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# Home Away from Home

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## **ABSTRACT**

HomeAway is an online business application allowing renters to book their accommodations for rentals of homes or Apartments. This online application allows the owners to update their properties for advertisements and lease them to renters.

This website has user friendly functionalities providing services to the customers, owners, and administrators. Just a click away from your destination that quickly you get the best offers as we directly interact with the owners for the benefit of Customers. The service goal of HomeAway project being providing some luxury living, a sense of freedom, caring your loved ones and communities our website goes an extra mile to provide your need connecting to the world.

The main goal of this online secure application is to make the job easy allowing everyone to perform quick transactions like for the Owner to manage the property details, Customer to quickly get good deals followed by easy checkout and Administrator to manage properties and financial details. Many such functionalities have been embedded to explore, book and travel benefitting the user.

# Table of Content

1	Project Description.....	1
1.1	Competitive Information .....	1
1.2	Assumptions and Dependencies .....	2
1.3	Future Enhancements.....	2
2	Project Technical Description .....	2
2.1	Application Architecture .....	2
2.2	Application Information flows.....	3
2.3	Interactions with other Applications .....	6
2.4	Capabilities .....	7
2.5	Risk Assessment and Management.....	7
3	Project Requirements .....	8
3.1	Identification of Requirements .....	8
3.2	Operations, Administration, Maintenance and Provisioning (OAM&P).....	10
3.3	Security and Fraud Prevention.....	10
3.4	Release and Transition Plan.....	10
4	Project Design Description.....	11
5	Internal/external Interface Impacts and Specification .....	14
6	Design Units Impacts .....	14
6.1	Functional Area A/Design Unit A .....	14
6.1.1	Functional Overview .....	14
6.1.2	Impacts .....	15
7	Open Issues .....	15
8	References .....	16

## ***1 Project Description***

HomeAway is an online rental application that caters to the needs of people who are planning for short vacations. The properties on this website are listed by actual Owners and approved by the Admin thereby eliminating the need of middleman and decreasing the cost and burden on the customer. The user can sign up and have a look at all the properties listed on the website. Additional feature available for the customer is to filter his options location wise and pay online in advance for reservation confirmation.

The Home Page welcomes the user with a fresh look allowing them to register on the website. The Home Page includes a Google search option, vacation start and end dates, no. of guests and search option to list out the available property. All the 3 main entities Admin, Owner and Customer need to register on the website for hands approach and successful transactions.

Admin has almost exclusive rights with the “Price of the Property” being the exception as the Owner has the complete rights. Also, Admin can access all logs created by the customer and admin. A customer can register, search for the properties, make successful payments and add their reviews and comments. Owners can upload their property for customer purpose, advertise on the website with small description and add some good images for good view.

### ***1.1 Competitive Information***

Though the application is not new in the Online Rental Industry which is very well an established market which is growing at a tremendous pace. The aim here is to provide some very high-end user services than in the present market today. Features embedded are relatively better than our competitors making things User friendly navigation, listing the property after proper verification, real time booking overcoming some real-time issue like two people end up paying for the same property on the same date. Security also being the main concern in case user data, financial information and property information all data are tracked on regular basis as a good sign.

## ***1.2 Assumptions and Dependencies***

These are certain assumptions which were made for the safe functioning and proper implementation of the entire project.

- ✓ Our primary motto is to develop an advanced website which does not attain any execution issues during its functioning.
- ✓ HomeAway is the advanced version of the website which enables the clients to book the property and provide proper authentication without any intruders or the hackers to access the entire data.
- ✓ We primarily Designed our project with advanced level of the security, proper deployment plan and this model will be effective and efficient in performing the real-time values.

## ***1.3 Future Enhancements***

Our future enhancements will include a Secure payment gateway i.e. customer can pay through third party websites like PayPal etc. this would increase the confidentiality point of purpose from customer view in using this service. Other enhancements would include addition of features like taking smart reviews, ratings, implementing technology for providing coupon code depending on the financial results and loyalty points for existing customers. Minor modifications on the website are also planned like inclusion of Visual Tours like uploading videos, some great photographed images, listing the properties in an elegant manner, and a FAQs page.

