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| Capstone Project Document |

**Real Estate Website Management**

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| **<SWR302\_EstateLux>** | |
| **Group Members** | Ha Pham Cuong  Ha Van Quang  Nguyen Thanh Long  Hoang Duc Truong  Nguyen Trong Duy An |
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MINISTRY OF EDUCATION AND TRAINING

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Last but not least, we would like to thank FPT University for giving us this precious opportunity to constantly study and improve ourselves. What we learned through this project will be the basis for us to work well after graduation.

**Definition and Acronyms**

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| **Acronym** | **Definition** |
| BA | Business Analysis |
| BR | Business Rule |
| ERD | Entity Relationship Diagram |
| GUI | Graphical User Interface |
| PM | Project Manager |
| SDD | Software Design Description |
| SPM P | Software Project Management Plan |
| SRS | Software Requirement Specification |
| UAT | User Acceptance Test |
| UC | Use Case |
| API | Application Program Interface |
| IOT | Internet of things |

1. **Project Introduction**
   1. **Overview**
   2. Project Information

* Project name: **Real Estate Website Management**
* Project code: **Real-Estate**
* Project group name: **SWR302\_EstateLux**
* Product type: Software Project Management Plan, Website and Mobile Application.
  1. Project Team

1. Supervisor

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1. Team Members

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## 

## Product Background

2021 is considered a promising year for the real estate market with the supply continuing to increase strongly, housing prices are forecasted to increase by 10-15%. Bright market forecasts are a lever for businesses to confidently set big plans for the coming period. In the context of strong supply, real estate businesses have taken advantage of opportunities to promote, brand, and make business plans in 2021. That's why our team wants to build and develop real estate websites to have Can help businesses promote business activities, introduce project proposals to customers, carry out branding Marketing, reach customers anytime, anywhere, is an information channel that helps you easily call for investment.

## Existing Systems

* 1. Mobile application

This software can be downloaded on Google Play, in the future we can develop on the App Store. Mobile application to be used by customers. If the user is a new user, they

can register for an account through the app and login. From the application:

+ Regarding the seller:

• Users can promote apartments, condominiums, premises for sale or lease on EstateLux by registering an account and managing, tracking their real estate status, fixing or deleting their apartments on the spot right on the app.

+ On the buyer side:

• User can search, view all information apartments, apartments, premises, on the app (area, location, sale price, rental or sale status).

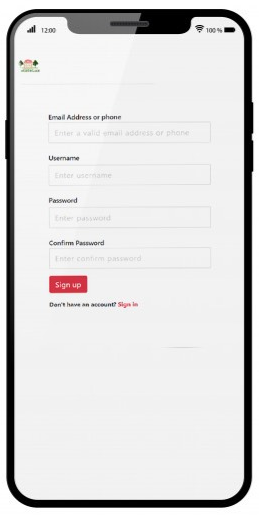
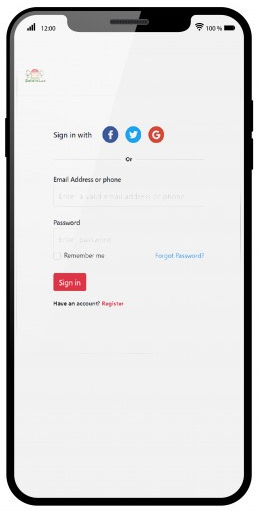
 

Figure . Sign in with EstateLux App in Iphone 12

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| ***Advantages*** | ***Disadvantages*** |
| GUI is user-friendly, support language: Vietnamese. | Available IOS and Android |
| Freeware, public on Google Play and Appstore | Need internet to take notification |
| Handy, simple, easy to use anytime, anywhere |  |

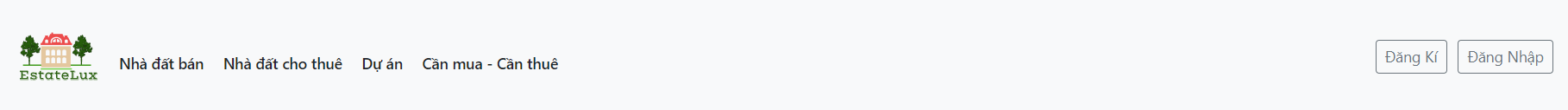
* 1. Web application

This software is published publicly on the Internet and it is free software. It covers the business aspects of a real estate company and based on the needs of the current real estate market such as: helping the business to promote its business, introducing project proposals to guests. branding, promoting the brand, reaching customers anytime, anywhere, is an information channel that helps you easily call for investment, moreover this software can help buyers easily find a house or share.

This software only supports remote access and all data is stored on the server. The server uses Database-as-a-Service (MySQL), bringing many benefits such as Security, High availability, and less

configuration. It is a good choice and an example we consider using MySQL.

