CPSC 471 - Hoteller
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Overview:

Hoteller* is an free Android application used to find a hotel in an efficient manner. It provides all of the available options and amenities in a fast and easy to use interface that makes booking a hotel as simple as can possibly be.

Hoteller allows the user to sort by hotel name, price and rating and upon finding a suitable hotel and room will temporarily save the room and give the user a number to call the hotel directly. When the user clicks the hotel button, the room will be set to unavailable for any other user. The availability of the room will be reset in set periods (based on discussion with the hotel chains themselves)

System Requirements:

→ In order to run Hoteller, users must be running an Android device only as old as Android Version 4.4 (Kitkat) to Android Version 8.0 (Oreo)
→ Internet Access

Entity-Relationship Design:
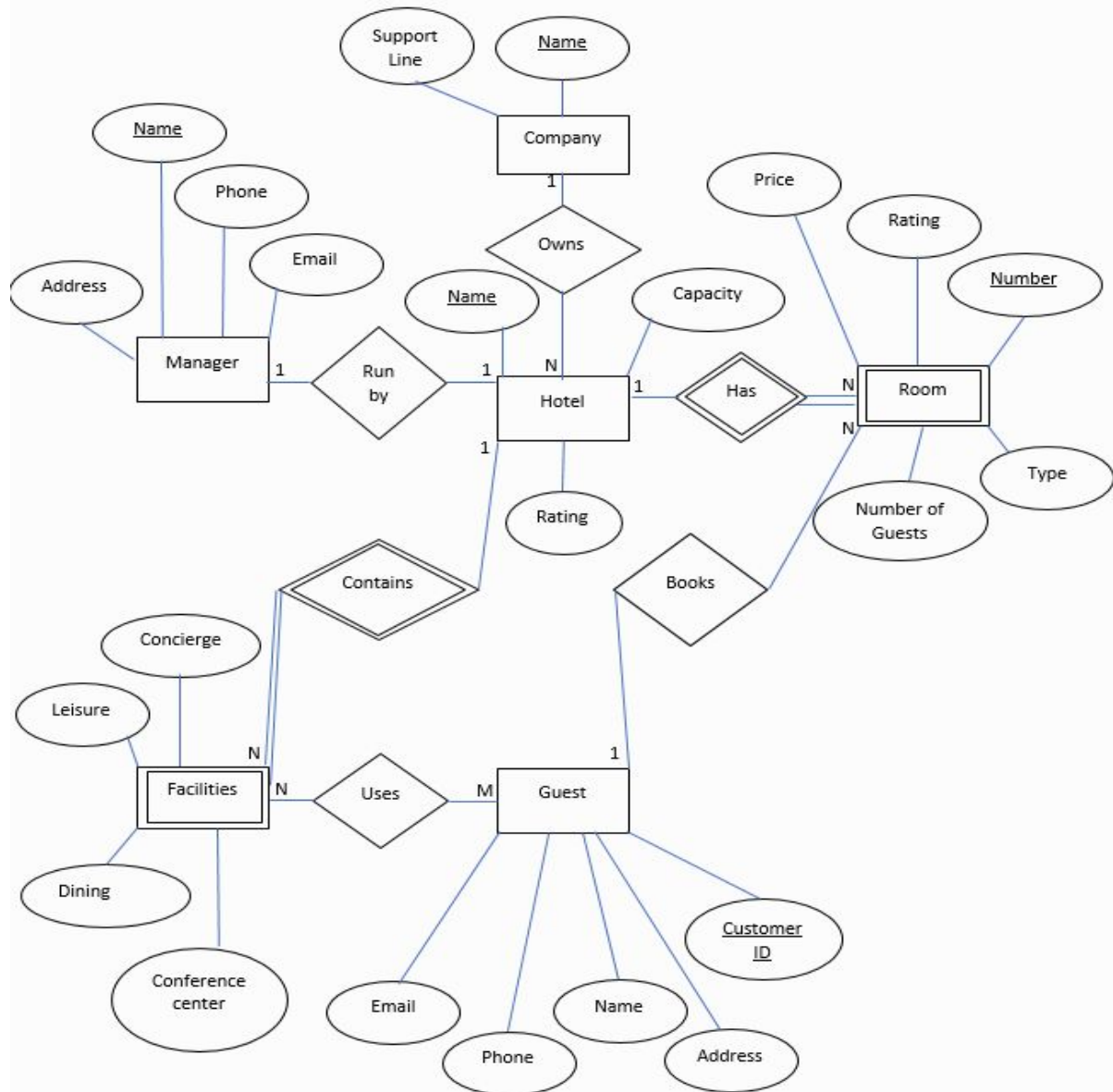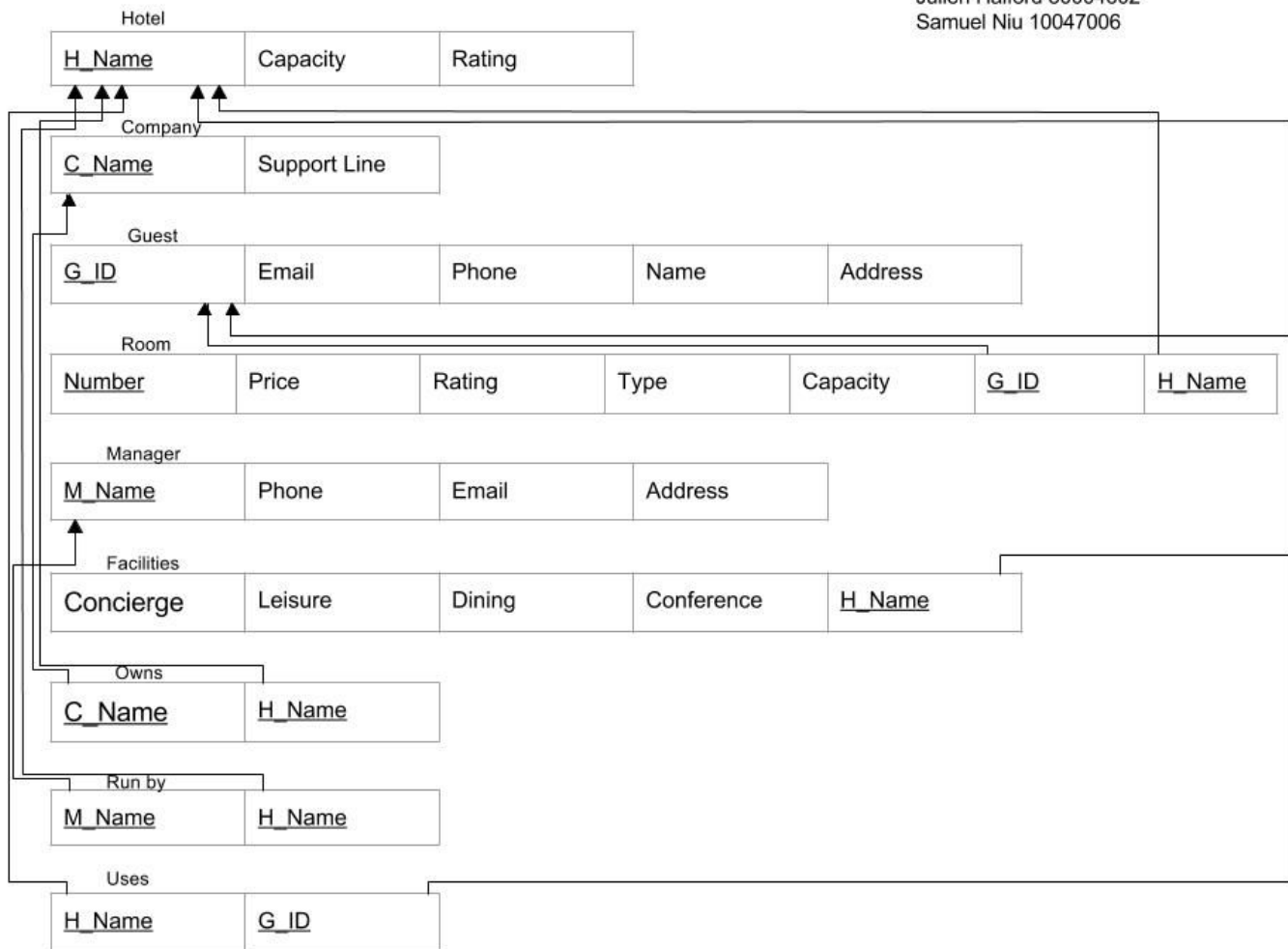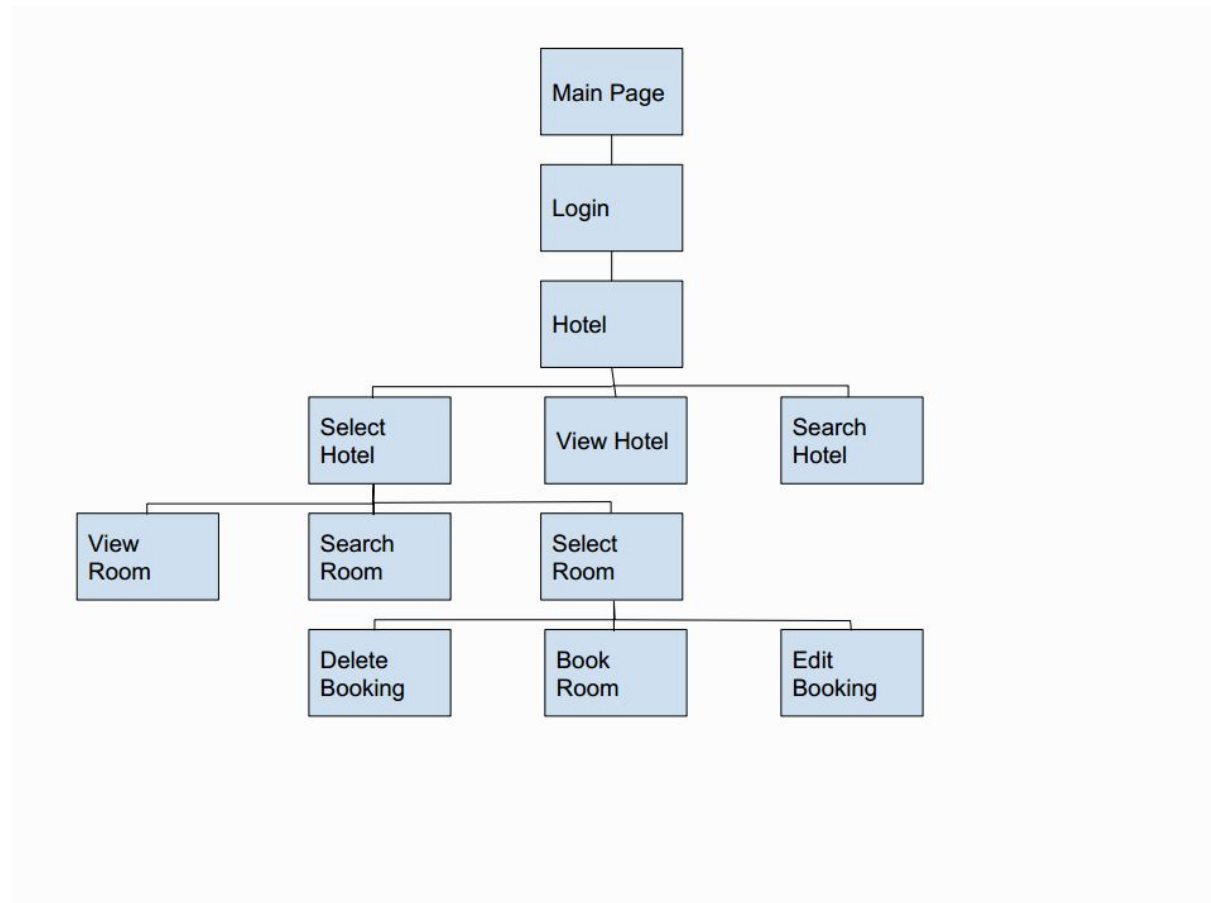