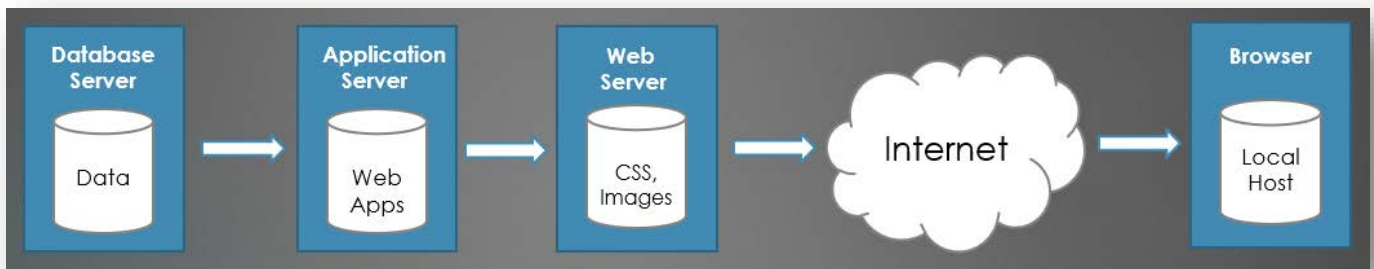
## ***2 Project Technical Description***

HomeAway web application of webpages, user interface is developed using ASP.Net 4.5, the bootstrap classes and HTML5. Supporting database is set up using the Microsoft SQL Server 2014 consisting required tables and stored procedures. Connection between the webpages and the database are successfully done using the C#.NET code.

### ***2.1 Application Architecture***

The three-tier architecture is the main concept used for the HomeAway application, allowing user friendly experience.

- **Database Server** representing the **Data tier** wherein all the required information is being stored. This layer will include Data entered by the Admin, Owner, and Customer, also consists of data created for all the transactions being performed.
- **Application Server** representing the main **Application tier** consists of all logical codes embedded within the application. Application tier being the very critical helps all the 3 entities communicate with each other's for successful navigation and transaction.
- **Web Server** representing the **Presentation Tier** consists of all services which help interact the front end and back end. ASP.Net, classes in the code and Database interact here for successful output.



