**Logo, company name

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**Computer Science**

**Pak-Austria Fachhochschule: Institute of Applied Sciences and Technology, Haripur, Pakistan**

**COMP-231L Database System Lab**

**Project Report**

**Submitted by:**

**Submitted to:**

**Prof. Dr Ghufran Ullah**

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**Instructor Signature**

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**Project Report**

**Property Management System**

# **Introduction of Online Property Management System**

 This is an era of computer and information technology. In this era, if you want to exist in the market, you have to use computers and information to provide the best services to the customer. Real Estate is the business of buying, selling, and renting land, buildings, and offices.

Every person wants his house should be best in a location with all facilities. Offices should be near to market and product unit near to raw material and marketplace. General companies concentrate on its product and infrastructure are bought from Real Estate companies. Due to competition in this industry, every real estate company wants to deliver the best service and makes its customer satisfied.

Online Property Management System is software that takes care of everything that a real estate company wants to do. Property Management System is developed for real estate Companies. It is very strong and easy to use that makes quick booking and account handling process. The real estate Property management system is web-based software, and you can access it from anywhere.

This ensures the service to the client 24X7. Clients can view and book their favorite property online just after few clicks. They can also pay the money online and get bills online.

## Modules of Online Property Management System:

There are several modules required to complete this system. Here we are discussing the main modules or core modules of the system.

### Admin Profile:

Admin profile is profiled which is assigned to a superuser having full access to the system. Admin module contains Admin Id, name, address, contact no. Admin can view the property details make changes if required, delete the property details. Check the payment status, view, and manage the client details. Any issue in the client’s details or in property details just reports to the admin.

### Client Profile:

The client profile is for those who want to buy, sell, or rent the property for their uses. Client profile contains Client id, name, address, contact details, etc. Clients can view the property. If it is available and the client is willing to buy or rent. They can pay online or offline.

### Property Details:

Property details hold the data about the property in property location, total value, owner, etc. The property gives an idea about the property which helps the clients to choose the property.

### Search Property:

There is a lot of property. Clients may be confused to search their desired property. Clients can search property using property types like residence, offices, faculty, and etc. Property can be searched by property status. Property can also be searched using property value and much more. If there is some legal problem with the property. Then it would be unavailable to rent or buy.

### Availability:

Searched property can be viewed as available or not. The client can book the property only if it is available. Sold property can be hidden from the page. This would decrease the conflict between buyers and sellers.

### Bid Property:

Once the property is searched and the client finds the desired property. This module helps the client to book the property. This module collects the information and checks the information from the backend. If data is verified then the client redirects to the payment page.

### Payment Details:

After filling in the booking details clients need to pay the money using cash/net banking/ATM card. The payment portal would use a payment gateway to clear payment. Once payment will clear receipt of payment will be generated automatically.

### Add/update/delete Users:

Only the admin can add, update, and delete the client details and others user details. Admin has special permission to do so. User authentication according to his/her role. This module takes care of every profile in our system. No user is allowed to use our system without a profile. Every profile has to authenticate using system procedure. This would ensure the security of our system.

### Add Rent Property Details:

Admin can add details of the landlord to every property. As it would help the clients to reach the landlord or owner directly only if the owner and client are ready to do so.

### Add Employees / Agents:

The real estate business needs a lot of manpower. This system would help to manage the manpower too. Admin can add employee details and their business associates.

## System Design of Online Property Management System:

The system basically needs very simple architecture. This is system is their main three users i.e. Admin, Manager, And Clients.

### Use Cases for Admin & Manager of Online Property Management System:

Property Management System has actor user (Admin and manager). These actors would manage the property management system and help the company to grow faster than previous. These users can log into the system using a user id and password. When security is verified, these users can make then change which needs to be the one in the system.

Users can manage property details. Admin can change the details of property if needed or if there are any changes. Search the property to recommend the clients. Search is based on property type, value, location, or status. The manager would manage the client’s details handle their query. The manager would also view the information of clients and if required can edit it too.

