UNIVERSITY
of
GREENWICH

NATIONAL COLLEGE OF INFORMATION TECHNOLOGY (LILONGWE)

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WORD COUNT: 4820

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Contents

Introduction

It is a well-known fact that finding a property In Malawi is a hassle. Seeking to address this, the proposed platform will seek to address this problem by using innovations that have been presented by the modern technological world. The platform seeks to address this problem by using the power of the internet and the large number of people using the internet in the country and the growing number of people who need properties. The platform will be designed with speed and mobile users in the forefront.

Organisational Background

AdCo Malawi is a startup digital real estate company based and operated in Blantyre Malawi. Adco was formed in 2017 with the aim of building a digital real estate platform that caters to the needs of the Malawian market.

The system is to be used on a scale wide enough to be considered massive. The system, once implemented, will be targeted to a relatively small audience of a select couple of people in the three major cities of Malawi as a way to beta test the system to check stability and usability under a sustained load.

If the initial phase shows good results, a wider roll out to the whole of Malawi is planned which would stretch the database to the limit and push the system to the limit. The results of this would be evident as a user base of a whole nation would mean a wider audience and quicker turn over times for products and customers.

In turn, once Adco becomes a market leader, advertising and other forms of monetization could be implemented to make more money and revenue for the company. With the extra income, other ventures could be invested in to either improve the system further or add extra features to the existing system.

One main category of growth being actively pursued is the mobile application space. As the mobile penetration percentage in Africa continues to grow, leaving it unexploited would be a waste of good pay dirt. The mobile application would act in complementation with the website as opposed to an extension of the website. This would allow people to view and conduct business on the site without having to use a browser but rather a more modern looking and streamlined interface for the system that would allow.

Problem Definiton

Too many people in the country are unable to find the properties they need easily even though they have the power in their phones and in their computers.

Aim and Objectives

To digitally bridge the gap between real estate agents and potential customers through discovery and sensitization.

- Simplify process of finding properties
- Streamline process of property purchase
- Faster revenue generation for marketers
- Digitize process of property purchase and rental

The project is to make the lives of people looking to find dwellings for rent or purchase. This will improve on past dealings that involved people having to go through hassle full methods just to get a simple house or property.

1.4 Methodology

The Agile methodology will be adopted due to its versatility in creation of systems such as this one.

Legal, Social Ethical, Professional Issues

Legal issues. There is a need to properly read up on the constitutional laws and by laws on how real estate is to be controlled in terms of transfer of ownership and who is allowed to partake in these transactions but as of writing, there is no clear precedent against a service such as our proposed system

Social On a social note, there is a wide acceptance of technologies in the countries as there are more and more people using them. Introducing a system such as this one would be socially acceptable and would be seen as a bonus to the communities in the efforts of simplifying the process of getting properties.

Ethical It is always hard knowing that something you create may be responsible for people losing business that directly affects their lives. This system might be seen as a bad thing to real estate agents as it would remove the necessity of having them as a middle man and linking buyers and sellers. This is the cost of progression in technology and must be taken as a step in a direction that could also be seen as positive competition for the real estate agents to become much better or diversify how they approach the market as a whole.

Professional: Professionally there would be a need for the people involved in running the system to keep formalities as they conduct their business as to avoid any possible pitfalls of a venture such as this one.

1.5 Resources Used

Windows (Operating system)

Wamp server

PHP (Programming Language main)

HTML

CSS

Javascript

MySQL

1.6 Structure of the report

Literature Review

Similar Systems

Chapter 4: Review of Technology

Chapter 5 Requirements Analysis

Methodology

Current workflow of current system

Functional and Non-Functional Requirements

Data / Workflow

USE CASE DIAGRAM

System Architecture

Initial Class Diagram

Structural Model

Sequence Diagram

Input and Output Design

USER GUIDE

Conclusion

Literature Review

Project Topic: Problems faced in the discovery of properties to purchase and / or rent in Malawi. The implications of using an information system in the search and discovery of real estate.

My literature review will discuss the following concepts

1. The process of finding and acquiring property in Malawi
    a. The current processes that take place in the pursuit of property in the country.
2. Implementing information systems for marketing purposes in developing countries.
    a. To show the impact similar systems have had on developing countries and the viability of the implementation of the system
3. Define Information Systems
    a. What they are and how they impact the world and the target audience
4. Define Real estate
    a. In the context of the scope of the project and how we expect it to impact us.
5. Establish a link between information systems and real estate
    a. How each one will impact each other in the grand scheme and how they will either work together or cause problems. Also to elaborate how one can cause the other to fail or how they may complement each other.

Similar Systems

System 1 – Daft Ireland

URL = http://www.daft.ie/

System Owner: **Eamonn Galvin**

System Purpose:

Daft.ie is focused on empowering users to make informed decisions through a mixture of innovative product features. Daft.ie is the number one destination for property searchers and connects property professionals with a unique audience of over 2.5 million users each month.

Daft.ie is a website that mainly acts as a hub for finding property for sale, for rent for lease and various other scenarios.

Things learnt from the system

Search – daft has a way of handling search that simplifies the process and at the same time make it very versatile for finding specifically what you are looking for – A forked version of this system **will be adapted** onto my system

Workflow – The way daft functions and the way it handles its properties and how it acts as a middle man between the property lister and the potential customer is a very streamlined process which even allows the original customers phone number to be listed and have direct contact between the two. This allows streamlined communication. **This has been adapted** and extensively modified for the system

Multi Country Inclusiveness. Daft has a wide selection of countries that it supports though its main country of focus is Ireland, they have a wide presence in the ret of Europe. – **This has not been adapted** for my system because this system is mainly focused on Malawi and the localization of its content. This will allow the content to be more focused and get better outreach. In the future, extra territories may be considered and as such, the system will be built on a modular platform.

System 2 – Airbnb

URL https://www.airbnb.com

System Owner

Airbnb is an American owned company that has Brian Chesky as its CEO and was Cofounded by Nathan Blecharczyk, Joe Gebbia and Brian Chesky.

System Purpose:

Airbnb is an American company which hosts an online marketplace and hospitality service, for people to lease or rent short-term lodging including vacation rentals, apartment rentals, homestays, hostel beds, or hotel rooms. The company does not own any lodging; it is a broker which receives percentage service fees from both guests and hosts in conjunction with every booking

Things learnt.

The main thing learnt from this system is the **location management** Airbnb utilizes the built in GPS modules in modern day devices to quickly get the users location and to bring relevant information as quickly and efficiently to the user. – **This feature is to be adapted into the system** under the smart search feature for the system

System monetization – Airbnb gets revenue from getting a cut from any transaction. **This has not been adapted** as our system will not directly handle the transaction but will rely heavily on charges for advertising and google ad sense revenue.

System 3 – Booking.com

URL = https://www.booking.com

System Owner

Booking.com is a travel fare aggregator website and travel metasearch engine for lodging reservations of Dutch origin. Since 2005, it has been owned and operated by United States-based The Priceline Group.

System Purpose

Booking.com is a travel fare aggregator website and travel metasearch engine for lodging reservations. The system gets prices from multiple sources to get accommodation based on fares and proximity to the specified areas.

Things Learned

Review system – Booking.com has a rating-based system that suggests properties based on the reviews left by people who visited those places. **This has been adapted** for the system but rather than reviewing the properties, users will be able to review the area that the property is in. This will allow to give people who are about to move to that area a better understanding of factors that may be useful to them such as water availability, security and he electricity schedules in that area.

Chapter 4: Review of Technology

- Technology for interface layer for presentation
  - HTML, CSS and Javascript
- Technology for business logic – processing (programming)
  - PHP and Javascript
- Technology for data storage – database systems
  - MySQL
- Operating system to support your system
  - Windows
  - Mac Os
  - Linux
  - Chrome OS
  - Android
  - IOS
  - Windows Phone

PROJECT PLAN

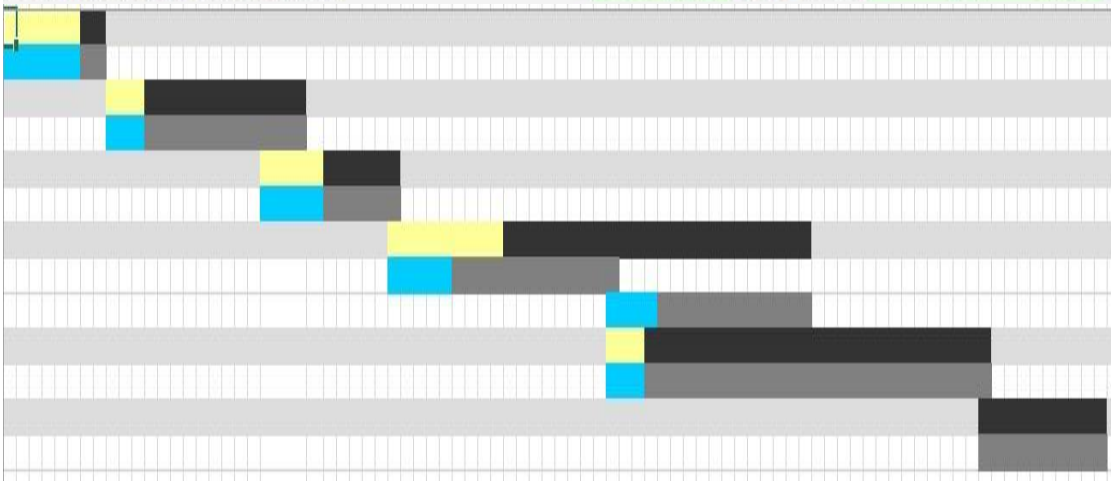
Below is the project plan for the system. Every successful project deserved to be properly planned for optimal results in the end of the project. To do this, Gantt charts were employed to better convey the timeline of the project.