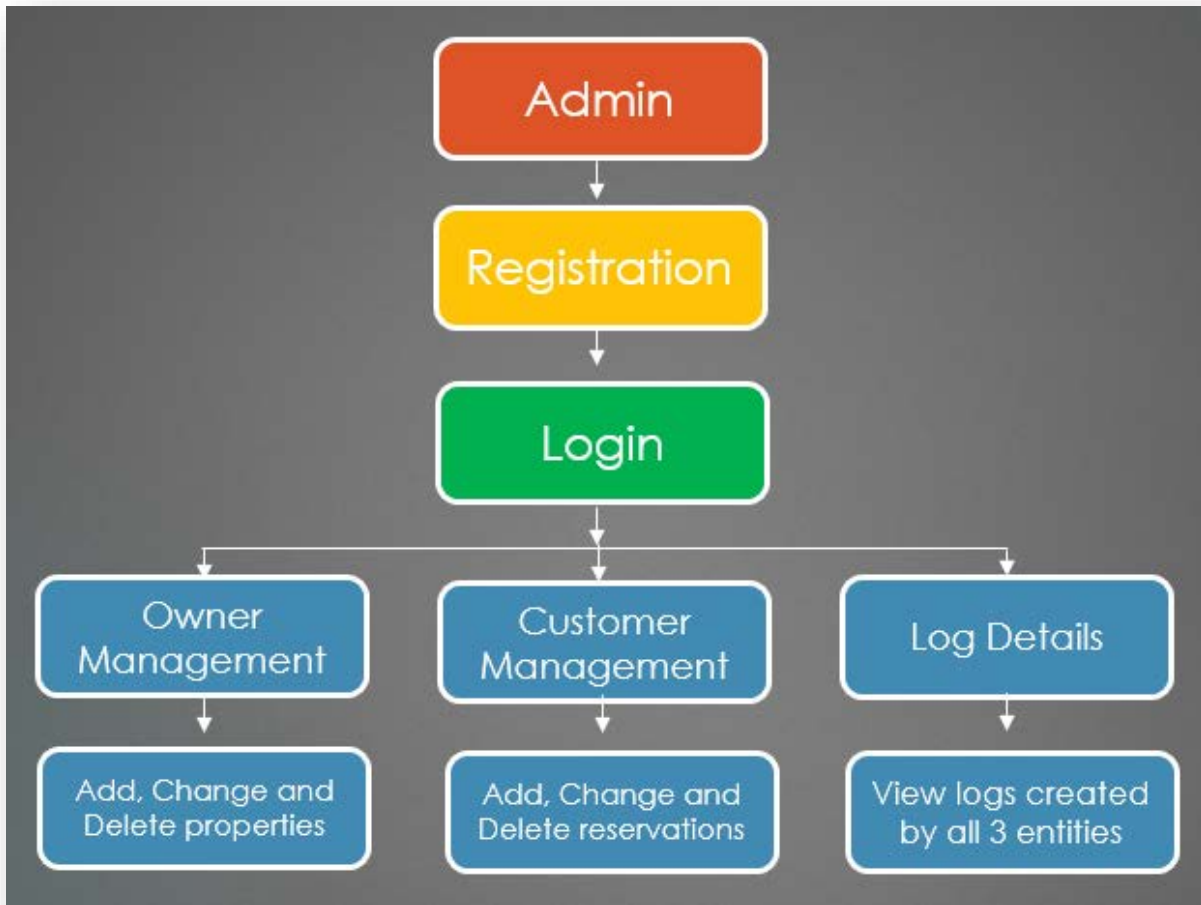
Figure#1

## 2.2 Application Information flows

The web application information flows mostly in between the main entities. Admin, Owner, and Customer being the users who contact frequently, each will have their own way of handling the data.

- Admin

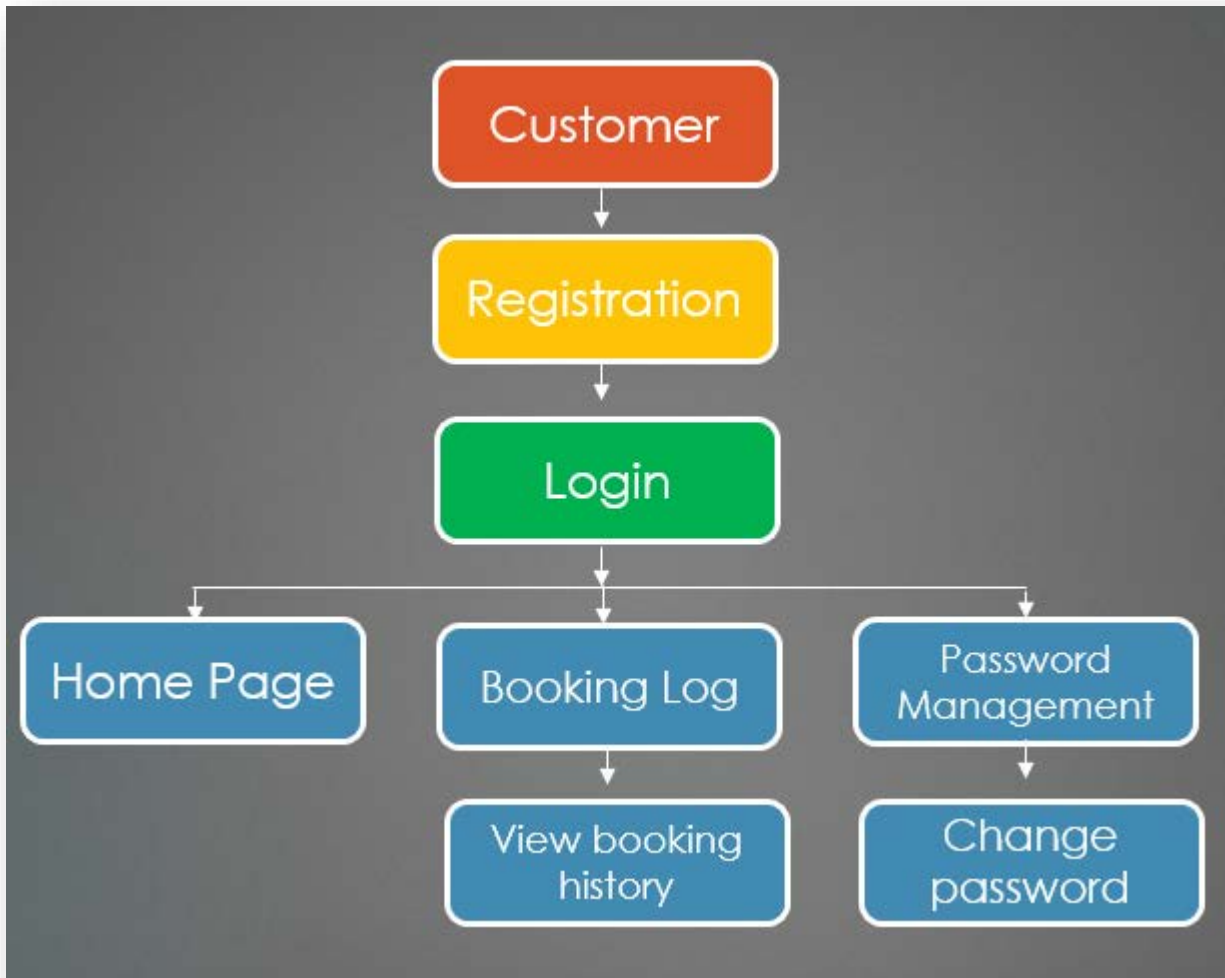
This role is responsible to allow user to handle the website like an ADMIN where he can manage the whole website, transactions, communication with the Owner and Customer whenever required. Admin is also registered on the website same as the other entities but he would have some extra rights than the Owner and Customer. The administrator can book a reservation, add a new reservation, and can bring the place available for reservation. All changes can be made by the Admin on the website.