The manager and admin have the right to view payment details in the payment table. Any issue related to payment is forward to the user who has admin privileges. They will solve the payment problem.

### The Use Case for Clients of Online Property Management System:

Our second end-user is a client. Clients can log in to the system and verify their identities. Clients can view the listed property. Clients can also sort and save their favorite property to buy or rent. Clients need to verify their identity before they book any property. When their identity is verified, they can book and make the payment.

A system-generated receipt would send to their email. Our second end-user is a client. Clients can log in to the system and verify their identities. Clients can view the listed property. Clients can also sort and save their favorite property to buy or rent. Clients need to verify their identity before they book any property.

When their identity is verified, they can book and make the payment. A system-generated receipt would send to their email.

## User Interface (UI) of Online Property Management System:

The user interface is a very important part of the system. A good and user-friendly interface attracts the user toward it. Whereas a bad one makes the user experience bad and they never return to the system. As we have shown several use cases in this system have developed these interfaces to interact with the system.

### Login Page:

Admin or client need to log in using login id and password.

### Client Page:

Clients can view their details as well as property details.

### Property Page:

Every property detail would be available to this page.

### Rent Property Page:

The user can search the property available for rent.

### Booking Page:

This interface helps in the booking of property.

### Payment Page:

This interface helps in paying the money via several modes.

## Er-Diagram of Online Property Management System

There are mainly five entities Admin, Client, Property, Book, Payment.

**These five entities would manage the whole system:**

### Admin:

Admin is a superuser of the system. Admin has all right to view and modify the data in the system.

**Admin has the following attributes:**

#### Admin ID:

This is a numeric 14-digit number that is unique to every admin. Admin ID is the primary key to the admin table in the database.

#### Name:

This attribute would hold the name of admin. The name is a varchar type variable that holds the data length up to 250 characters.

#### Email ID:

This is an essential attribute of the table. Every admin must have a working email id to keep in contact with employees. This field has validation only email formatted values will be stored.

#### Contact No.:

This is multi-valued attributes which means every admin can have more the one mobile number in database.

#### Address:

This attribute would hold the address of the admin. Each employee must provide the address. Admin address is verified via the Human resource team.

### Client:

The client is the basic end-user of our system most of the business is done through them. Clients can buy, sell, or rent their property. Other clients can make use of this property. We are a middle layer to take care of smooth business.

**The client has the following attributes**:

#### Client ID:

This is a numeric 14-digit number that is unique to every Client. ClientID is the primary key to the client table in the database.

#### Name:

This attribute would hold the name of clients. The name is a varchar type variable that holds the data length up to 250 characters.

#### Contact No.:

This is multi-valued attributes which means every client can have more the one mobile number in database.

#### Address:

This attribute would hold the address of clients. The address of clients would help us to connect with them and visit the location. This would provide better services.

### Property:

The property table holds the complete information of the property. Our main business is property buying, selling, and renting. Therefore, this table needs to be secure.

**Property entity would have the following attributes**:

#### Property ID:

This is a numeric 14-digit number that is unique to every property. Property ID is the primary key to the property table in the database. Each property is uniquely identified using this id.

#### Owner ID:

This is a foreign key to the client table. The property owner is also our client. The owner field just holds the id of the client and the rest information is mapped with the client table.

#### Location:

This is attribute hold the property location. Based on the location value of the property is less or more. Clients can search the property based on this location. Location plays the main role in property dealing.

#### Status.:

This attribute would able to hold the data about the property’s current status such as sold, rented, or available for buying or renting.

#### Total value:

This attribute would help to get the information on the property. The total value of the property is calculated based on location, area, type of property, etc.

### Book:

The booking Entity would take care of all bookings done by clients. Once any property is booked. A notification is sent to the owner as well as the buyer. This entity is also important, because in the future if we need any proof for any property. This would help us.