Development Tools

WampServer version 2.5	Package that allows for development, bundles server, PHP and database.
Apache Server version 2.4.9	Server, connects clients to locally hosted server
MySQL 5.6.17	Relational Database Management System
PHP version 5.5.12	Programming language of choice
Notepad++ version 6.9.2	Text editor, IDE of choice
StarUML version 5.0.2.1570	Modelling package, used for the creation of models
Microsoft Windows 10 - 1607	Operating system
Microsoft Office 2016	For document production
Microsoft Office Project 2007 Edraw Max version 7.2	For planning and scheduling.
Google Chrome version 53	For presentation layer.

GANTT CHART AND PROJECT TIMELINE

Realty Discovery and Support platform for ADCO Malawi LTD.		Start Date:	November 22, 2017	
AdCo Malawi LTD				
Task	Start Date	End Date	Duration (days)	Percent Complete
				Date:
1.0 Pre Project	2017-11-22	2017-11-29	8	75.00%
1.1 Project Proposal	2017-11-22	2017-11-29	8	75.00%
2.0 Feasibility	2017-11-30	2017-12-12	13	25.00%
2.1 Draft Analysis Document	2017-11-30	2017-12-12	13	25.00%
3.0 Foundation	2017-12-12	2017-12-19	8	25.00%
3.1 Final Analysis Document	12/12/2017	2017-12-19	8	25.00%
4.0 Exploration	2017-12-19	2018-01-20	33	30.00%
4.1 Draft Design Document	2017-12-19	2018-01-05	18	30.00%
4.2 Final Design Document	2018-01-05	2018-01-20	16	30.00%
5.0 Engineering	2018-01-05	2018-02-03	30	10.00%
5.1 Coded System	2018-01-05	2018-02-03	30	10.00%
6.0 Deployment	2018-02-03	2018-02-12	10	0.00%
6.1 Final Project Documentation	2018-02-03	2018-02-12	10	0.00%



Chapter 5 Requirements Analysis

Methodology

The Agile methodology will be adopted due to its versatility in creation of systems such as this one.

Current workflow of current system

As of now, AdCo does not have a system that It uses but rather seeks to bring a new product entirely to the market. The way properties were sold and rented out in the country was entirely based on either word of mouth or threw agents. These mediums have shown to be quite inefficient in this digital age because it is known that the information can get to the users much faster if the right mediums are used.

Functional and Non-Functional Requirements

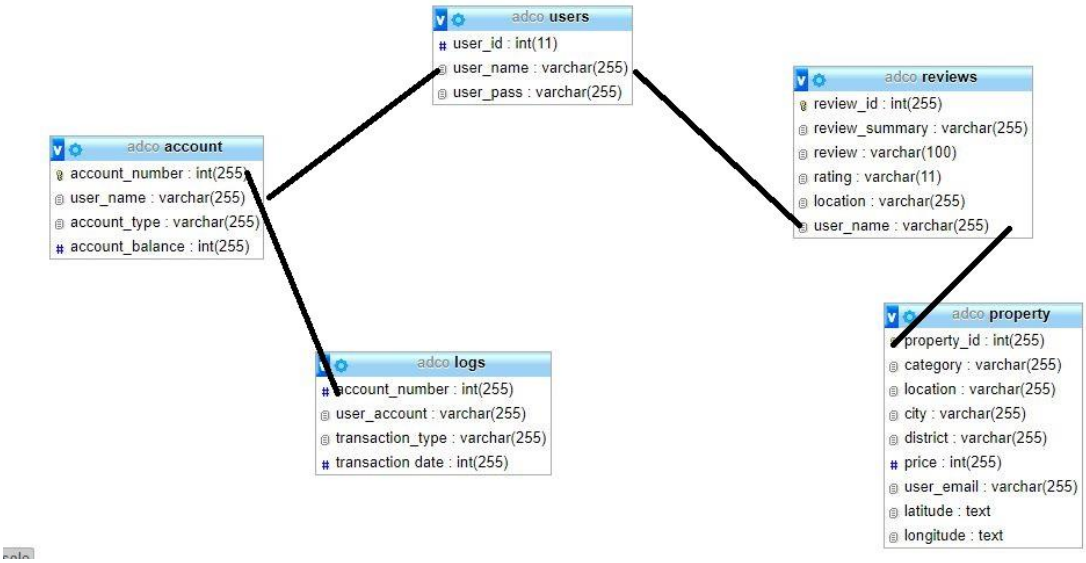
1. Add Properties:
    - This will allow a user to add a property they desire to be sold or rented to the systems database.
2. Smart Search
    - A fully customizable search algorithm for the user to get specifically what they need when searching for a property. This would use multiple fields such as district, the type of property they are searching for (rent, buy, lease etc..) and price range.
3. View Properties
    - Allow users to view properties in full detail. When a property catches the eye of a potential customer, the user should be able to view details that can not be summarised, contact information and an image gallery
4. Add Clients
    - Clients or users should be able to register to the website for customised service to them.
5. User Preference management
    - The storage of user preferences such as prefered locations, property types which can be used for targeted advertisements to the users which could in turn generate more interest in the properties increasing revenue.
6. Trageted Advertisement
    - With user preferences stored, advertisement from third parties can be introduced such as google ad sense for a different revenue stream for the company.
7. Enhanced user security
    - The use of Hyper Text Transfer Protocol Secure and Hashing techniques such as MD5 for enhanced security during transmission of data and the storage of passwords in an encrypted form.
8. View Clients
    - This means that a system administrator can be able to view all clients that have either transacted with the company and website directly or users who have signed up for the website.
9. Read reviews
    - This would allow the user to read reviews of a specific area that a house is situated in to help make better decisions.
10. Post reviews
    - This will allow a user to post a review of either their experience with the system or a geographical area to either point out flaws in the system or to help others make informed choices.
11. Password Retrieval
12. Generate and print statistics

- This will allow a system administrator to view statistics on the performance of the system and the levels of user interaction. Things like how much traffic is coming through the website would be added to help convince investors on how effective the website has become.

13. Dashboard
    - Administrator dashboard for a better view of all activity of the website. Things like number of users. This dashboard can be used to do administrative tasks such as reset passwords and other administrative tasks
14. Backup
    - This will safeguard the system from potential failures at any point in time by scheduling data backups periodically.
15. In Application Messenger
    - A built in messenger for quick communication between a buy and a seller or for support tickets with the website staff.

Chapter 6

Data Models



Database adco

Table structure for table account

account

Column	Type	Null	Default	Comments
account_number *(Primary)*	int(255)	No		
user_name	varchar(255)	No		
account_type	varchar(255)	No		
account_balance	int(255)	No		

Indexes

Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null	Comment
PRIMARY	BTREE	Yes	No	account_number	0	A	No	
user_name	BTREE	No	No	user_name	0	A	No	

logs

Column	Type	Null	Default	Comments
account_number	int(255)	No		
user_account	varchar(255)	No		
transaction_type	varchar(255)	No		
transaction date	int(255)	No		

property

Column	Type	Null	Default	Comments
property_id *(Primary)*	int(255)	No		
category	varchar(255)	No		
location	varchar(255)	Yes	*NULL*	
city	varchar(255)	No		
district	varchar(255)	No		
price	int(255)	No		
user_email	varchar(255)	No		
latitude	text	No		
longitude	text	No		

Indexes

Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null	Comment
PRIMARY	BTREE	Yes	No	property_id	0	A	No	
user_id	BTREE	No	No	user_email	0	A	No	

reviews

Column	Type	Null	Default	Comments

review_id *(Primary)*	int(255)	No		
review_summary	varchar(255)	No		
review	varchar(100)	Yes	*NULL*	
rating	varchar(11)	Yes	*NULL*	
location	varchar(255)	No		
user_name	varchar(255)	Yes	*NULL*	