Figure#2

Customer:

This role is responsible to allow user register and then login as a customer. Customer can search for properties across globe using the Google Search Option. Here customer can also plan accordingly depending on the arrival and departure dates also including the no. of guests. Later once the location is updated user will be given all available options in each city for which he can book reservation depending on the cost, reviews and comments provided by rest of the customers. Every property gives an opportunity to the customer to go through the overview, facilities about the accommodations.

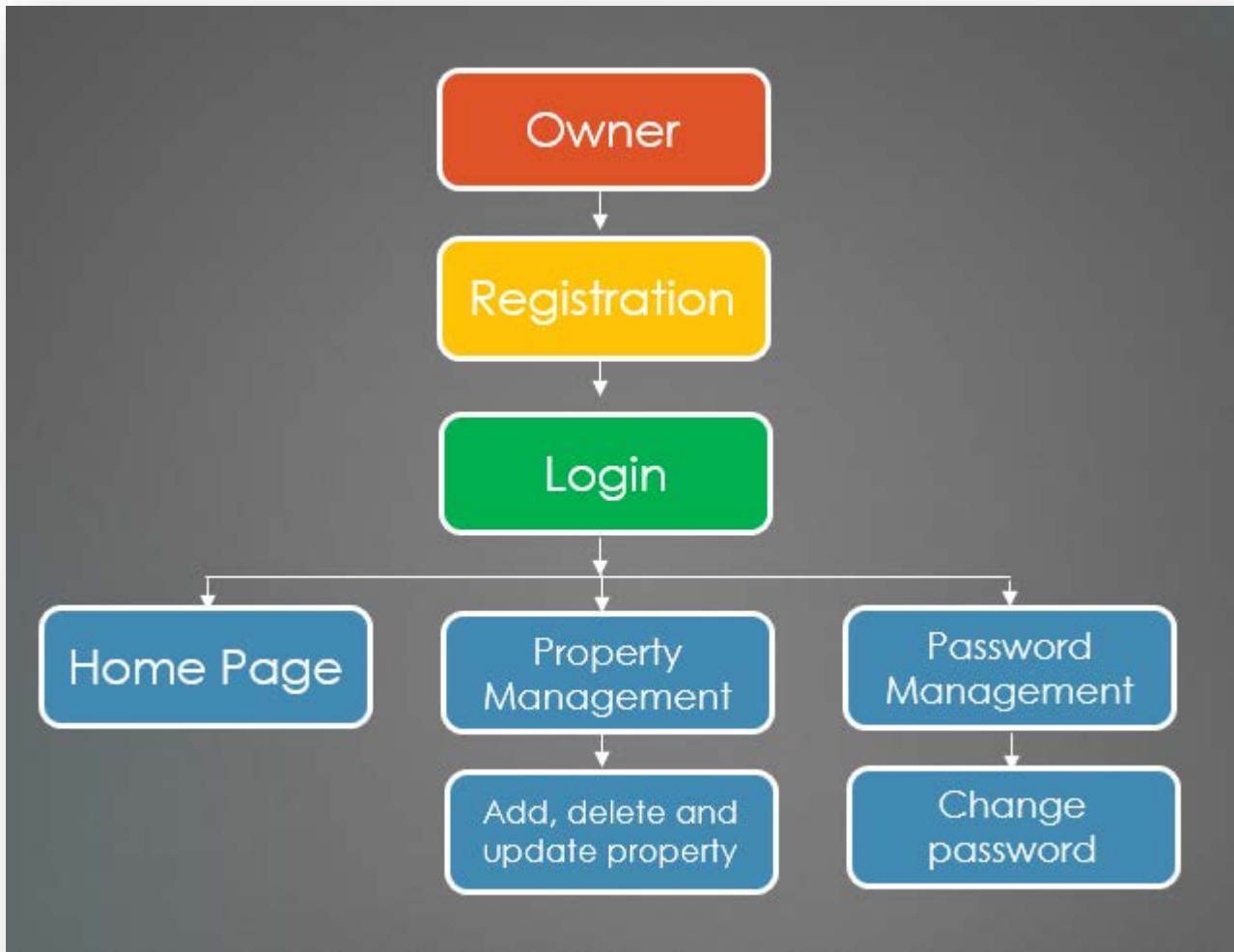


Figure#3

Owner:

This role is responsible to allow user to manage the properties like make them available on the website for customer service. Add, update, and delete a property all such operations are allowed for this user. To give an overview about the property being added, Owner is also given an opportunity to describe the properties, facilities provided, location details and price. Owner is also given an additional marketing strategy to upload images of the property to show case in better way.





Figure#4

### 2.3 Interactions with other Applications

This web application uses every individual GMAIL details to send password reset link, accommodation confirmation details. In future, there would be a process initiated to have our own email server due to security reasons. This helps us not depending on the third-party email servers which ensures successful and safe transactions. Apart from a web application this interacts with the Database which was set up to store all Admin, Customer, and Owner information.

## **2.4 Capabilities**

HomeAway web application has very good capabilities to be a user-friendly application. The main aim here is to help customer book their reservations below are the capabilities identified.

- To register all 3 entities Admin, Owner, and Customer.
- User Sign In/ Sign Up.
- Forgot password function to recover the password if any user forgets password.
- Ability for the Owner to add a property, images, and facility details.
- Admin can make changes for both Owner / Customer.
- Ability for the customer to search for a stay location wise for a limited time.
- To help the customer book a property for a stay.
- To help the customer review and comment on the property about their facilities.

## **2.5 Risk Assessment and Management**

The main risk identified is with amount of data which would be stored on everyday basis. The reason behind the risk is that the project is available across the globe and reservations are processed 24/7. This will lead to excess of Data for which the storage space will be identified every month to overcome this issue. Next one for providing proper customer service, secure transactions and storing user data is a huge task to keep them safe. Involving the helper from a third-party site to act as a gateway for all the transactions will be initiated, proper guidelines would be set up for smooth process. A plan would be set up to control the data flow and proper measures should be initiated to have the data safe. The way data is maintained will fetch an end user with better results, having multiple back up or storage and timely assessing.

### **3 Project Requirements**

#### **3.1 Identification of Requirements**

This project consists of below requirements.

##### **<HomeAway- MEMBER-101>**

This will help an end user register with website as an Admin, Owner, or a Customer with User ID being the Primary Key to access this database. This feature is mainly used to allow a user to access with required rights. This table will contain details like User ID, User Name, Password, Role, and Email ID. All these data will be set up in an edit mode for further changes.