Assumptions:
        Each company has only a single name
        Room numbers are not duplicated in different wings or floors
        Each hotel only has a single manager
        Guests are assigned a unique ID number upon booking a room

Logical Database Design:

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Hotel

H_Name	Capacity	Rating

Company

C_Name	Support Line

Guest

G_ID	Email	Phone	Name	Address

Room

Number	Price	Rating	Type	Capacity	G_ID	H_Name

Manager

M_Name	Phone	Email	Address

Facilities

Concierge	Leisure	Dining	Conference	H_Name

Owns

C_Name	H_Name

Run by

M_Name	H_Name

Uses

H_Name	G_ID

General Hierarchical Structure (HIPO):

```
                        ┌──────────┐
                        │ Main Page│
                        └────┬─────┘
                             │
                        ┌────┴─────┐
                        │  Login   │
                        └────┬─────┘
                             │
                        ┌────┴─────┐
                        │  Hotel   │
                        └────┬─────┘
        ┌────────────────────┼────────────────────┐
   ┌────┴─────┐         ┌─────┴─────┐         ┌─────┴────┐
   │ Select   │         │View Hotel │         │ Search   │
   │ Hotel    │         │           │         │ Hotel    │
   └────┬─────┘         └───────────┘         └──────────┘
 ┌──────┼──────────────────┐
┌┴─────┐ ┌─────┴────┐ ┌─────┴────┐
│ View │ │ Search   │ │ Select   │
│ Room │ │ Room     │ │ Room     │
└──────┘ └──────────┘ └────┬─────┘
              ┌────────────┼────────────┐
         ┌────┴─────┐ ┌────┴────┐ ┌─────┴────┐
         │ Delete   │ │ Book    │ │ Edit     │
         │ Booking  │ │ Room    │ │ Booking  │
         └──────────┘ └─────────┘ └──────────┘
```

HIPO Queries:

Function: Search/View Hotel
Inputs: @H_Name, @Capacity, @Rating
Outputs: H_Name, Capacity, Rating
Pseudocode:
Connect to the database
Query = SELECT h.H_Name, h.Capacity, h.Rating
        FROM Hotel as h
        WHERE @H_Nname = h.H_Name AND @Capacity = h.Capacity AND
@Rating = h.Rating
Parse Query
Execute Query
Close connection to the Database

Function: Search/View Room
Inputs: @Number, @Price, @Rating, @Type, @Capacity
Outputs: Number, Price, Rating, Type, Capacity
Pseudocode:
Connect to the database
Query = SELECT r.Number, r.Price, r.Rating, r.Type, r.Capacity
        FROM Room as r
WHERE @Number = r.Number AND @Price = r.Price AND @Rating = r.Rating AND
@Type = r.Type AND @Capacity = r.Capacity
Parse Query
Execute Query
Close connection to the Database

Function: Book Room
Inputs: @Number, @Price, @Rating, @Type, @Capacity, @G_ID, @Email, @Phone,
@Name, @Address
Outputs: None
Pseudocode:
Connect to the database
Query = INSERT INTO Room(@Number, @Price, @Rating, @Type, @Capacity, @G_ID,
@Email, @Phone, @Name, @Address);

Parse Query
Execute Query
Close connection to the Database

Function: Edit Booking
Inputs: @Number, @Price, @Rating, @Type, @Capacity, @G_ID, @Email, @Phone,
@Name, @Address
Outputs: None
Pseudocode:
Connect to the database
Query = UPDATE Room
   SET "attribute"
        WHERE (G_ID = @G_ID AND Email = @Email AND Phone = @Phone AND
Name = @Name AND Address = @Address);
Parse Query
Execute Query
Close connection to the Database

