**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 |
| 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. |