##### **Implementation: Mandatory**

##### **<HomeAway-MEMBER-102>**

This will help an end user login as an Admin on the website with User ID being the Primary Key to access the database. This feature is mainly used to allow a user to access the complete website, check changes made by the Owner & Customer, check all the logs, and help whenever required. This table will contain details like User ID, User Name, Password, Role, and Email ID. All these data will be set up in an edit mode for further changes.

##### **Implementation: Mandatory**

##### **<HomeAway- MEMBER-103>**

This will help an end user login as an Owner on the website with User ID being the Primary Key to access this database. This feature is mainly used to allow a user to add, delete and update property details. This table will contain details like User ID, User Name, Password, Role, and Email ID. All these data will be set up in an edit mode for further changes.

##### **Implementation: Mandatory**

##### **<HomeAway- MEMBER-104>**

This will help an end user login as a Customer on the website with User ID being the Primary Key to access this database. This feature is mainly used to allow a user to make reservations, successful payments, search for a property depending on the location, review, and comment about their stay. This table will contain details like User ID, User Name, Password, Role, and Email ID. All these data will be set up in an edit mode for further changes.

**Implementation: Mandatory**

**<HomeAway-LOGS-104>**

This will help an end user who is the ADMIN to track the Login and Logout logs of all 3 entities Admin, User, and Customer. Automated ID generated being the Primary Key to access this database and User ID acting as Foreign Key for each entity. This feature is mainly used to track the entities for future purpose. This table will contain details like Automated ID, User ID, Login time and Logout time. All these data will be never set up in an edit mode as they are auto generated and never required to edit.

**Implementation: Mandatory**

**<HomeAway-PROPERTIES-105>**

This will help an end user who is the OWNER to add, delete and update all details about the property. Automated ID generated for the property being the Primary Key to access this database and User ID of the Owner acts as a Foreign Key. This table will contain details locations details, description, no. of rooms, price, and images. All these data will be set up in an edit mode for further changes.

**Implementation: Mandatory**

**<HomeAway-TRANSACTION-106>**

This will help an end user who is the ADMIN to track all the reservations made by the Customers. Transaction ID generated for each transaction being the Primary Key to access this database and User ID of the customer acts as a Foreign Key. This table will contain details like locations, start date, end date, no. of guests, cost, transaction id and property id. All these data will never be set up in an edit mode for further changes.

**Implementation: Mandatory**

### ***3.2 Operations, Administration, Maintenance and Provisioning (OAM&P)***

Each feature of an entity on HomeAway web application has countable operations, administration responsibilities and certain maintenance plans for proper functioning of the application. Registering all 3 entities Admin, Owner, and Customer, login / logout, forgot password function to recover the password, ability for the Owner to add a property, images, and facility details, ability for the admin to make changes for both Owner / Customer, ability for the customer to search property location wise as per availability, make reservations and help customer review and comment on the property about their facilities.

### ***3.3 Security and Fraud Prevention***

Security identified is required for the whole amount of data which would be stored on everyday basis. The reason behind the security is that the project is available across the globe and reservations are processed 24/7. This will lead to excess of Data for which the storage space will be identified every month to overcome this issue. Password resets will be requested after every 90 days for successful transactions. Fraud Prevention for providing proper customer service, secure transactions and storing user data is a huge task to keep them safe. Involving the helper from a third-party site to act as a gateway for all the transactions will be initiated, proper guidelines would be set up for smooth process. A plan would be set up to control the data flow and proper measures should be initiated to have the data safe. The way data is maintained will fetch an end user with better results, having multiple back up or storage and timely assessing.

### ***3.4 Release and Transition Plan***

Below is the review plan for all the phases.