Function: Delete Booking
Inputs: @Number, @Price, @Rating, @Type, @Capacity, @G_ID, @Email, @Phone, @Name, @Address
Outputs: None
Pseudocode:
Connect to the database
Query = DELETE FROM Room
              WHERE (G_ID = @G_ID AND Email = @Email AND Phone = @Phone AND Name = @Name AND Address = @Address);
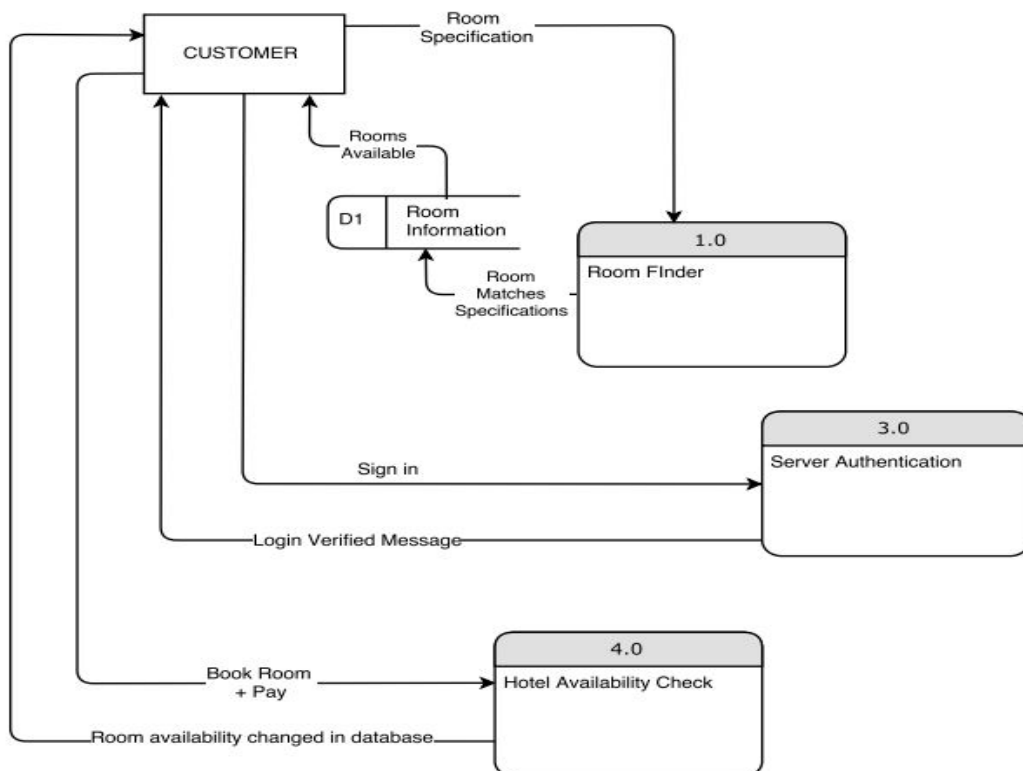Parse Query
Execute Query
Close connection to the Database

