Project Brief

Property Pricer

Document Information

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Approval

Date	Name and Signature
26/02/2021	Jason Quinlan
26/02/2021	Hassan Tariq
26/02/2021	Kevin Mukuna
26/02/2021	Killian O Driscoll
26/02/2021	Kieran O Sullivan
26/02/2021	Kiu Man Yeung

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Introduction

Currently there are many applications out there that advertise real estate and properties, for example daft.ie. Although these applications allow users to make informed decisions through a mixture of innovative product features and in-depth quarterly market analysis, as well as allowing users to select and filter different search results, there does not seem to be a system out there that accurately predicts the price of the property. By analysing the data provided by the user we hope to provide an accurate price prediction model, which will not only give an estimate of the value of the property at the time of posting but will also show how that price might change over time. We believe that this is an important feature that customers should be aware of, to let them know the value of what they are purchasing as well as what the value will be in the future and this is the selling point of our product. By developing this application, we wish to expand on the existing products that are out there by implementing a prediction model using AI and machine learning algorithms, as well as presenting them using a graphical interface.

The project will make use of some if not all the components we have learned thus far:

- Security (Authentication, Integrity, validation of data)
- Http Protocol
- Python Programming and Django framework
- Web Programming (HTML, CSS, jQuery, JS, any other relevant languages/libraries that will be added as progress)
- If we have sufficient time, we could migrate our product to the cloud (e.g., AWS)
- Optimization and speed

Definition

Background:	Given the current situation in the world and how it's affecting the economy, property prices are quite volatile, and it can be hard for a seller to get an idea of how much their property is actually worth. Providing a simple, accurate prediction of how much their property is worth will be of great value to our users.
Main Goal:	Our main goal is to build a web application that advertises property and uses a prediction model to give accurate prices of property, allowing customers and real estate agents to make informed decisions easily.
Desired Outcomes:	The desired outcome is to create an application that is easily accessible and beneficial to users, advancing our skills in the process. We want to make sure we deliver a quality product that works as promised

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Constraints and Assumptions:	Time constraint, lack of group work experience, lack of resources, working remotely. Assumption made would be that the data will need to be real and accurate as possible to make accurate predictions.
Interfaces:	No other prior experience of developing a similar product before, although some group members have experience of developing web applications.
Project Approach:	In-house based on the different skill sets of group members and by assigning roles to each member while having meetings and updating the product owner regularly.
Project Product Description:	The product is a web application that will advertise property and come up with accurate prices using a prediction model. The web application will allow users to register and create an account to allow easy access of data and allow users to post on their profiles. Users can delete and edit their posts as they wish. Posts can be archived before deleting them. A range of products will be displayed on the home page for people to see without having to login or register. If we have time, we can add additional features on the side that show news posts and other announcements etc. For example, Mr. Quinlan has a land of x acres and he wishes to sell it. He can post about it on the web application. The goal will be to use the data provided by Mr. Quinlan, and our pre-defined matrix in the backend and compare the prices with already existing objects to analyse what the value of the property is currently and what it will be in the future. This will be represented with a graphical user interface showing changes throughout. Example factors affecting the prices of the property will be inflation, deflation in the market and various attributes of the property, such as size, number of rooms etc.

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Key Stakeholders

Major Stakeholder	Notes
Jason Quinlan	Product Owner
Hassan Tariq	
Killian O’ Driscoll	
Kevin Mukuna	
Kieran O’ Sullivan	
Kiu Man Yeung	

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Project Objectives

	Target	Tolerance
Scope	Functions include: ○ Creating an account by registering ○ Graphical user interface ○ Using chart.js to represent charts for price ranges ○ Posts visible on home page without having to login or register ○ Accurate price predictions ○ Allow users to delete and edit their posts ○ Archive posts before deleting them ○ Authentication for user registration ○ Automate the web application using a .sh script ○ Multiple picture uploads in a gallery format	
Time	8 Weeks	
Cost	Time: 20 Hours a week Computing Power Storage: Cloud costs + databases to store property information	

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Quality	Functional, Operational, Competitive	
Risks	Not finishing the development of the application due to time constraint	
Benefits	Provide the customer and real estate agent with better experience when searching for property and its value	Provide reliability to the customer as costs are accurate relative to the market

Moscow Prioritization:

What our product must have:

- ✓ Users must be able to register an account and login
- ✓ Users must be able to upload a post/s of their property
- There must a price prediction model with a graphical representation
- The prediction model must be able to predict current and future price of property
- ✓ Ability for users to edit and delete their posts.
- ✓ When user registers they get authentication link to their email

