

House price predictor (GhorbariBechaKena.com)



Project Members:

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Motivation

There are many e-commerce websites to post Advertisements to sell or buy products (bikroy.com, ebazar.evaly.com.bd). Recently bikroy.com become a paid website (you need to pay, for post-Advertise).

There is no dedicated free E-commerce website to post advertisements about houses, lands, apartments (in Dhaka city). On the other hand, selling the land or flat through a broker also not financially efficient for both sides, buyer and seller. So, it is difficult for the people of Dhaka city, to buy or sell, a flat or land at a good price.

Here a dedicated website may solve the problem.

Furthermore, often a person who newly thinking to buy a flat, do not have the proper idea about pricing. So, a flat price predicting system with this dedicated website may help that person.

Objective

We will build a proper, Dedicated, free E-commerce website for the people of Dhaka city, where they will able to post advertisements about lands, flats, and apartments. Also, we will provide a machine learning-based flat price predicting system where people will able to predict the price of a flat based on some inputs.

Critical Challenges

Choosing an appropriate, and Feasible machine learning model for the predicting system. Collecting enough data to train our machine-learning model to predict the price of a flat based on the inputs.

Mapping among PS, COs, and POS:

Ps	Attribute	How Ps are addressed through the project
P1	Depth of Knowledge Requirement	Knowledge of engineering practice (django2.2, joblib) in the practice areas in the engineering discipline. (k6) Here we using depth knowledge of Html5, css3, python3. (k5)

		Data collection from bikroy.com, ebazar.evaly.com.bd, own experience, etc.(k7) Knowledge of software engineering(unit testing). (k3)
P2	Range of Conflicting Requirement	For this project, the requirement is to set a machine learning model to predict the apartment price in Dhaka city. Here, we have to select the most feasible model. But, there is no such data set for that. There are some data sets for New York City and other big cities. So, to build this we need to analyze the existing data and try to collect data accordingly for the model. At first, we thinking to add 4 parameters to the data set. But later we found that we should include more parameters. By analyzing more, it may require adding more parameters. Based on the scenario of the economy of the country the data set may become backdated then the model may struggle to give a proper prediction.
P3	Depth of Analysis Required (No obvious solution)	Depth of analysis is required to select the parameters in the dataset, to have a good prediction system. We used 7 parameters instead of 4,5 or 6. Depth of analysis is required to select the most feasible machine learning model. We used Multivariable-Linear-Regression-model instead of single-variable -Linear-Regression-model. Used django2.2 to make whole website instead of node.js or java
P4	Familiarity of Issues	To predict any apartment price properly all over Dhaka City. But it is so difficult to collect that much data for that.
P5	Outside Problems	Obstructing Unauthorized access by activating multilayer varification.
P7	Interdependence	Here the e-commerce is an independent module or part of the project. And The predicting system is another module or part of the project.

Addressing complex Activities (As) through the project:

As	Attribute	How As are Addressed through the project
A1	Range of resources	In the development stage: the project requires the use of diverse resources including different type of information's: djago2.2 framework, Technologies: joblib, pythonanywhere(web-hosting site) People: developers. Hardware: Computers

A2	Level of interaction	As it is an E-commerce site, a large number of people may interact with the system. So, the system(database, backend) must capable enough to handle that situation.
A4	Consequences for society and the environment	this application could be like other e-commerce web apps. The website will provide easy to use buy-and-sell platform. It will help the people of society to become economically benefited by buying or selling houses, apartments, lands at competitive prices.
A5	Familiarity	The project deals with security. (as it is having data of users)

Co-Po mapping for this Project:

CO	CO(Project) Statements	Corresponding POs (Appendix-1)
CO1	Use of Django, use of machine learning model with Django, data collection	1,2,3,12
CO2	Use industrial state of the practice of hosting the website on the hosting site.	4
CO3	Use a modern/popular IDE (Pycharm)	5
CO4	Understand the concept of professional ethics, confidentiality, industrial standards, risk-benefit analysis, and explain the impact of engineering solutions on social safety, data safety, and welfare.	6,7,8
CO5	Maintain distributed and collaborative software development, maintenance.	9,10,11

Appendix-1:

Washington Accord Program Outcomes (PO) for engineering programs:

No.	PO	Differentiating Characteristic
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1	Engineering Knowledge	Breadth and depth of education and type of knowledge, both theoretical and practical
2	Problem Analysis	Complexity of analysis
3	Design/ development of solutions	Breadth and uniqueness of engineering problems i.e. the extent to which problems are original and to which solutions have previously been identified or codified
4	Investigation	Breadth and depth of investigation and experimentation
5	Modern Tool Usage	Level of understanding of the appropriateness of the tool
6	The Engineer and Society	Level of knowledge and responsibility
7	Environment and Sustainability	Type of solutions.
8	Ethics	Understanding and level of practice
9	Individual and Teamwork	Role in and diversity of the team
10	Communication	Level of communication according to type of activities performed
11	Project Management and Finance	Level of management required for differing types of activity
12	Lifelong learning	Preparation for and depth of Continuing learning.