General Hierarchical Structure (DFD Context):
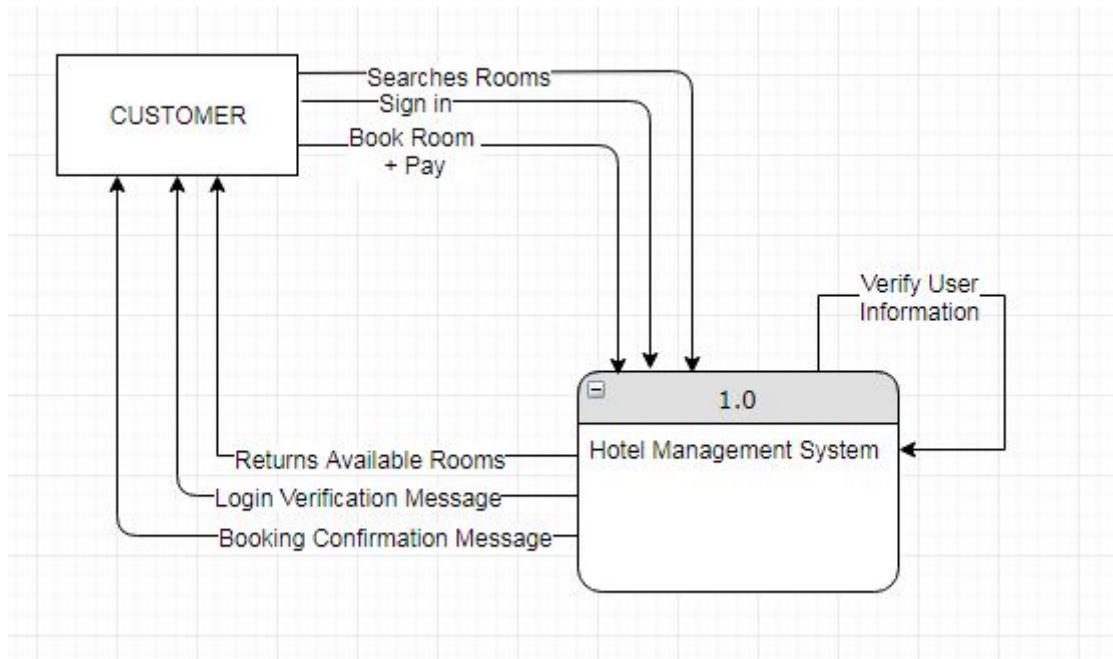
DFD Level 0:

Appendix

Hotels

H_Name	Capacity	Rating
Best Western Pl...	275	4
Days Inn	280	4
Delta	290	3
Econolodge	400	4
Holiday Inn	300	4
Hotel Alma	310	4
Hotel Elan	230	5
Ramada Limited	135	2
Sandman	325	3
Sheraton	175	4

Company

C_Name	Support_Line
ComfortStay	33333
CozyPlace	11111
FancyRooms	44444
HotelsRUs	55555
NiceInns	22222
TravelInternatio...	12345

Guests

G_ID	Email	Phone	Name	Address
1	j.doe@mail.com	22222	John Doe	1000 2nd Ave
2	a.marks@mail....	33333	Adam Marks	2723 55th Street
3	s.hughes@mail...	44444	Sam Hughes	543 Pleasant Rd.
4	s.mayne@mail....	55555	Sarah Mayne	22 Meadowlark ...
5	m.smith@mail....	66666	Matthew Smith	345 77th Ave

Facilities

Concierge	Leisure	Dining	Conference	H_Name	G_ID
Yes	NULL	NULL	Yes	Best Western Pl...	1
NULL	Yes	Yes	NULL	Days Inn	1
NULL	Yes	Yes	NULL	Delta	1
Yes	NULL	NULL	Yes	Econolodge	1
Yes	NULL	NULL	Yes	Holiday Inn	1
NULL	Yes	NULL	NULL	Hotel Alma	1
NULL	Yes	Yes	NULL	Hotel Elan	1
Yes	NULL	NULL	Yes	Ramada Limited	1
Yes	Yes	Yes	Yes	Sandman	1
NULL	Yes	NULL	NULL	Sheraton	1

Managers

M_Name	Phone	Email	Address
Charles Dowtry	0	c.dowtry@mail....	756 50 Ave
James Smith	12345	j.smith@mail.c...	1111 232nd Street
Jane Dowers	54324	j.dowers@mail....	12 Pleasant Way
Jason Mai	12121	j.mai@mail.com	5 Terrace Road
Jenine Gunder	54321	j.gunder@mail....	70 Beachfront B...
Jim Halpert	55223	j.halpert@mail....	1242 72nd Ave
Marcy James	15423	m.james@mail....	37 Meadow Str...
Muhammed Ali	23423	m.ali@mail.com	97 Eternal Acres
Phyllis Shcrute	42312	p.shcrute@mail...	982 12th Ave
Stanley Mason	24432	s.mason@mail....	90 Lovely Lane