**There are following attributes**:

#### Book ID:

This is the primary key to the book table. Every record in the table has a unique Book ID. Booking can be uniquely identified using this ID.

#### Property ID:

This is a foreign key to Property Entity. Using this attribute, we can find the property details.

#### Owner ID:

This is a foreign key to Client Entity. Using this attribute, we can find the owner details.

#### ClientID:

This is a foreign key to Client Entity. Using this attribute, we can find the client details.

### Payment:

Every business is for money-making. Whenever it comes to money, we should make that our client’s money would be safe. In this, Entity every single transaction is recorded in the database. Our company would use a safe and secure payment gateway to clear the payment.

**Following are the attributes**:

#### Payment ID:

Payment ID is the primary key to the payment Entity. Every payment is uniquely identified using this ID or attribute. This is also a 14-digit natural number.

#### Book ID:

This is a foreign key to book entity. Every booking is redirected to the payment page. It carries a booking ID that would update the payment status in the book table.

#### Transaction Reference No.:

This is an attribute used to hold the transaction reference number provided by Payment Gateway Bank. Any issue with payment would be resolved using this number.

## Requirements of Online Property Management System:

**There are two types of requirements of the system in any system, these are:**

### Functional Requirement of Online Property Management System:

#### Registration:

Users can register themself in the system. Admin will verify their profile to work properly. Once a user is registered with the system. He/she can register his/her property-to-Property Management System. Admin will view the property and verify that property only if that would be real with a reasonable price.

#### Validation:

Validation is very important in the system. Invalid data can corrupt the valid data. So, we need to apply validation in each module. Validation would ensure the safety and security of data.

#### Client Record:

Client data should be secure. We should take care of clients’ data privacy in our minds. The client is the basic unit of our business. Client data and records would help us to provide them better information.

#### Add Property:

This function allows the admin and client to add the property details. But only the admin can verify the property details. Without verification property, details would not reflect in the system.

#### List of Property with details:

All properties should be listed and reflected client. The client can view these listed properties and book the desired property.

#### Payment options:

Clients can pay the money or property via any mode they wish to do. They can pay via cash, credit cards, debit cards, online net banking, online wallets, etc. The system should not restrict them to some payment option.

#### Feedback and Suggestion:

Feedback and suggestions are key to improve in business. Therefore, we need to take the feedback from our customers to improve our services.

### Non-Functional Requirement of Online Property Management System:

#### Improve Search option:

The search option should be rich enough to provide the property details to clients as per their requirements and wish. The search option should search in the whole database. Efficient search option attracts the client to buy and rent the property.

#### Support Multi-User:

Nowadays, every system work in an environment of multi-users. As per the requirement of the system, our system is developed in a multi-user environment.

## Design Data Dictionary for Er-Diagram of Online Property Management System:

The data dictionary is useful in case of development.

**Table Name:** Admin Master

**Primary Key:** Admin ID

**Description:** To store the details of admin

Table

Description automatically generated

**Table Name:** Client Master

**Primary Key:** Client ID

**Description:** To store the details of Clients

Table

Description automatically generated

**Table Name:** Property Master

**Primary Key:** Property ID

**Description:** To store the details of Property

Graphical user interface, text, application

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**Table Name:** Book Master

**Primary Key:** Book ID

**Description:** To store the details of Booking details

Graphical user interface, application

Description automatically generated

**Table Name:** Payment Master

**Primary Key:** Payment ID

**Description:** To store the details of Payment details

Table

Description automatically generated

## Conclusion of Online Property Management System:

Finally, in the Online property management system, we have developed a secure, user-friendly Property Management System. This system is capable of taking care of each work that needs to be done in the real estate business. The client can log in using a user id and password. This means the unauthorized user cannot enter into the system making it secure. Searching for property help to find their desire property fast.

Online payment and verification make it more client friend. This system would definitely go to reduce labor and make business more profitable and promising to clients.