What our product should have:

- ✓ Users should be able to customize their profile and upload profile picture etc.
- Users should be able to search and filter properties by various attributes
- ✓ A .sh script to automate the execution tasks

What our product could have:

- Chat/messaging system for users to communicate with each other, inquire about posts etc.
- A separate section for properties for rent rather than sale
- ✓ Data visualization represented with a dashboard that will allow users to understand the analytics

What our product will not have:

- Our site will be limited to property only; users will not be able to buy/sell anything else
- Addresses will be limited; the property listed will only be limited to Ireland

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Project Management Team

Role	Description	Appointee(s)
Product owner	Responsible for overseeing the development of the project, checking in weekly in scrum meeting.	Jason Quinlan
Front end developer	Organizing the layout of the site and add multiple images in gallery format. Work on the about page.	Katy Yeung
Backend developer	Implementing price prediction model & graph representation of price over time using chart.js, validating and storing user data.	Kieran O'Sullivan & Kevin Mukuna
Documentation	Maintaining & updating product documentation (e.g., product brief), organising work using pivotal tracker, testing current build. Draw the architecture diagram and update the brief. Assist with the prediction model and the about page/user guide. Add additional diagrams and have version 2.0	Hassan Tariq & Killian O'Driscoll

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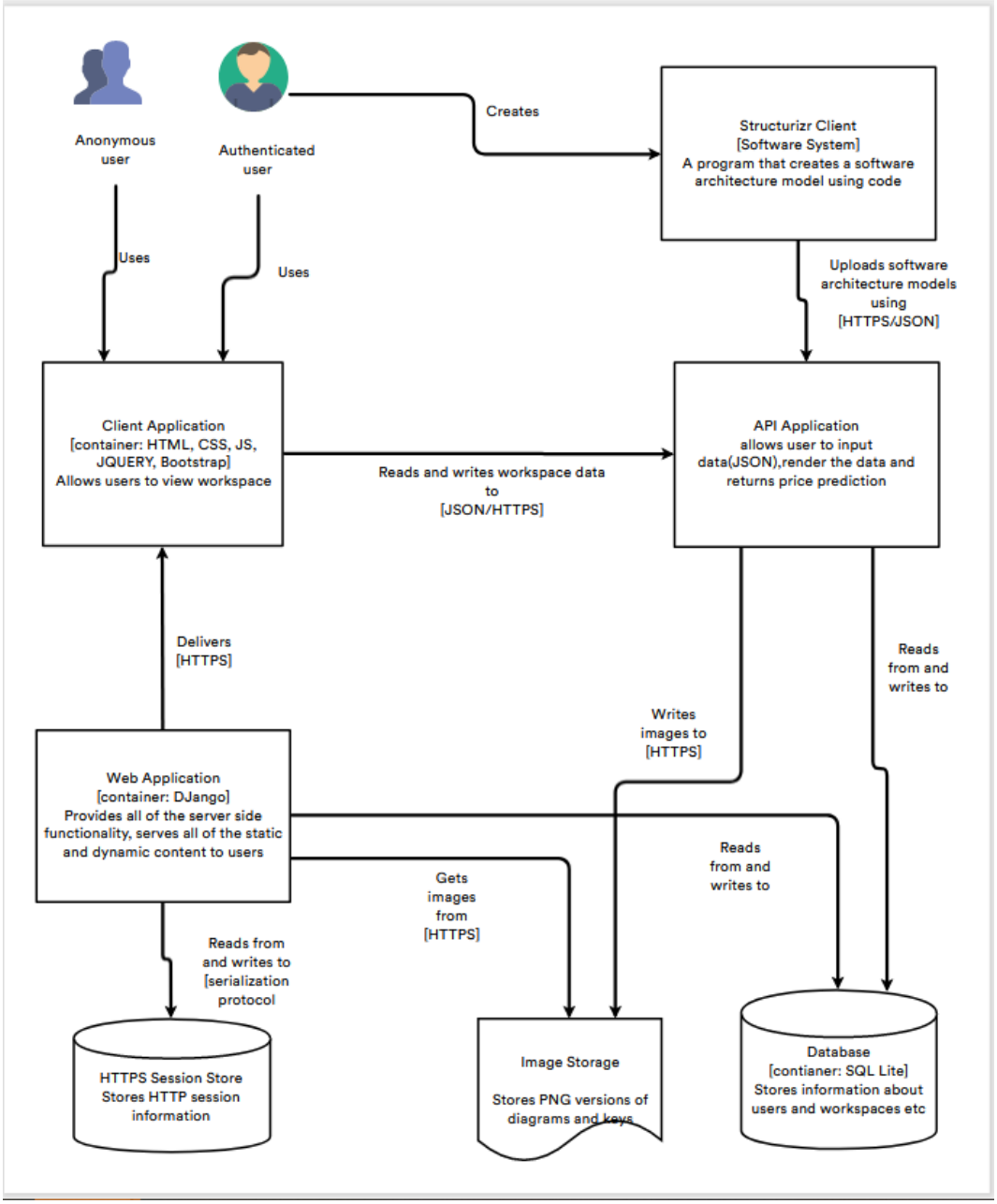
Architecture Diagram:



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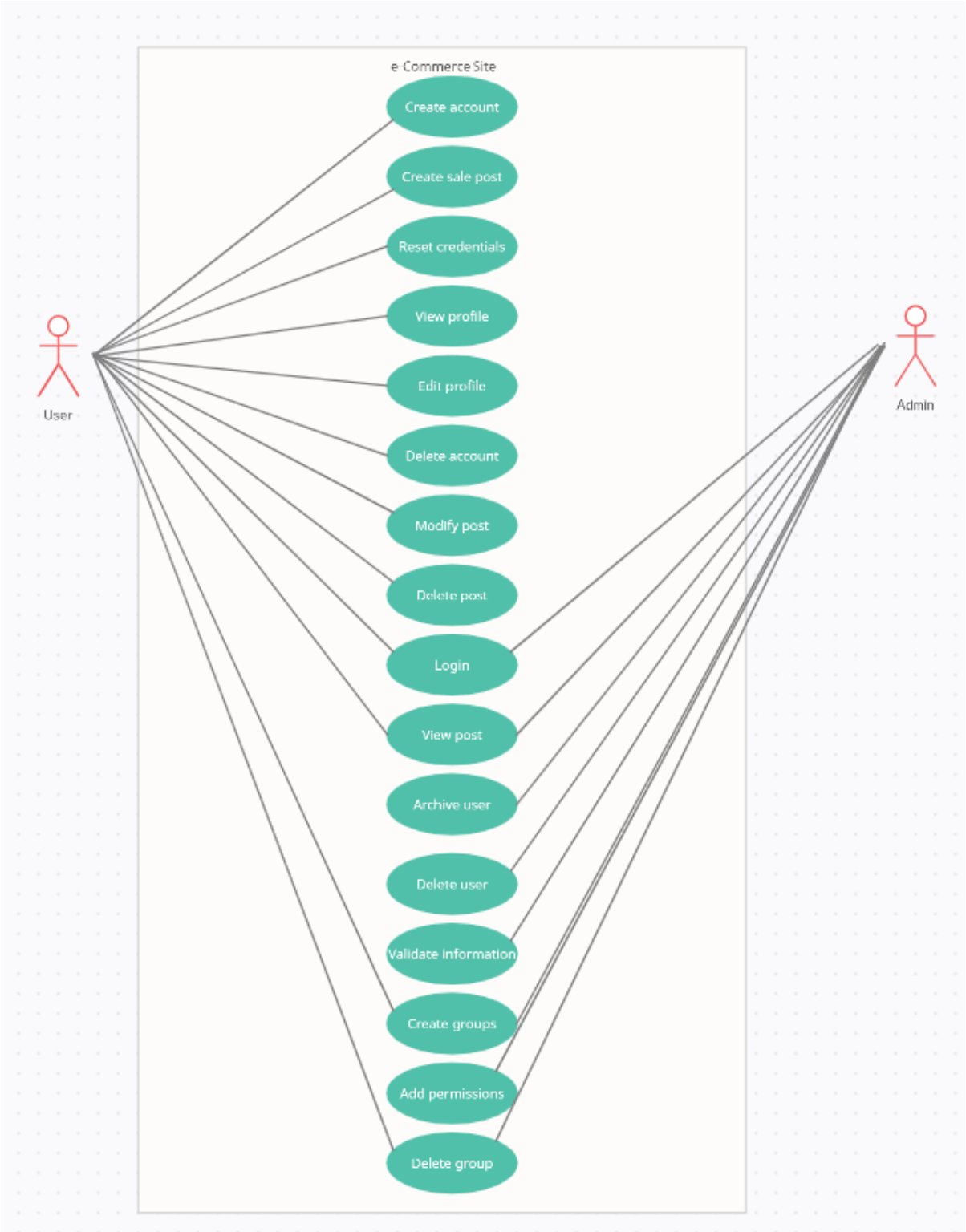
Use Case Diagram



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Weekly Gantt Chart