Room

Rating	Capacity	Price	H_Name	Type	G_ID	Number
4	3	150	Best Western Pl...	Double	1	0
3	4	225	Days Inn	Suite	2	1
4	6	200	Delta	Deluxe Room	3	2
5	2	110	Econolodge	Duplex	4	3
3	4	250	Holiday Inn	Suite	5	4
5	8	400	Hotel Elan	Adjoining	1	5
2	4	600	Hotel Alma	Penthouse	2	6
3	2	100	Ramada Limited	Single	5	7
4	6	450	Sandman	Interconnected	4	8
4	2	130	Sheraton	Twin	2	9

Uses

G_ID	H_Name
1	Best Western Pl...
2	Days Inn
3	Delta
4	Holiday Inn
5	Hotel Elan
3	Hotel Alma
4	Ramada Limited
1	Sandman
2	Econolodge
3	Sheraton

Run By

C_Name	H_Name
HotelsRUs	Holiday Inn
TravelInternatio...	Best Western Pl...
TravelInternatio...	Hotel Alma
ComfortStay	Ramada Limited
ComfortStay	Econolodge
CozyPlace	Sandman
NiceInns	Sheraton
NiceInns	Days Inn
FancyRooms	Delta

Owns

M_Name	H_Name
Charles Dowtry	Holiday Inn
James Smith	Best Western Pl...
Jenine Gunder	Hotel Alma
Jason Mai	Ramada Limited
Muhammed Ali	Econolodge
Jane Dowers	Sandman
Marcy James	Sheraton
Jim Halpert	Days Inn
Phyllis Shcrute	Delta
Stanley Mason	Hotel Elan

User Manual

1.   Login Page – Basic login page. Enter a valid email address and the matching password to enter the application. If the user does not have an account, they can select Register to create one.
2.   Registration Page – Enter the required information to create an account. This information is stored for future sign-ins, and used when booking rooms.

3.	Home Page – This is a basic navigation page. You're brought to the home page upon signing in. It allows you to select whether you want to search for specific hotels, or browse all hotels in the database.
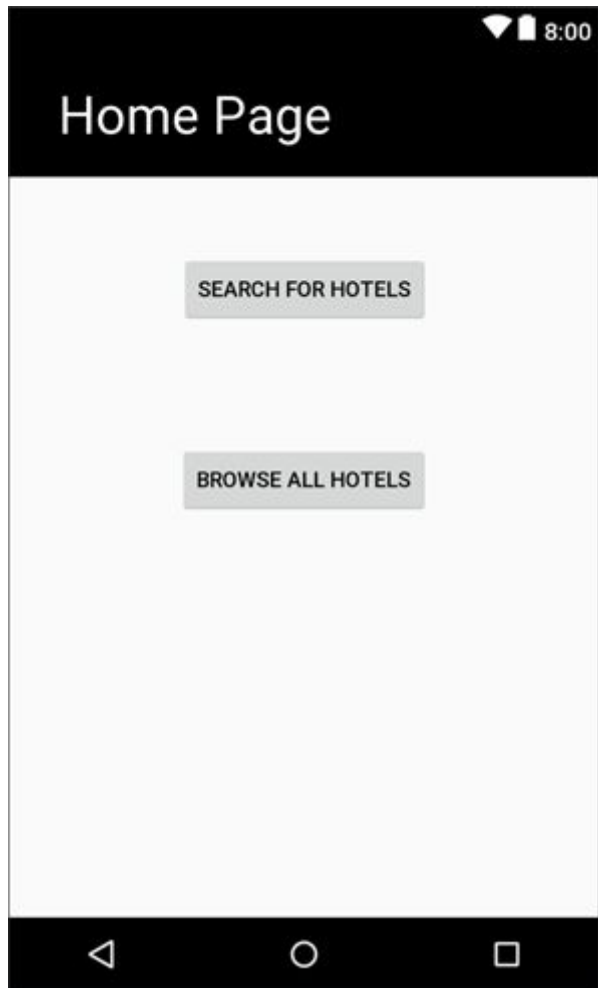
4.   Search Hotels – This page allows you to specify the hotel's name in your search, or you can filter by rating. You can navigate to the rooms in the hotel by selecting Search Rooms, or Browse Rooms.