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| ***Advantages*** | ***Disadvantages*** |
| GUI is user-friendly, support language: Vietnamese | Only support remote access (Web), (Mobile App) no support for offline use (Desktop apps) |
| Website’s staff will on the website 24/7 | Only support via hotline, facebook not via zalo, etc… |
| As long as the internet is available, it can be accessed at anytime. | Low security, easy to attack by hackers |



Graphical user interface

Description automatically generated Graphical user interface, text, application

Description automatically generated

Figure .Login interface of EstateLux

* 1. Backend system

Backend system is made based on Spring MVC. Using hibernate, JPA connect to MySQL database, support security.

Frontend system is made base MVC and use another library and with HTML, CSS, Javascript.

## Business Opportunity

In 2020, two outbreaks of COVID-19 broke out in our country, causing serious impacts on the economy, and the domestic real estate market is no exception. Challenges posed by the COVID-19 pandemic as well as a slowdown in economic growth caused demand decline, directly affecting Vietnam's real estate market.

This takes place in markets such as Ho Chi Minh City and Hanoi with great demand for the housing segment, especially the affordable and mid-end apartment segments ..., greatly affecting the overall market situation. It is an imbalance in real estate products supplied in the market with a large but unmet housing demand for low, middle and low income earners. It is also the inadequacy of the price level of real estate products when they continue to be anchored at high levels despite the market's difficulties; This is especially noticeable in 2020 when the COVID-19 epidemic continues to have complicated developments.

Recorded in 2020 by the Vietnam Real Estate Brokerage Association shows that by the end of the third quarter, nearly 80,000 products were offered for sale on the market, of which 70% of inventories were from previous years. New supply in the first 3 quarters of 2020 only reached over 20,000 new products for the first time on the market. In particular, the apartment product - mid-end segment accounts for the largest proportion of about 75%, the affordable segment (the whole country combined) is about 10%, the high-end segment accounts for 14% of the supply to the market in in 2019. In the transaction, for the mid-end product line, it is still the condominium product line with the price of 25-35 million VND / m2 with the highest transaction, accounting for 75%. High-end products with high prices, over 50 million / m2, especially in Hanoi, have the lowest transaction volume, only 5%. Undeniably in the 21st century, with the development of science and technology, the real estate market has become extremely convenient and easily accessible.

The market is increasingly rich and diverse with many types of rental models, or sale of apartments, apartments, land. Their common point is that with the seller - buyer model, customers can easily find out full information about the product as well as obtain information of the seller. A customer can buy an apartment and then lease it to someone else, or a student can rent an apartment and look for other people to live with to reduce their rent.

Therefore, the management system as well as the consolidation of the real estate market also becomes extremely complex. That is the reason that we have created Real Estate Website Management with the desire to create a website that accurately synthesizes real estate projects and attracts customers.

Our team believes our system will have an upper hand over others, and it will make a difference that can attract customers:

- The easy-to-use interface can be suitable for many types of customers, with many features and utilities.

- Online working system. There will always be a website manager operating 24/7 ready to answer questions or handle customer requests

- The system will always update information on real estate projects quickly and accurately. Smartphone application development: This is very convenient and very effective when you can quickly check information, when receiving a new notification will immediately show up on your phone. avoid missing information. - Besides, we have a team of collaborators everywhere to help check and confirm information about real estate projects announced on the Website.

## Software Product Vision

Real Estate Website Management was built up to be a website specializing in introducing real estate projects that are being delivered for sale or lease to customers.

Our target customers here are included sellers and buyers. The sellers are businesses, companies or individuals wishing to sell or sublease their real estate such as: apartments, apartments, villas, houses or land. Buyers are those who want to find out information about real estate projects to buy or rent.

Here Real Estate Website Management will summarize available real estate projects to include details about the project and information of the seller. Buyers can find out and review the information on the website and can contact us to answer questions or handle requests based on customers' wishes. Besides, the buyer can contact the seller directly to find out more details as well as discuss the purchase - sale contract.

The seller is required to register an account with his personal information before he wants to post information about the real estate project he wants to lease-sell. The seller can update the project information as well as communicate directly with the buyer.

## Project Scope & Limitations.

6.1 Major Features

* Mobile application:
  + Role: Customer
    - Allows users to view and change personal information
    - Allows users to monitor device information such as: property price, area, location, photos, bedrooms , phone , …
    - Sort by area , price and the purpose (rent or buy )
    - Contact with EstateLux via realtime message (24/7)
    - Send a request to the host for the host to contact again via email or phone
    - Search estate
    - Change to the phone call app to call directly to the host
  + Role: Host
    - Allows host to manage list estate information that belongs to your data
    - Allows Store to add new estate and information of estate
    - Allows host to view and change personal information
    - Match contact between customer and host via email or phone
* Web application
  + Role: Host

Allows Store to manage list user information that belongs to your store

* + - Allows Store to manage list contract information that belongs to your store
    - Allows Store to manage list broken device information that belongs to your store
    - Allows Store to view map show location of devices and it’s status
  + Role: Admin
    - Allows Admin to manage list store.
    - Allows Admin to manage list user information in each store
    - Allows Admin to manage list contract information in each store
    - Allows Admin to manage list all broken device information
    - Allows Admin to view map show location of devices and it’s status