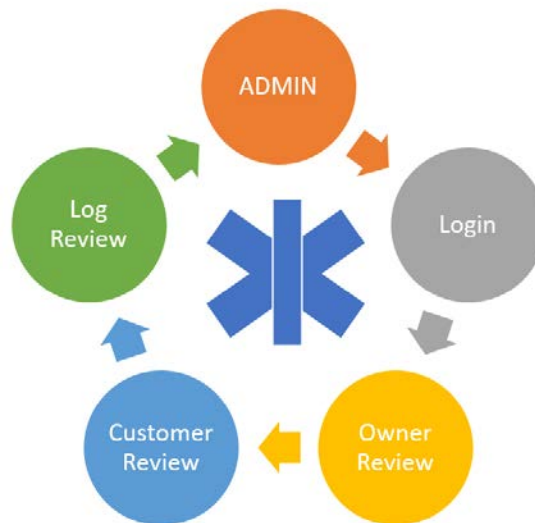
Task	Description	Estimated End Date
Planning	This includes defining the scope, identifying the requirements and data.*Changes if any required*	20th-31st May'2017
Design Review	This includes design review of all collected requirements and data.*Changes if any required*	1st-15th June'2017
Database Setup, Application Development Process	This includes set up of the all Data as per requirements and design reviews.*Changes will be done after the Testing Process and later after going live if required*	15th June - 15th July'2017
Testing Process	Each scenario will be tested to ensure smooth transactions and all errors will be sent back to Development Team for required changes.	15th-22nd July'2017
Phase by Phase Deployment	As per requirements 1st Phase targeted is 07/24/2017 and rest other phases will be scheduled accordingly.	1st Phase 07/24/2017 Rest Phases - TBD
Project Final review	After successful completion of Phase by Phase deployment and required documentation.	7/31/2017

#### 4 Project Design Description

The design requirements for HomeAway are all set dividing into multiple parts. ADMIN and OWNER being the main head entities will handle all rights and administratively providing best access to their Customers.

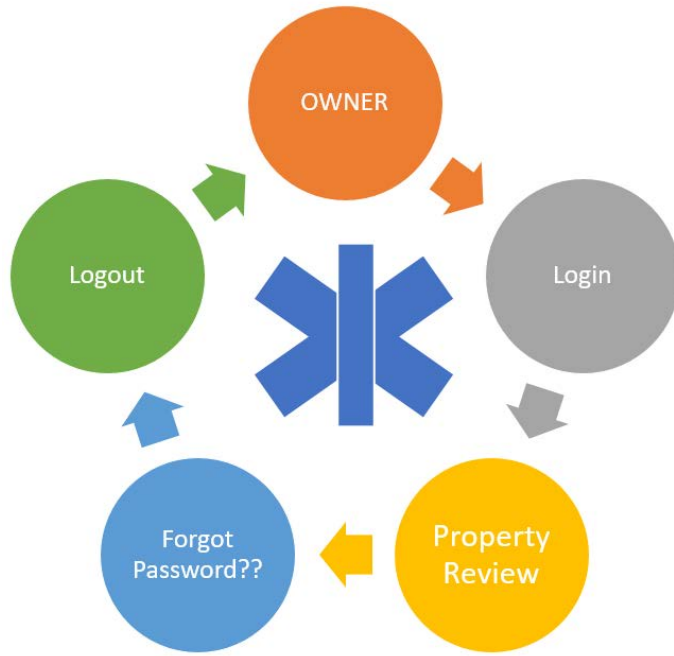
##### For the Admin Role:

Admin can follow a good process of going around step by step or he can jump around to any option whenever required. Usually this is how a process goes:



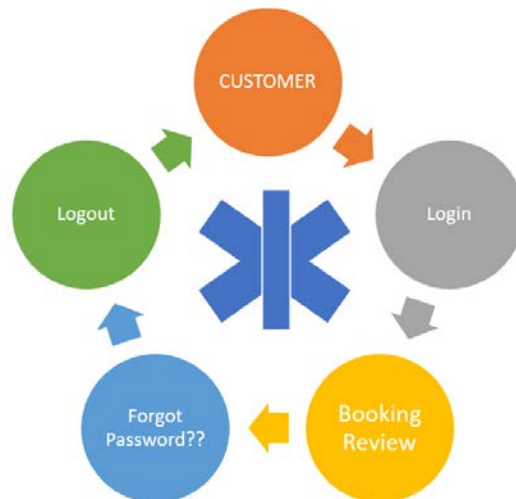
**For the Owner Role:**

Owner can follow a good process of going around step by step or he can jump around to any option whenever required. Usually this is how a process goes:



**For the Customer Role:**

Customer can follow a good process of going around step by step or he can jump around to any option whenever required. Usually this is how a process goes:



## Database Design:

Below are the tables designed to support the web application in Microsoft SQL Server 2014.

