

Project Brief

Document Information

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Approval

Date	Name and Signature
	Jason Quinlan
	Hassan Tariq
	Kevin Mukuna
	Killian O Driscoll
	Kieran O Sullivan
	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:	Main goal is to build a web application that advertises houses and uses a prediction model to predict accurate prices of property based on the value of the property that can be used by 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. Making sure we deliver what is 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:	<p>The product is a web application that will advertise property and predict 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.</p> <p>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 the various attributes of the property.</p>

Key Stakeholders

Major Stakeholder	Notes
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Jason Quinlan	Product Owner
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Hassan Tariq

Killian O' Driscoll

Kevin Mukuna

Kieran O' Sullivan

Kiu Man Yeung

Project Objectives

	Target	Tolerance
Scope	Functions include: <ul style="list-style-type: none">○ 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	
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 <i>must</i> have:	Users must be able to register an account, login, post properties for sale. Price prediction model must display the predicted price of a listed property over time with a graph.
What our product <i>should</i> have:	Users should be able to customize their profile, upload profile pictures etc. Users should be able to search/filter posts to find those that are relevant to them.
What our product <i>could</i> have:	Chat/messaging system for users to communicate with each other, inquire about posts etc. Potentially a separate section for users to list property for rent rather than for sale.
What our product will <i>not</i> have:	Our site will be limited to property only; users will not be able to buy/sell anything else. Addresses will be limited, users can only buy/sell property in 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, adding necessary pages & passing data to the backend.	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 pivotaltracker, testing current build.	Hassan Tariq & Killian O'Driscoll