Indexes

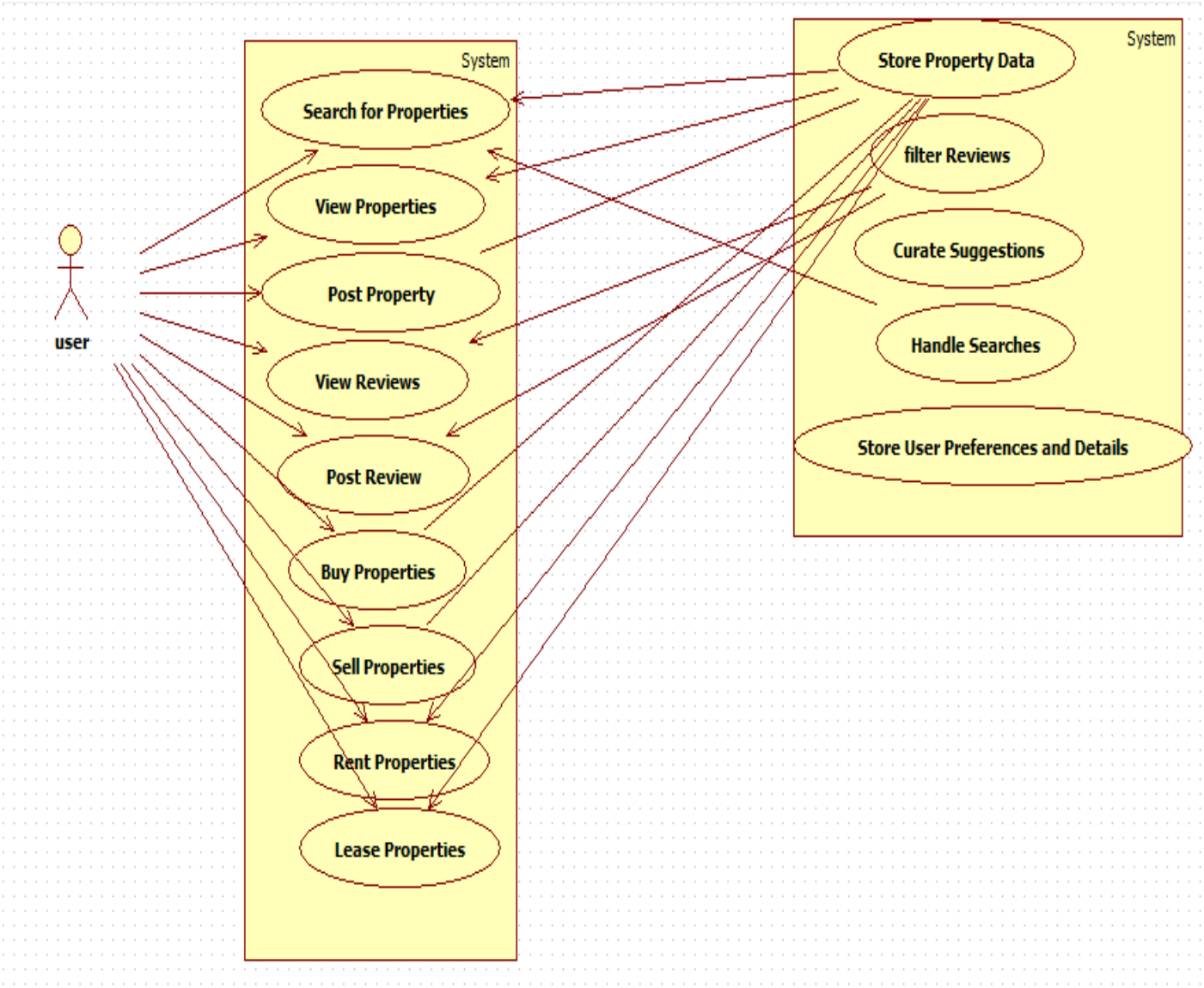
Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null	Comment
PRIMARY	BTREE	Yes	No	review_id	11	A	No	
user_id	BTREE	No	No	user_name	1	A	Yes	

users

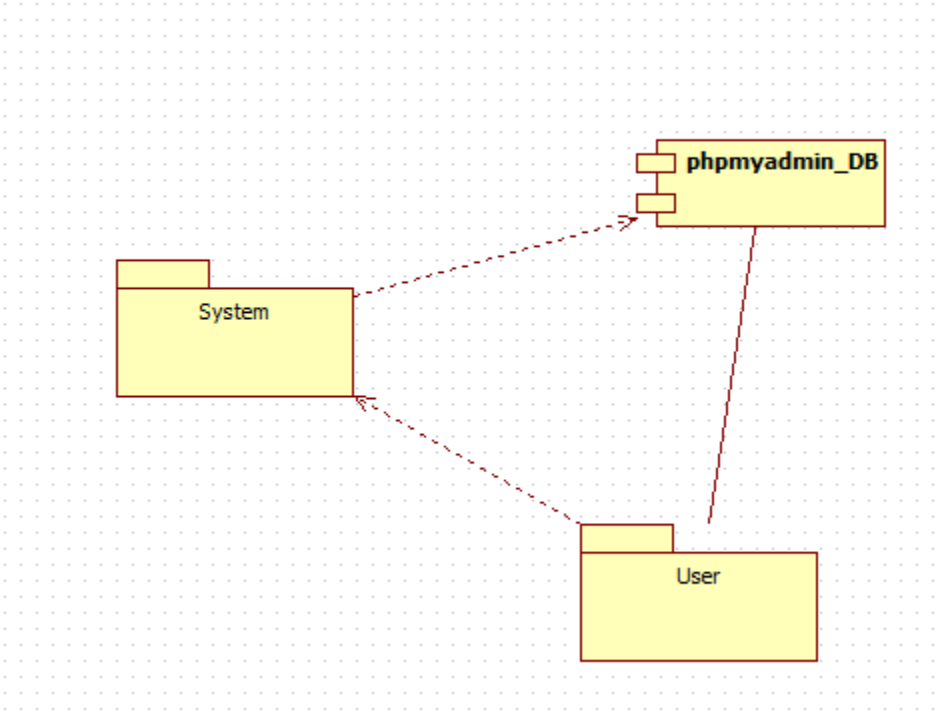
Column	Type	Null	Default	Comments
user_id	int(11)	No		
user_name	varchar(255)	No		
user_pass	varchar(255)	No		