- Members Table:

User ID in this table is considered as the Primary Key

Name	Datatype	Null Value
UId	int	FALSE
UNm	varchar(500)	TRUE
Pwd	varchar(500)	TRUE
Role	varchar(50)	TRUE
EmailId	varchar(100)	TRUE

- Logs Table:

Log ID which is auto generated in this table is considered as the Primary Key and User ID which being mapped to the Member table consisting of entities is considered as the Foreign Key

Name	Datatype	Null Value
id	int	FALSE
UId	int	TRUE
intime	datetime	TRUE
outtime	datetime	TRUE

- Property Table:

Property ID which is auto generated in this table is considered as the Primary Key and User ID which being mapped to the Member table consisting of entities is considered as the Foreign Key

Name	Datatype	Null Value
Id	bigint	FALSE
LocationId	varchar(1000)	TRUE
Lon	real	TRUE
Lat	real	TRUE
LocationName	varchar(1000)	TRUE
description	varchar(100)	TRUE
Accommodates	real	TRUE
BedRooms	int	TRUE
Cost	money	FALSE
image1	varchar(MAX)	TRUE
CreatedDateTime	datetime	FALSE
UId	int	TRUE



- Transaction Table:

Transaction ID which is auto generated in this table is considered as the Primary Key and User ID which being mapped to the Member table consisting of entities is considered as the Foreign Key

Name	Datatype	Null Value
id	int	FALSE
Uid	int	TRUE
LocationId	varchar(1000)	TRUE
Lon	real	TRUE
Lat	real	TRUE
LocationName	varchar(1000)	TRUE
StartDate	datetime2(7)	TRUE
EndDate	datetime2(7)	TRUE
Guests	int	TRUE
Cost	money	TRUE
PurchaseDate	datetime2(7)	TRUE
TransId	bigint	TRUE
PropId	int	FALSE

### 5 *Internal/external Interface Impacts and Specification*

No internal/external impacts have been identified as of now.

### 6 *Design Units Impacts*

No design impacts have been identified as of now.

#### 6.1 *Functional Area A/Design Unit A*

##### 6.1.1 *Functional Overview*

This web application can be divided into 4 modules mainly homepage, admin page, customer page, and owner page. Each entity has its functions in their respective pages.

- Home Page:

Function#1 Destination – Helps user use the Google places to find the property

Function#2 Arrive and Depart – Helps user enter the vacation stay dates

Function#3 Guests – Helps user enter the no. of guests will require stay

Function#4 Submit – After all above functions have been applied this button is used to find the results.

Function#5 Login – Redirects all users to login from the Login page.

Function#6 Signup – Helps user register as Admin, Owner, and Customer.

- Admin Page:

Function#7 Owner Review – Helps user to check no. of owners registered here and can perform all operations.

Function#8 Renters Review – Helps user to check no. of renters registered here and can perform all operations

Function#9 Log Details – Help user to check the logs of which entity has logged in and out with the time stamps.

Function#9 Login – Helps user login to the Admin page

Function#10 Logout – Helps user logout of the Admin Page

- Customer Page:

Function#11 Booking Log – Helps user check his booking history

Function#12 Forgot Password – Helps user reset the password

Function#13 Login – Helps user login to the Renter page

Function#14 Logout – Helps user logout of the Renter Page

- Owner Page:

Function#15 Property Review – Helps user Add, Delete, and update property

Function#16 Choose File – Helps user update the image format file of the location and property

Function#17 Save Property – Helps user save the property

Function#18 Forgot Password – Helps user reset the password

Function#19 Login – Helps user login to the Owner page

Function#20 Logout – Helps user logout of the Owner Page

### **6.1.2 Impacts**

No functional impacts have been identified as of now

### **7 Open Issues**

There are no open issues identified as of now

## 8 *References*

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