**CHAPTER 3**

**RESEARCH METHODS**

This chapter contains the methods in the development of St. Michael’s College SMC Hotel Reservation. The proponents followed the System Development Life Cycle (SDLC) in creating the project.

**Planning**

The proponents defined the objectives, scope and limitation of the study and come up with a SMC Hotel Reservation System project from the data gathered in St. Michael’s College. The proponents also projected the time frame and the project task to accomplish the planned features and functions.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **ACTIVITIES** | **JUNE** | | | | **JULY** | | | | **AUG** | | | | **SEPT** | | | | **OCT** | | | |
| **PLANNING** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| Data Gathering |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| Identify Problems |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| **ANALYSIS** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| Acquire System requirements |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| Making Context Diagram |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| Making Data Flow Diagram |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| Making Entity Relationship Diagram |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| Review proposal |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| Finalize scope of work |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |

**Table 3.1. Gantt Chart**

**Analysis**

In this phase, the proponents develop an organized representation of the process that occurs in SMC Hotel Reservation. The proponents make a Context Diagram, Data Flow Diagram and Entity Relationship Diagram to visualize the flow of the system.

Room Info

Personnel login info

Invalid Room Info

0

SMC HOTEL

RESERVATION

Reservation Info

Invalid Personnel login info

Invalid reservation info

Room Info

Personnel

Guest

Guest Info

Invalid Guest Info

Cancel Reservation info

Amenities Info

Invalid Cancel Reservation info

Reservation

Reports

**Fig. 3.1 Context Diagram**

AGuest will give **Reservation info** to the system and if the reservation is invalid then the system returns back the errors and that’s what we called **Invalid Reservation Info**.

**Guest Info** is required after the Reservation processed so the Guest should register the System if he didn’t able to register yet but if she is then he required to login to verify his reservation.

**Invalid Guest Info** returns back to the Guest if the System not satisfied the his information.

Room

Detail

Reservation info

1

Room

guest

Invalid

Reservation info

**1**

Check room availabilty

2

Reservation

Aminities Detail

Reservation

info

**2**

Process reservation

**8**

Add Room Info

3

Guest

Guest Info

Guest info

Room info

**3**

Process guest info

Invalid Guest Info

**7**

Add Aminities info

2

Reservation

Processed

guest info

Update

Reservation

detail

Room Info

Cancell

reservation

info

**4**

Process cancell reservation

**5**

Validate personnel login info

Reservation

Detail

Guest

detail

Cancell

reservation info

Reservation

detail

Invalid Personnel login info

Personnel login info

**6**

Generate reservation reports

Reservation reports

Personnel

**Fig. 3.2 Data Flow Diagram**

**Guest** check room availability if room available found

**Guest** will give a **reservation info** to the system and if reservation info is

not valid then the error message will pop up as **Invalid reservation info**, If

reservation is valid then the **Guest** required to give hisinformation as

**Guest Information** in order to continue his reservation, if the **Guest**

**information** is invalid error message will pop up as **Invalid Guest**

**Information** to the Guest and if valid then system required the Guest to

call the hotel personel in order to virify his reservation .

**Guest** also has the access to cancell his reservation.

Before anything else personnel require to login after loggin in.

Personel will see the **reservation reports**  by the Guest who

are requested for the reservation and personel can add a **room info** and

**amenities info**.

Reservation

Reservation Line

Guest

Guest\_id (PK)

Guest\_email

Guest\_name

Guest\_address

Guest\_contact\_number

Guest\_ referral\_name

Room

Room\_id (PK)

Room\_number (FK)

Room\_type

Room\_availability

Amenities

Amenities\_id (PK)

Room\_id (FK)

Amenities\_name (FK)

Amenities\_description

Reservation\_id (PK)

Guest\_id (FK)

Reservation\_line\_id (PK)

Reservation\_id (FK)

Room\_id (FK)

Date\_arrival

Date\_time\_departure

Company\_group ( optional )

Rate ( optional )

**Fig. 3.3 Entity-Relationship Diagram**

Explaination of this figure are the following:

One **Guest** has one or many **Reservation** , one or many **Reservation** has One **Guest** has

one **Reservation** has one or many **Reservation** **Line** , one or many **Reservation Line** has one

**Reservation** one **Reservation Line** has one or many **Room ,** one **Room** has one or many **Reservation**

**Line** one **room** has one or many amenities one or many **amenities** has one room.

**Data Dictionary**

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Type** | **Length** | **Description** |
| Guest\_id | Int | 11 | Unique Id of the Guest |
| Guest\_email | varChar | 30 | Email of the Guest |
| Guest\_name | varChar | 30 | Name of the Guest |
| Guest\_address | varChar | 50 | Address of the Guest |
| Guest\_contact\_number | Int | 11 | Contact number of the Guest |
| Guest\_ referral\_name | varChar | 30 | Name of the referral |

**Table 3.2 Guest**

This table shows the Guest information that the Guest Required to fill out in the system and connected to the reservation table.

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Type** | **Length** | **Description** |
| Reservation\_id (PK) | int | 11 | Unique id of Reservation |
| Guest\_id (FK) | int | 11 | Unique id of Guest |

**Table 3.3 Reservation**

This table is the storage of every reservation transaction made by the guest.

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Type** | **Length** | **Description** |
| Reservation\_line\_id | Int | 11 | Unique Id of the reservation line |
| Reservation\_id | int | 11 | Unique Id of the Reservation |
| Room\_id | int | 11 | Unique Id of the Room |
| Date\_arrival | date |  | Date arrival of the Guest |
| Date\_time\_departure | dateTime |  | Date and time departure of the Guest |
| Company\_group | varChar | 20 | Company group of the Guest |
| Rate | varChar | 20 | Rate of the room |

**Table 3.4 Reservation Line**

This table is the storage of every reservation info based on the resertation detail.

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Type** | **Length** | **Description** |
| Room\_id | int | 11 | Unique id of the room |
| Room\_number | int | 11 | Room number of every room |
| Room\_type | varChar | 10 | Type of the room |
| Room\_availability | Bool | 1 | Availability of the room |

**Table 3.5 Room**

This table is the storage of the room info inputed by the personnel and the guest can used to view the room availabilty and other information.

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Type** | **Length** | **Description** |
| Amenities\_id | int | 11 | Unique id of the amenities |
| Room\_id | int | 11 | Unique id of the rooms |
| Amenities\_name | varChar | 30 | Name of the amenities |
| Amenities\_description | varChar | 150 | Description of the amenities |

**Table 3.6 Amenities**

This table is the storage of the item info for the rooms, Guest can only view amenities according to the room items.

**Development**

The purpose of this project is to develop a smc hotel reservation system that can allow the guest to book a room online.

*Hardware Requirements:*

-Intel Celeron

- 1GB RAM

- 40GB HDD

- monitor

- Keyboard

- Mouse

*Software Requirements:*

-Web browser (IE, Mozilla Firefox, Google Chrome, etc.)

- Internet connection

**Fig. 3. 5 Conceptual Framework**

**Testing Procedure**

The following testing procedure are the following:

Guest

* check room availability
* give reservation info
* give guest Info
* get a call to smc hotel personnel to verify the reservation

personnel

* add room
* add amenities
* retrieve new reservation
* verify reservation