Data / Workflow

USE CASE DIAGRAM

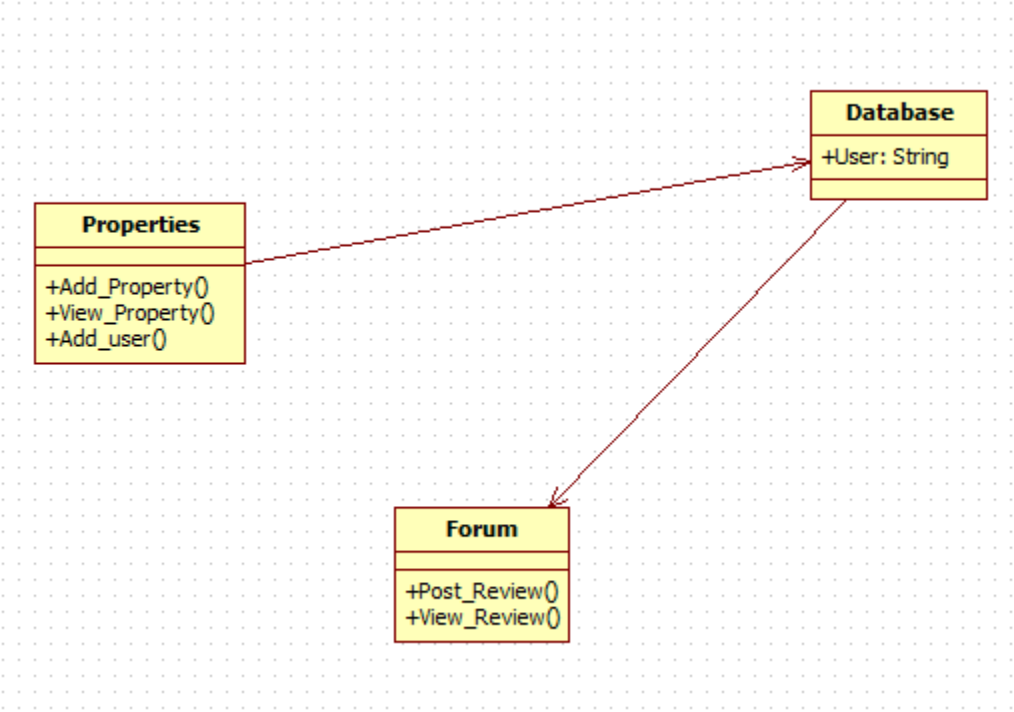


System Architecture

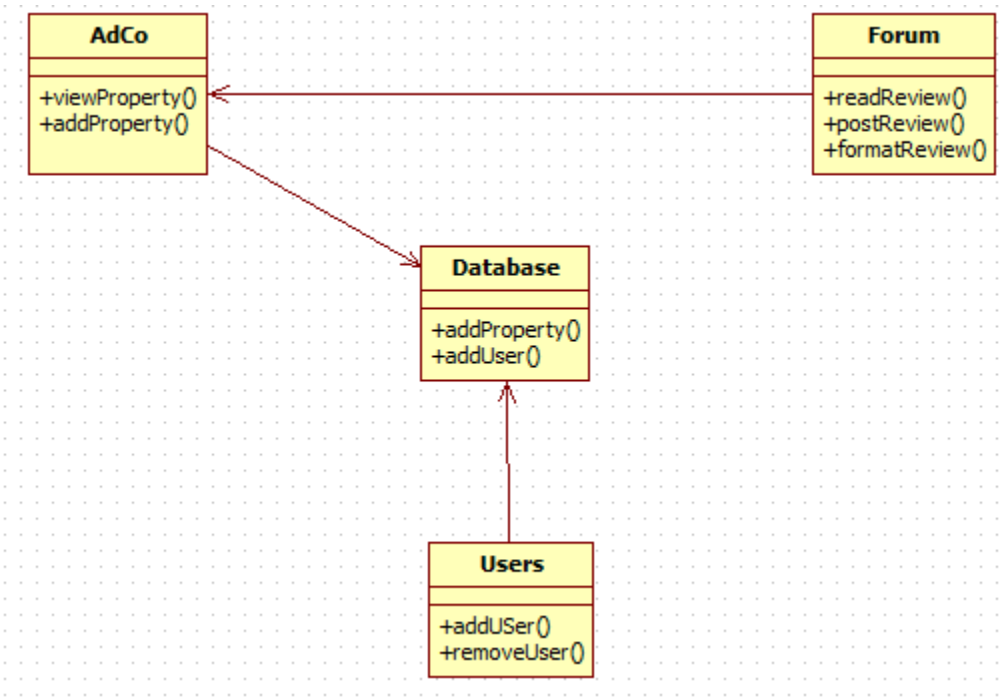


With this diagram, we can see that all components are dependent on each other in one way or the other. A user is stored on the database using the system, yet the database data would not be utilized unless it is processed by the system and a user would not exist without the database.

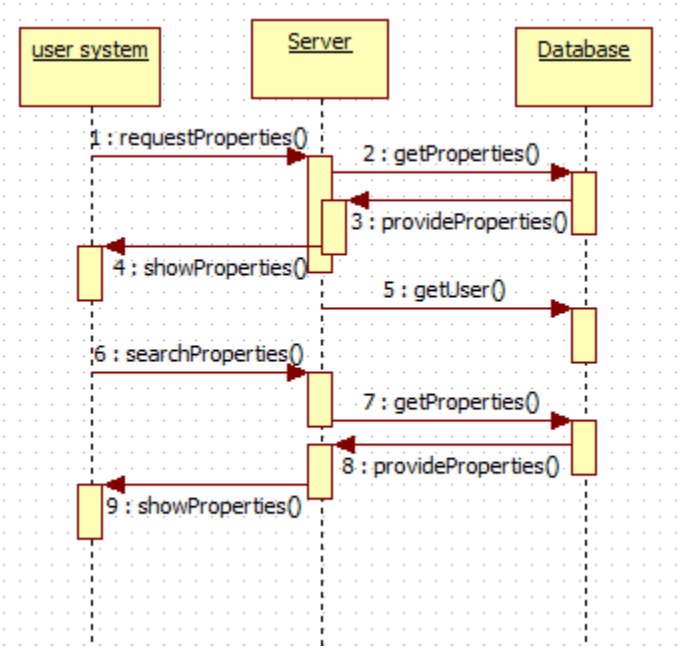
Initial Class Diagram



Structural Model



Sequence Diagram



Input and Output Design

UNIT TEST: 1		**TEST FILE:** login.php	**DESIGNED BY:** Martin Suleman	
DATA SOURCE: User entry		**OBJECTIVE: Log in to the system**	**TESTED BY:** Martin Suleman	
TEST CASE	**DESCRIPTION**	**TASK**	**EXPECTED RESULTS**	**ACTUAL RESULTS**
1.1	Testing User Credentials	Enter credentials	Log into the system	

UNIT TEST: 1		**TEST FILE:** login.php	**DESIGNED BY:** Martin Suleman	
DATA SOURCE: user entry		**OBJECTIVE: sign up for the system**	**TESTED BY:** Martin Suleman	
TEST CASE	**DESCRIPTION**	**TASK**	**EXPECTED RESULTS**	**ACTUAL RESULTS**
1.1	Sign up for the system	Enter credentials	Sign up for the system	

UNIT TEST: 1		**TEST FILE:** index.php	**DESIGNED BY:** Martin Suleman	
DATA SOURCE: Search for Property		**OBJECTIVE: Log in to the system**	**TESTED BY:** Martin Suleman	
TEST CASE	**DESCRIPTION**	**TASK**	**EXPECTED RESULTS**	**ACTUAL RESULTS**
1.1	Search for property	Search for property	Display search results	

UNIT TEST: 1		**TEST FILE:** review.php	**DESIGNED BY:** Martin Suleman	
DATA SOURCE: review area		**OBJECTIVE: review particular area**	**TESTED BY:** Martin Suleman	
TEST CASE	**DESCRIPTION**	**TASK**	**EXPECTED RESULTS**	**ACTUAL RESULTS**
1.1	Allow user to review specific area	Review area	Post user written review	

APENDIX D: USER GUIDE

USER GUIDE

Installation Requirements

Required items

1. A copy of WAMP or XAMP server installed
2. The Zip file containing the Adco Main folder

Set Up

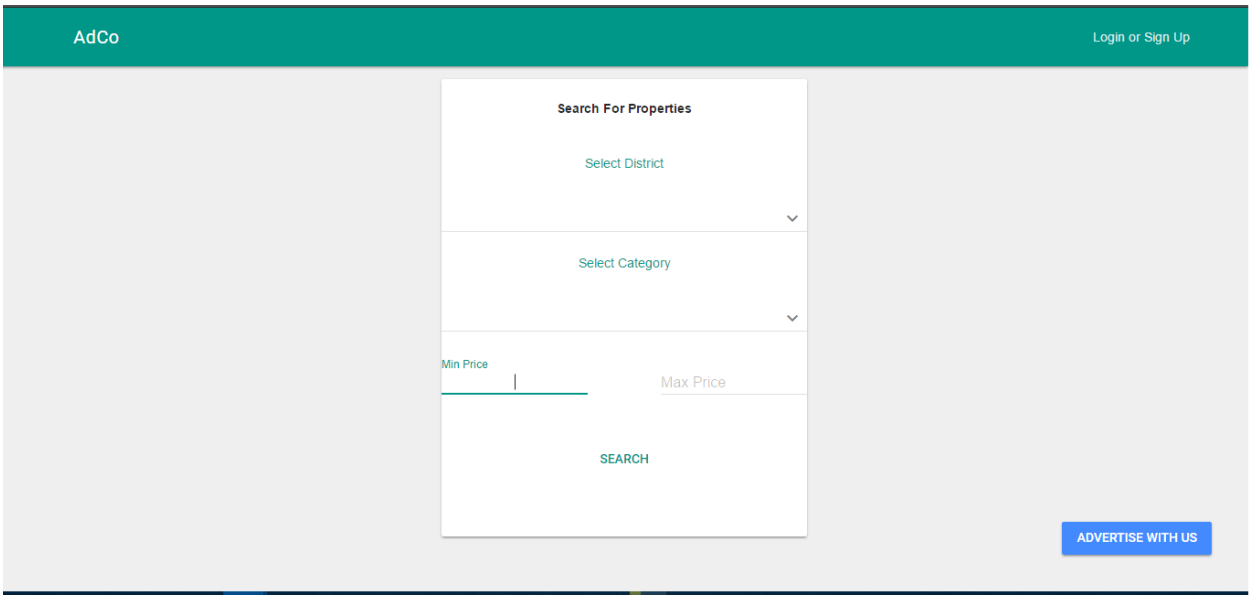
1. Extract all files in the Zip file to the default installation folder
2. Open phpMyAdmin
3. Go to the import tab in phpMyAdmin
4. Import the ‘adco.sql’ file into phpMyAdmin
5. Open localhost/adco main.php in browser
6. Enjoy!

System Usage

All relevant code snippets are provided each step for reference or use.

I

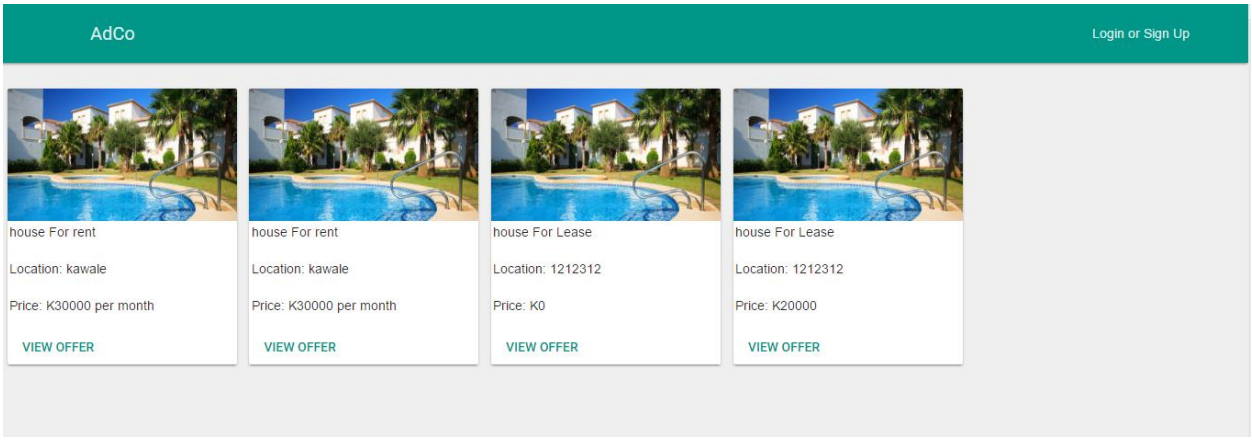
The first thing that greets the user is the index page or rather the home page, it was designed to be as simple and intuitive as possible. That is why the search box is positioned smack dab in the center of the screen.



```
<?php


session_start();


?>
<html>
<head>
      <title>adCo</title>
      <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="description" content="Welcome to adco.com.">
    <meta name="viewport" content="width=device-width, initial-
scale=1">
      <link rel="stylesheet" href="assets/material.min.css">
      <script src="assets/material.min.js"></script>
      <link rel="stylesheet"
href="https://fonts.googleapis.com/css?family=Roboto:regular,bold,ital
ic,thin,light,bolditalic,black,medium&amp;lang=en">
    <link rel="stylesheet"
href="https://fonts.googleapis.com/icon?family=Material+Icons">
      <script src="assets/select/getmdl-select.min.js"></script>
   <link rel="stylesheet" href="assets/select/getmdl-select.min.css">
   <style>
            .demo-card-square.mdl-card
            {
              width: 400px;
              height: 400px;
              margin:auto;
              margin-top:1%;


            }
            .demo-card-square > .mdl-card__title
            {
```