5.   Browse Hotels – This page shows information for all hotels in the database. You can navigate to the rooms in the hotel by selecting Search Rooms, or Browse Rooms.
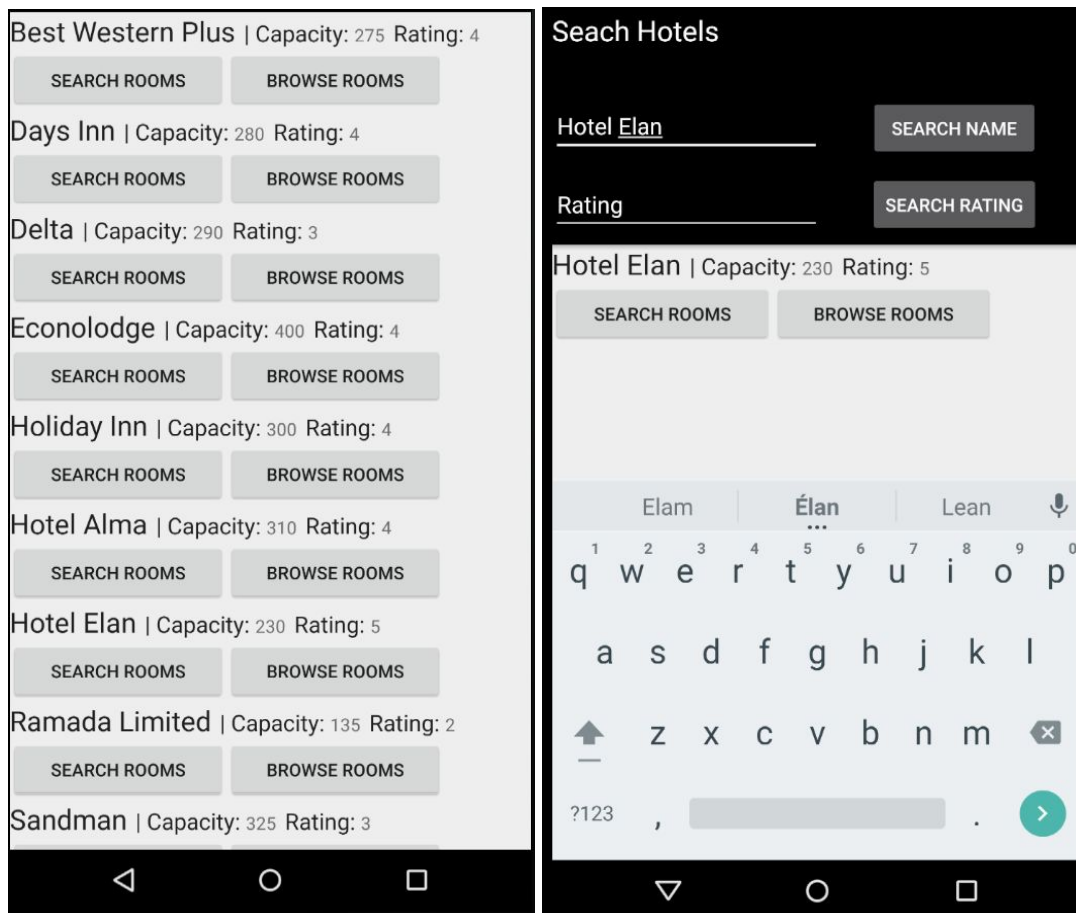
6.   Search Rooms – This page lets you filter the rooms in the hotel you previously selected by Price or Rating. From this page, you can also book the room if it is available.

7.   Browse Rooms – This page brings up all the possible room choices in the previously selected hotel, and displays their information. You can also book the room if it is available.