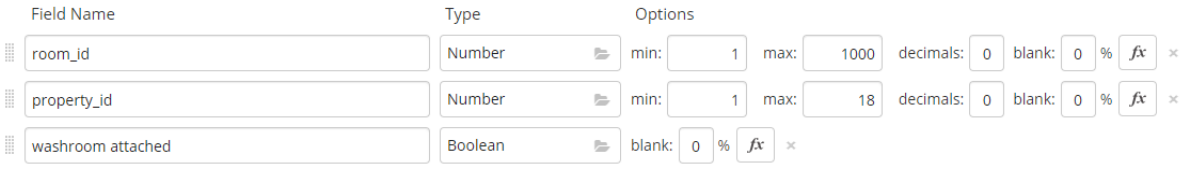
Property Table:

- This table depicts the number of properties spread across Ireland.
- Here, property_id is the primary key



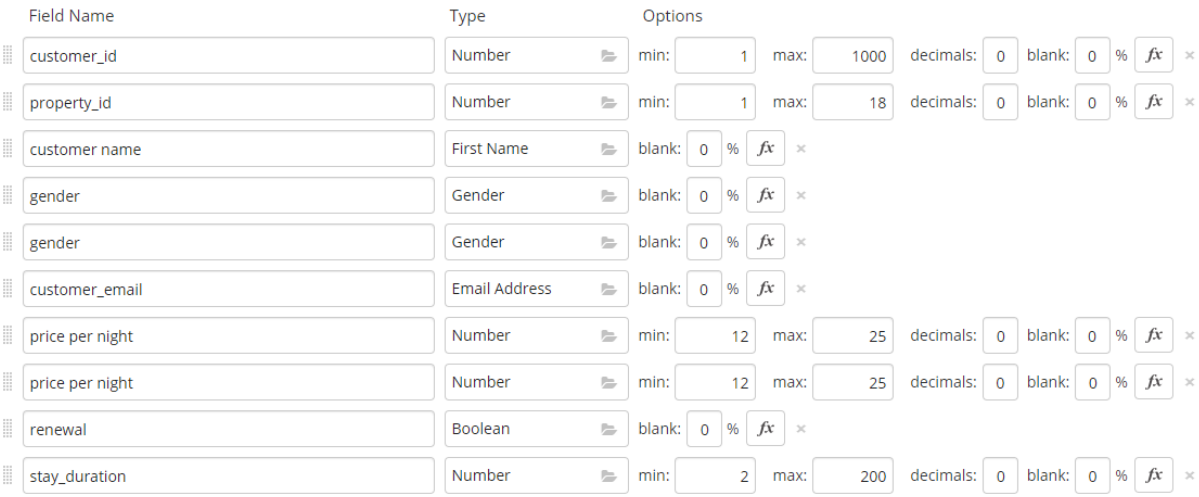
Room_Type Table:

- This table depicts the types of room all the properties hold like twin room, 4 bed dorm
- Also this table categorises room as per the gender type too: 4-bed-mixed-dorm and te4-bed-mixed-dorm.
- Here room_id is the primary key and property_id used in this table as a foreign key.
- Here the concept of attached washroom is also mentioned with following values : True or False
- Room_type field is entered manually



Customer Table:

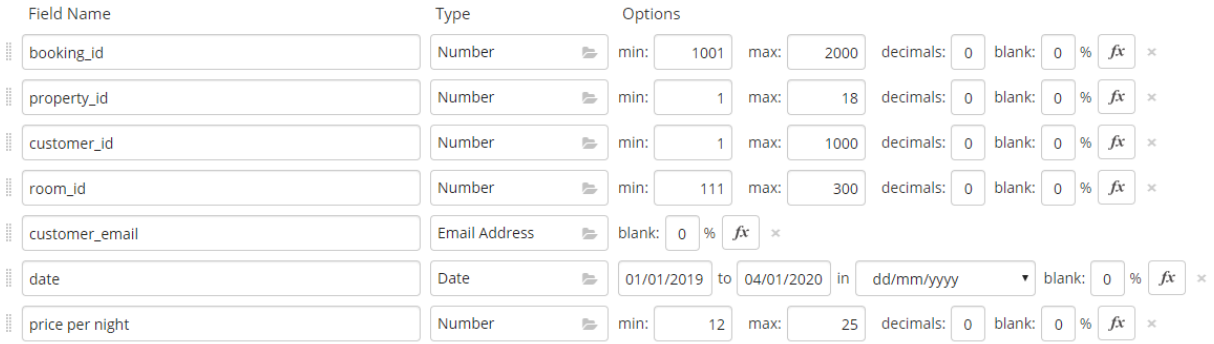
- This table depicts customer details, where customer_id is the primary key and property_id is the foreign key.
- This table contains customer's additional details such as name, email and gender.
- Here if the customer wants to extend his stay or not is also defined
- Number of days and total price fields were also defined.



Booking Table:

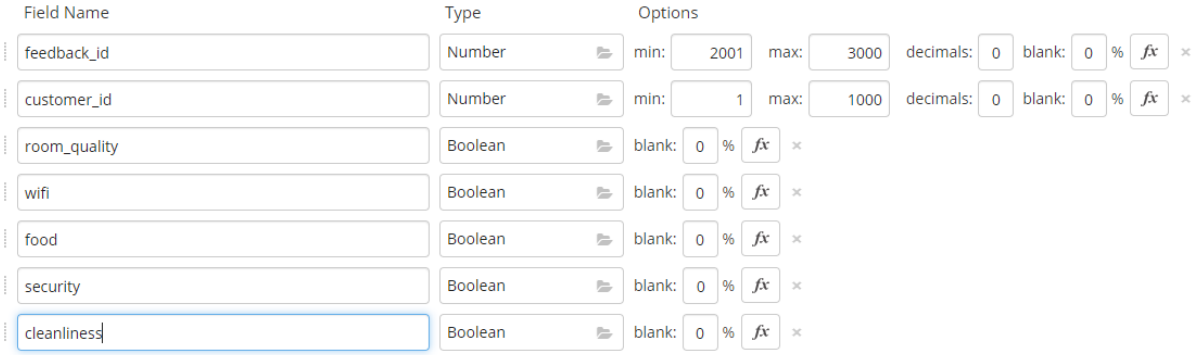
- This table shows the booking details of the customers.
- Booking_id is used as primary key and customer_id, room_id and property_id are used as foreign key.

- Other attributes such as location, property_name,date,price and stay duration



Feedback Table:

- This table will depict about the feedback provided by the customer once they have checked out from the hostels.
- It covers a survey about the place that will help Irish Hostel Times to look up at and work if something goes wrong
- It contains following fields such as: feedback_id(primary key) customer_id as foreign key
- For the survey it will includes certain attributes such as: cleanliness, food,wifi,security and room quality.



Customer Integration:

Customers are the main entity in this system. Whether it is about providing a feedback, enquiring about hostels or booking hostel. There Customer can contact the customer service through email or phone call and get their query clear. If there is some complain that the customer has to file then the very first point of contact will be the customer service from where ticket is created and passed further of the review. This ticket creation and review is done in Microsoft Dynamics CRM.

References:

1. The Economic Times. 2020. *What Is Systems Design? Definition Of Systems Design, Systems Design Meaning - The Economic Times*. [online] Available at:

<https://economictimes.indiatimes.com/definition/systems-design> [Accessed 19 April 2020].

2. Mockaroo.com. 2020. *Mockaroo - Random Data Generator And API Mocking Tool | JSON / CSV / SQL / Excel*. [online] Available at: <https://www.mockaroo.com/schemas/new> [Accessed 7 April 2020].