Once on this page, the user will be able to specify the criteria that they want their property to meet. They can for example want a property for rent that is in the district of Lilongwe, with a minimum price of K50,000. They can then select all required fields and click search on the bottom portion of the ox. This will then process their query and lead to the next page which is the search results page.

||



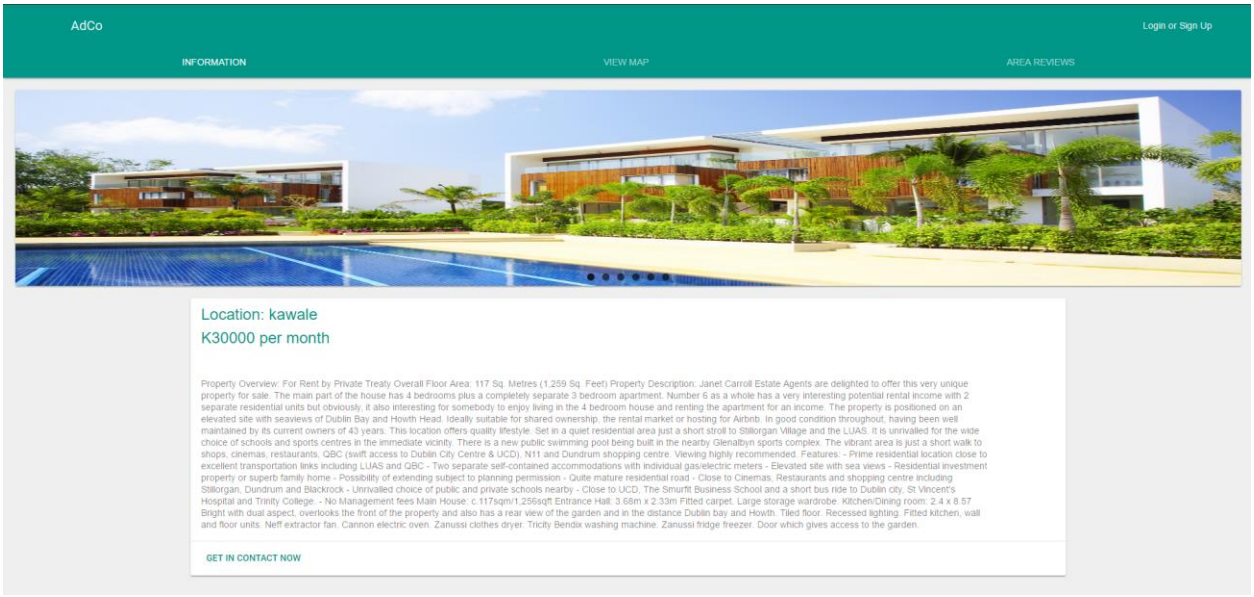
```
<?php


session_start();


?>
<html>
<head>
      <title>adCo</title>
      <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="description" content="Welcome to adco.com.">
    <meta name="viewport" content="width=device-width, initial-
scale=1">
      <link rel="stylesheet" href="assets/material.min.css">
      <script src="assets/material.min.js"></script>
      <link rel="stylesheet"
href="https://fonts.googleapis.com/css?family=Roboto:regular,bold,ital
ic,thin,light,bolditalic,black,medium&amp;lang=en">
    <link rel="stylesheet"
href="https://fonts.googleapis.com/icon?family=Material+Icons">
      <script src="assets/select/getmdl-select.min.js"></script>
   <link rel="stylesheet" href="assets/select/getmdl-select.min.css">
   <style>
            .demo-card-square.mdl-card
            {




            }
            .demo-card-square > .mdl-card__title
            {
              color: #fff;
            }
```

NOTE: at the time of writing, data that was inputted was dummy data that is why all the header images are the same.

On this page, the user will be able to see all the properties that match their search criteria.

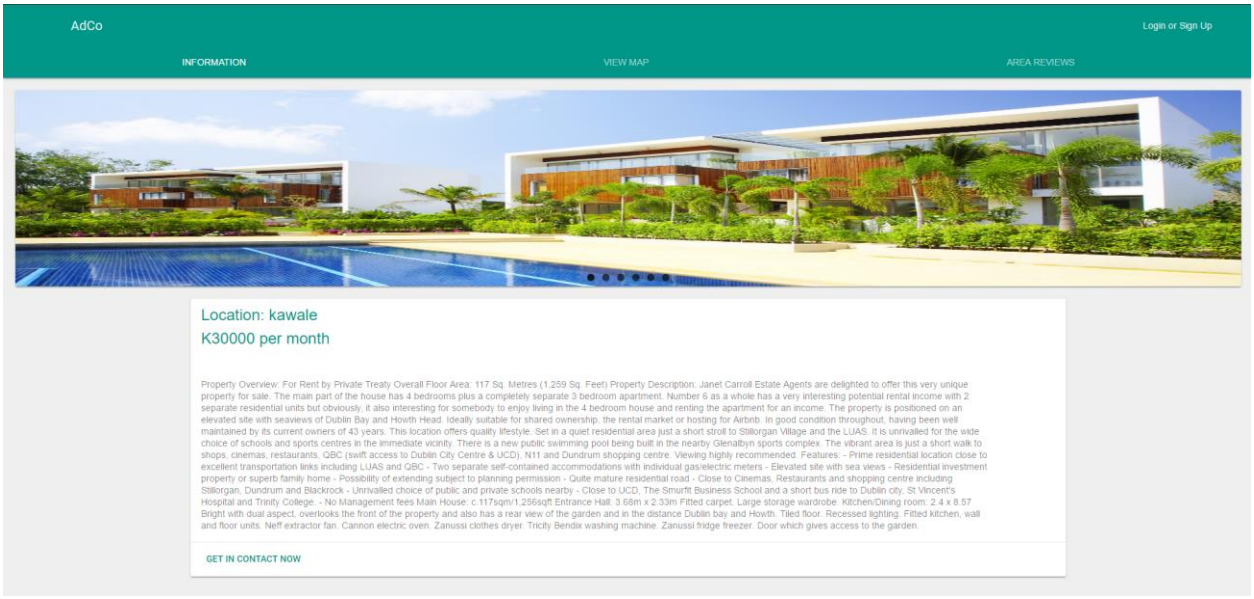
They can then click on view offer to then view the house they would like in further detail.

|||



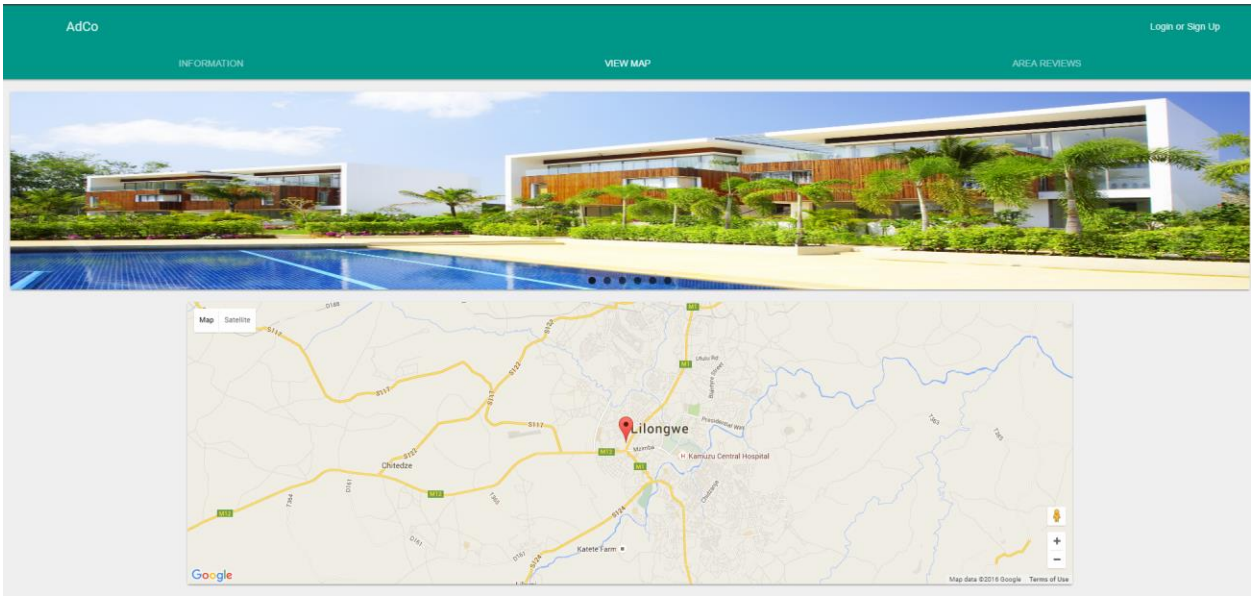
As we can see, the page is tabulated into three portions, one for information, one for the map and one for the reviews.

- Information tab



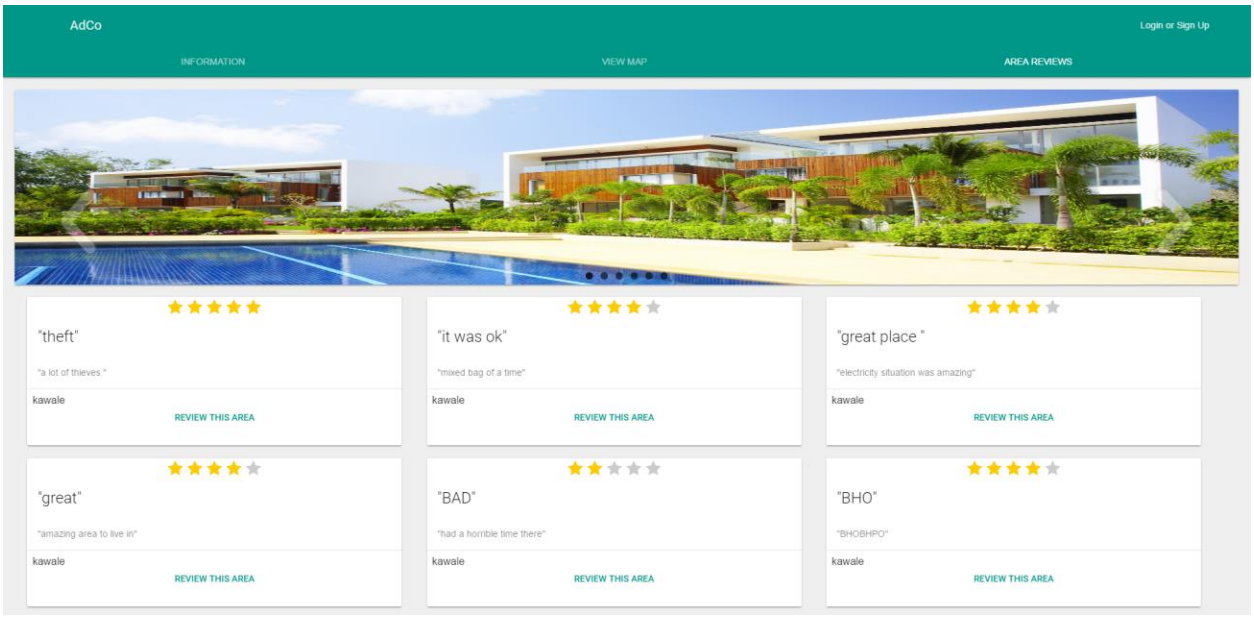
This tab shows general information for the user like the price, how many bedrooms and exactly where it is located.

- View Map Tab



This tab shows where the property is located on a map.

- Reviews Tab



This tab shows the reviews that users have posted which will allow other users to get a better understanding of how the area is like.

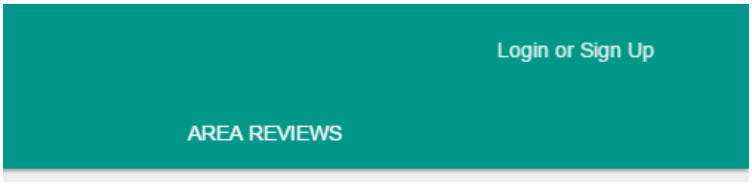
When the user clicks on the Review this area part of every card, it will send them to a page where they can post a review of that specific area. To do so though, they would have to log in first.

To log in they would have to follow the following steps.

```
<?php


session_start();


?>
<html>
<head>
      <title>adCo</title>
      <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="description" content="Welcome to adco.com.">
    <meta name="viewport" content="width=device-width, initial-
scale=1">
      <link rel="stylesheet" href="assets/material.min.css">
      <link rel="stylesheet" href="assets/slide.css">
      <script src="assets/material.min.js"></script>
      <link rel="stylesheet"
href="https://fonts.googleapis.com/css?family=Roboto:regular,bold,ital
ic,thin,light,bolditalic,black,medium&amp;lang=en">
    <link rel="stylesheet"
href="https://fonts.googleapis.com/icon?family=Material+Icons">
      <script src="assets/select/getmdl-select.min.js"></script>
   <link rel="stylesheet" href="assets/select/getmdl-select.min.css">
   <link rel="stylesheet" href="assets/star.css" />
   <style>
            .demo-card-square.mdl-card
            {
            overflow:hidden;
              width: 30%;
              margin:auto;
              margin-top:1%;
```

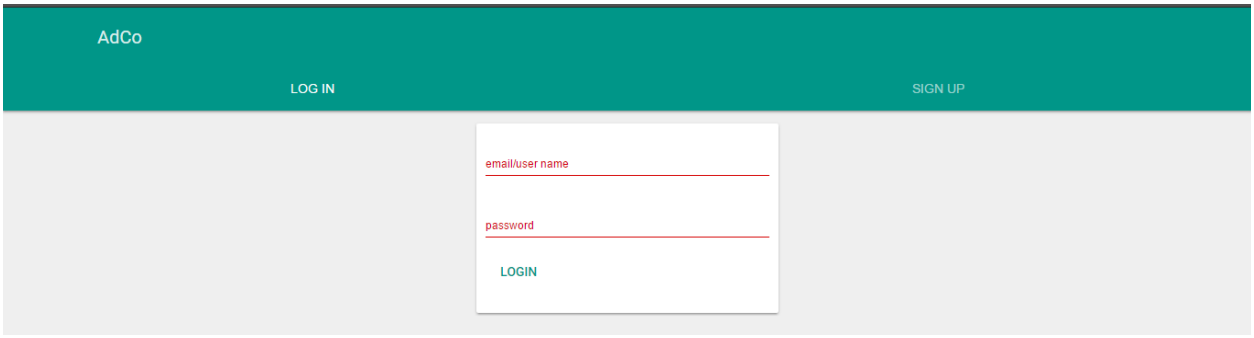
IV

Click on the top right-hand side of any page where it is written login or signup.



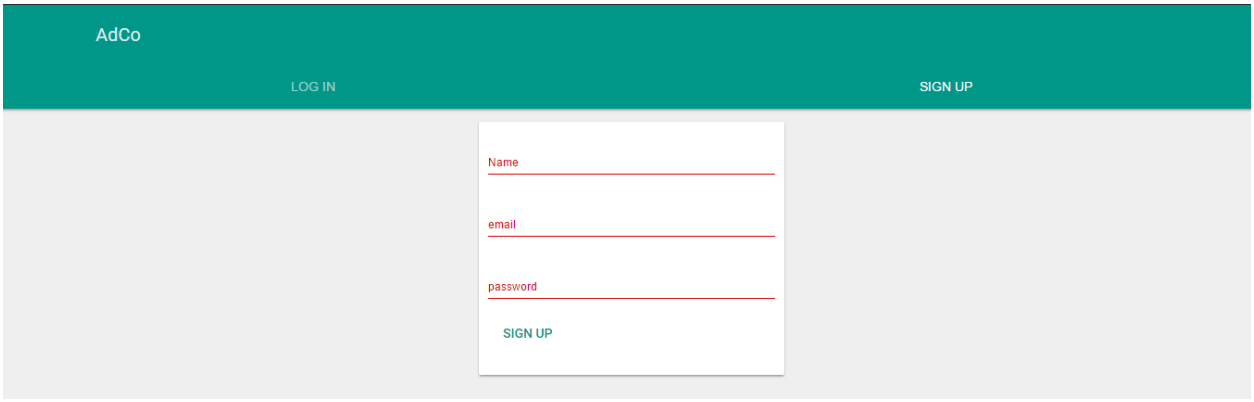
```
<?php


session_start();


?>
<html>
<head>
     <title>adCo</title>
     <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="description" content="Welcome to adco.com.">
    <meta name="viewport" content="width=device-width, initial-
scale=1">
     <link rel="stylesheet" href="assets/material.min.css">
     <script src="assets/material.min.js"></script>
     <link rel="stylesheet"
     href="https://fonts.googleapis.com/css?family=Roboto:regular,bold
,italic,thin,light,bolditalic,black,medium&amp;lang=en">
    <link rel="stylesheet"
href="https://fonts.googleapis.com/icon?family=Material+Icons">
     <script src="assets/select/getmdl-select.min.js"></script>
   <link rel="stylesheet" href="assets/select/getmdl-select.min.css">
   <link rel="stylesheet" href="assets/select/getmdl-select.min.css">
   <link rel="stylesheet" href="assets/star.css" />
   <style>
           .demo-card-square.mdl-card
           {
             width: 400px;
             height: 400px;
             margin:auto;
             margin-top:1%;
```

This will then redirect the user to a page where they can fill in their information.



As before, this page is also tabulated.

One tab for log in (above) and the other for signing up.



Once completed, these forms redirect the user if the inputs are correct.

Log in and Sign up scripts are provided below

```
<?php


session_start();


if (isset($_SESSION['user_name']))
      {
           unset($_SESSION['user_name']);
      }
?>
<html>
<head>
 <title>Adco.com</title>
<meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="description" content="Welcome to Adco.com">
    <meta name="viewport" content="width=device-width, initial-
scale=1">
     <link rel="stylesheet" href="assets/material.min.css">
     <script src="assets/material.min.js"></script>
     <link rel="stylesheet"
href="https://fonts.googleapis.com/css?family=Roboto:regular,bold,ital
ic,thin,light,bolditalic,black,medium&amp;lang=en">
    <link rel="stylesheet"
href="https://fonts.googleapis.com/icon?family=Material+Icons">
     <script src="assets/select/getmdl-select.min.js"></script>
   <link rel="stylesheet" href="assets/select/getmdl-select.min.css">
   <style>
           .demo-card-square.mdl-card
           {
           overflow:hidden;


             margin:auto;
             margin-top:1%;
```

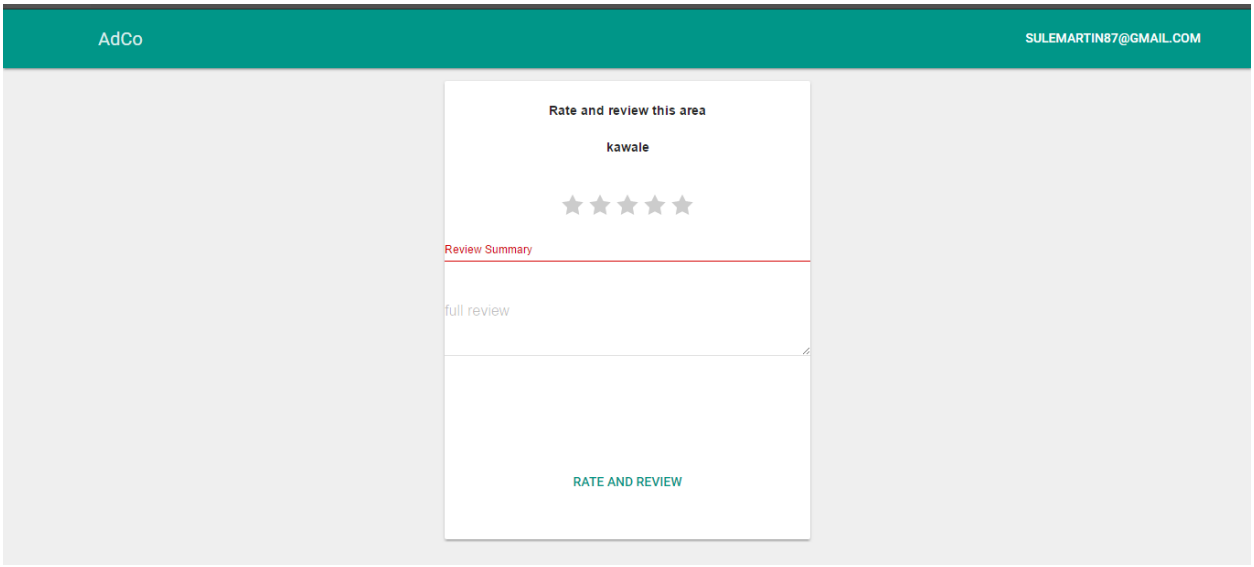
```
<?php
session_start();



if (isset($_SESSION['user_name']))
      {

           unset($_SESSION['user_name']);

      }

?>


<html>
<head>
     <title>adCo</title>
     <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="description" content="Welcome to adco.com.">
    <meta name="viewport" content="width=device-width, initial-
scale=1">
     <link rel="stylesheet" href="assets/material.min.css">
     <script src="assets/material.min.js"></script>
     <link rel="stylesheet"
href="https://fonts.googleapis.com/css?family=Roboto:regular,bold,ital
ic,thin,light,bolditalic,black,medium&amp;lang=en">
    <link rel="stylesheet"
href="https://fonts.googleapis.com/icon?family=Material+Icons">
     <script src="assets/select/getmdl-select.min.js"></script>
   <link rel="stylesheet" href="assets/select/getmdl-select.min.css">
   <style>
           .demo-card-square.mdl-card
           {
```

```
<?php


session_start();


?>
<html>
<head>
      <title>adCo</title>
      <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="description" content="Welcome to adco.com.">
    <meta name="viewport" content="width=device-width, initial-
scale=1">
      <link rel="stylesheet" href="assets/material.min.css">
      <script src="assets/material.min.js"></script>
      <link rel="stylesheet"
href="https://fonts.googleapis.com/css?family=Roboto:regular,bold,ital
ic,thin,light,bolditalic,black,medium&amp;lang=en">
    <link rel="stylesheet"
href="https://fonts.googleapis.com/icon?family=Material+Icons">
      <script src="assets/select/getmdl-select.min.js"></script>
   <link rel="stylesheet" href="assets/select/getmdl-select.min.css">
   <style>
            .demo-card-square.mdl-card
            {
              width: 400px;
              height: 400px;
              margin:auto;
              margin-top:1%;


            }
            .demo-card-square > .mdl-card__title
            {
```

V

Once the user logs in, they can then review the area that they wanted.

The user will be directed to a page like the one below

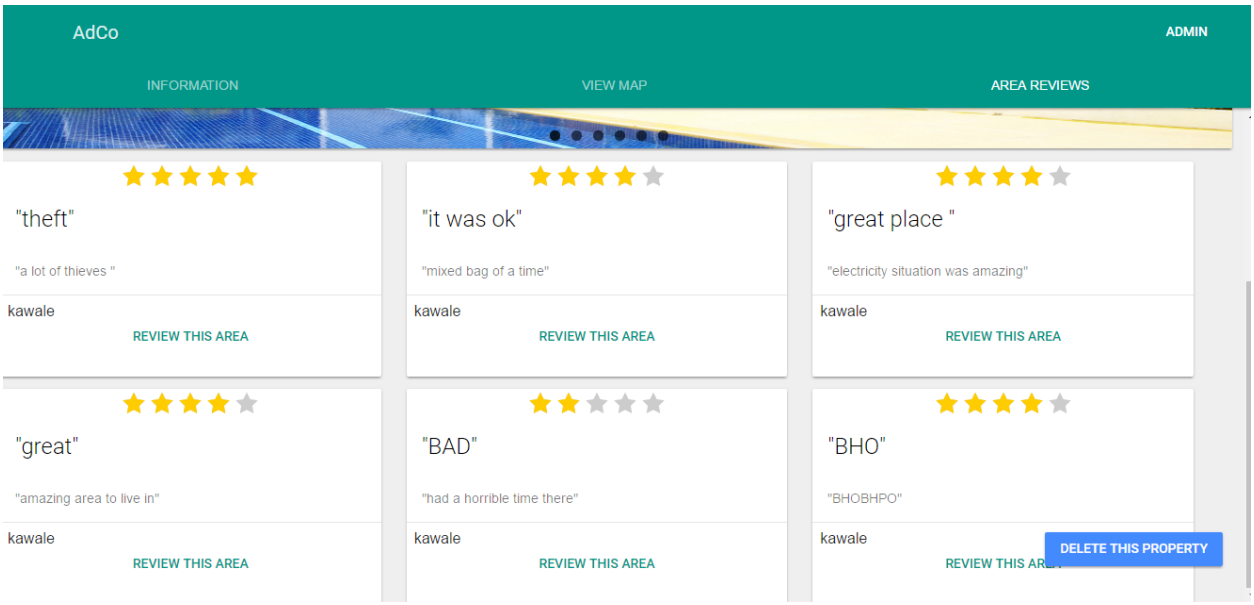


This page will allow the user to post a review and rating to their hearts desire.

```
<?php


session_start();


?>
<html>
<head>
     <title>adCo</title>
     <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="description" content="Welcome to adco.com.">
    <meta name="viewport" content="width=device-width, initial-
scale=1">
     <link rel="stylesheet" href="assets/material.min.css">
     <script src="assets/material.min.js"></script>
     <link rel="stylesheet"
     href="https://fonts.googleapis.com/css?family=Roboto:regular,bold
,italic,thin,light,bolditalic,black,medium&amp;lang=en">
    <link rel="stylesheet"
href="https://fonts.googleapis.com/icon?family=Material+Icons">
     <script src="assets/select/getmdl-select.min.js"></script>
   <link rel="stylesheet" href="assets/select/getmdl-select.min.css">
   <link rel="stylesheet" href="assets/select/getmdl-select.min.css">
   <link rel="stylesheet" href="assets/star.css" />
   <style>
           .demo-card-square.mdl-card
           {
             width: 400px;
             height: 400px;
             margin:auto;
             margin-top:1%;
```

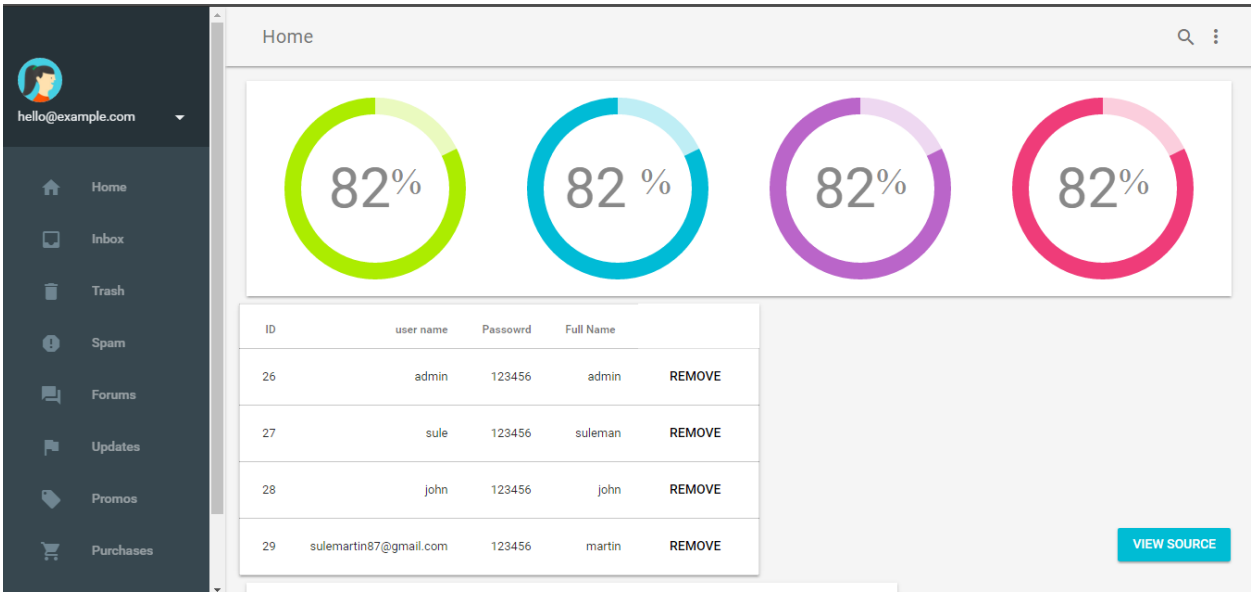
VI – Administrator

Once the administrator logs into the system, they are basically in god mode. In this mode, there are subtle differences such as the ability to delete a property on the fly like below.



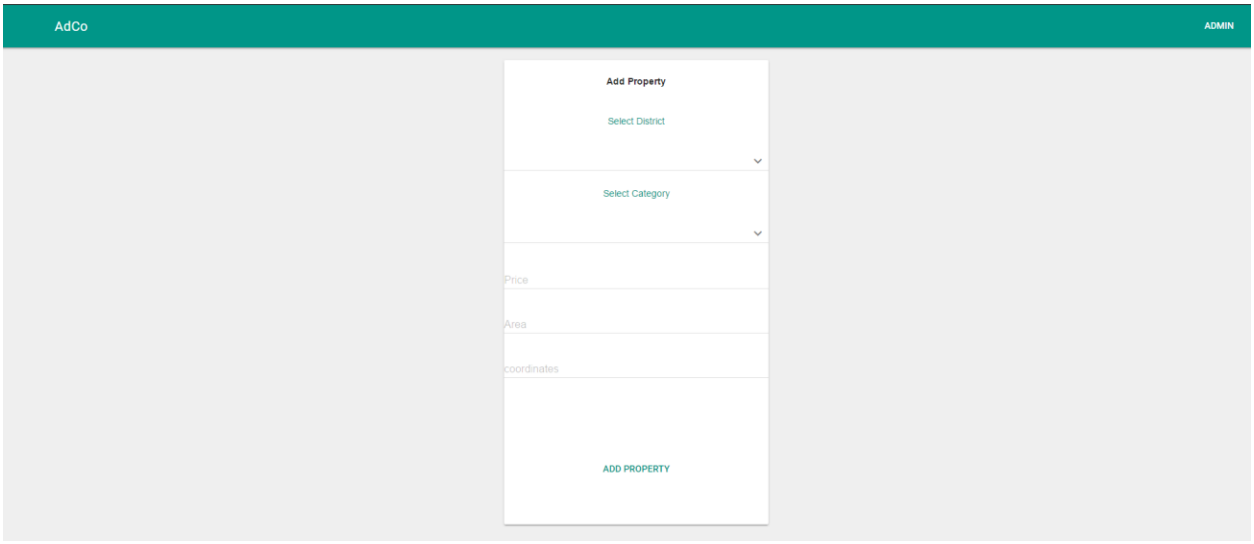
As noted, the delete property will only appear once the administrator is logged in.

The administrator also has the ability to remove users from the administrator console.



Once a button next to the user name is clicked, the record will be removed. Statistics such as how many users are on the system would also show up at a later date.

The administrator is also the only person who can add a property. A property can be added using the form accessed below. Once inputted, all the data is then processed and added to the database which can be immediately viewable to the general public.


AdCo
ADMIN
Add Property
Select District
Select Category
Price
Area
coordinates
ADD PROPERTY

```
<?php


session_start();


?>
<html>
<head>
      <title>adCo</title>
      <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="description" content="Welcome to adco.com.">
    <meta name="viewport" content="width=device-width, initial-
scale=1">
      <link rel="stylesheet" href="assets/material.min.css">
      <script src="assets/material.min.js"></script>
      <link rel="stylesheet"
href="https://fonts.googleapis.com/css?family=Roboto:regular,bold,ital
ic,thin,light,bolditalic,black,medium&amp;lang=en">
    <link rel="stylesheet"
href="https://fonts.googleapis.com/icon?family=Material+Icons">
      <script src="assets/select/getmdl-select.min.js"></script>
   <link rel="stylesheet" href="assets/select/getmdl-select.min.css">
   <style>
            .demo-card-square.mdl-card
            {
              width: 400px;
              height: 400px;
              margin:auto;
              margin-top:1%;


            }
            .demo-card-square > .mdl-card__title
            {
```

```
<?php


session_start();


?>
<html>
<head>
     <title>adCo</title>
     <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="description" content="Welcome to adco.com.">
    <meta name="viewport" content="width=device-width, initial-
scale=1">
     <link rel="stylesheet" href="assets/material.min.css">
     <script src="assets/material.min.js"></script>
     <link rel="stylesheet"
     href="https://fonts.googleapis.com/css?family=Roboto:regular,bold
,italic,thin,light,bolditalic,black,medium&amp;lang=en">
    <link rel="stylesheet"
href="https://fonts.googleapis.com/icon?family=Material+Icons">
     <script src="assets/select/getmdl-select.min.js"></script>
   <link rel="stylesheet" href="assets/select/getmdl-select.min.css">
   <link rel="stylesheet" href="assets/select/getmdl-select.min.css">
   <link rel="stylesheet" href="assets/star.css" />
   <style>
            .demo-card-square.mdl-card
            {
              width: 400px;
              height: 400px;
              margin:auto;
              margin-top:1%;
```

Conclusion

This project was hampered by the rash nature in which it was conducted. Due to time constraints that were suffered by the students and the lecturers alike. A firmer time frame released at a much earlier date would be a boon in the quest to make it easier for the next generation of students to make much better and more efficient systems. The system, though it may look simple on the surface was designed to be as simple for the front-end user as possible. The complexity of the product mainly lies in the backend of the project with many complex querying algorithms and code exist.

Lessons Learnt

During the development of this system, there were lessons learnt that will come into use in the future development of this product and other products in my professional line of work. Some of these lessons include

Time management: The management of time is possibly the most crucial lesson learnt especially on the estimation of timeframes. Timeframes can easily be changed with any inconvenience and better time estimates could be made to further improve the quality of the product.

Development methods and Technologies. In the development world, there are always newer and better ways of creating a product. The use of one technique might not always be the best idea as it may slow one down and even cause security risks. A little more research on what newer technologies exist and how to implement them is something that would definitely come in use when developing other systems.

Improvement and way forward.

No system is ever perfect and this system is no exception. Certain aspects of the system could have been made better by implementing technologies that were currently out of reach. New features that are currently buzzing such as artificial intelligence and machine learning can be used to improve the website by performing search queries that better match the users needs to the property that they are looking for. The use of SSL could have also been very useful for the security as encryption of data has become more and more important.