1

Online Barter Market

Lonesome Codeboys

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1.   Problem Definition and Background Information

Before the invention of the internet and mobile phones, when people want to reach a person or a friend, they have to see him/her and talk with them. Also, in those days, if people want to buy things, they would have to go to shops and buy things which they need. By the invention of the internet and mobile phones, people do not need to see the person who they want to talk with. They can send an email or make a phone call. These technologies have changed our lives a lot. For instance, today, we can reach our friends easily via internet or what information we need even if it is about the far corner of the world via internet. It proves that internet has become very important for us today.

Another effect of the internet and technology is online shopping. We have started to use online shops a lot in the last years. Nowadays, online marketing has become a large business. There are so many websites that provide us with a tool that can ease our need to purchase everything from everywhere through online. For instance, clothes that are originally made from Italy can be bought by just one click and will be directly sent to your house. Sometimes, it offers you with free shipping too so that you only have to pay for the product that you purchase. However, all these kinds of website use cash or money for purchasing the product. How about people who are short of money or they cannot afford to buy the goods that they need but they have something that can be exchanged.

Barter is a system of exchange by which goods are directly exchanged for other goods without using medium of exchange, such as money. This kind of system has never been found in electronic form like those websites we described before. That's why, we come up with the idea to build a web base application that specially used in order to help people to exchange their belonging with someone else. For instance, people generally have goods that are not used anymore. Instead of selling it or throwing it up, they can use this website to exchange it with another person who might need it and get something that might be useful for them.

Furthermore, barter system also could help people who are short of money or maybe does not have money at all who need some goods from other people, of course by exchanging their belonging. We can found this kind of people in cities and regions facing economic decline where people get too poor to have money.

Agriculture and plantation area can also get the benefit by using barter method. Farmers generally do not plant everything on their field. Instead, they plant crops that are suitable with the condition of their field like the temperature, soil condition and so on that makes them only harvest a few kinds of crops on the harvest moon. The harvest generally produce excessive amount of crops that need to be distribute soon because it can get rot. Therefore, instead of selling those corps they can use barter method to exchange some of their crops with another crop that make it easy to distribute and the farmer could get other crops that they don't have.

According to Turkish Statistical Institute, 16.3 percent of Turkish people are under the hunger limit of food and main needs **[1]**. With few jobs and no disposable income, bartering and other ways of exchanging goods and services are increasingly seen as good alternatives. It forces them to build a market where they can trade what they have to get what they want without money involved. Albert Canigurel, editor of ConsumoColaborativo.com, state that "the main reason why people start using these sites (barter system) is economic, whether it is to save money, make money or get goods or services without money" **[2]**.

There are some online barter markets especially in US. With these websites people can borrow or exchange items for free. However, bartering system is not common like online shops so that their usage and creativity level is not as good as that people want. Categorization and searching with location information system could be more practical and easy to use. We want to make a online barter shop that will be easy to use and practical.

2.   Significance of the Problem and Motivation

There are many successful online shopping websites so that we can buy any product via internet.   People can use them easily for buying different types of products. On the other hand, online barter market idea is not very common today. Before the invention of money, old people bartered things with each other. However, after the invention of money, people bought products with money and barter lost its popularity. Nowadays, bartering especially online has started to become popular again because people realized that bartering has many advantages.

There are a few online barter market websites. In Turkey, there is no online barter market. We, as a team, think that Turkey needs a good and practical online barter market. We think that people's consumption has increased during the last years and online markets increases our consumptions because they are very practical so that we can buy a product in a minute with a credit card. Even though buying items with credit cards is an easy task, paying the credit cards is a difficult task. Online shops are very useful for people, but actually people do not spend money in the online barter market. They exchange their items with his neighbors and friends or borrow products from for free. They use their unused or unnecessary items for taking necessary items for them. By this method, both parts benefits from the online barter market.

Because Turkish people are known as very helpful to each other by the other nations, this shows that online barter market idea is suitable for our country; we do not have such a system with location information and we need one. There are many online shops in our country, which proves that we have this kind of web technology but we, Turkish people, have not realized the benefits of bartering yet.

An online barter market should be practical and easy to use. Some existing barter market websites are a little complicated such as categorization is insufficient. All people should be able to use the barter market easily.

If we, as a team, will manage to develop an online barter market, we want to publish it so that many people in our country will benefit from this market. Below list will be the benefits of our online barter market;

- The bartering system is devoid of the complex problems of the modern monetary system. **[3]**
- Personal and natural resources are ideally utilized to meet the needs of the society without involving any wastage.
- The bartering system is flexible, that is the user can trade on related product for another. For instance, the user of our market can trade a laptop for a tablet or for completely different items.
- It makes idle resources usable.
- With bartering, people can save their money and it improves individual's economy.
- Users can exchange their product with another product or they can borrow items for free.
- This system is completely free of charge because it never uses money or credit cards.
- It decreases wasting the products with making them usable for others
- In our market, categorization will be very good in order to make users find what they need easily.
- Users can see the items on the map. By this feature, they can find the needed items closest to them.
- Online barter system will eliminate additional advertising and deep discounts
- It increases the relations between friends and neighbors.

3.   Draft Project Plan

Our project is designing an online barter market application. We will create a web based application which uses an item database to keep the record of the items to be shared and our web program will access the database through a web server in order to change some attributes of the items. For example, "Is it shared already? " Which category is suitable for that item? What is the item number?" etc. Also, our application locates IP addresses of PCs or gets geospatial information from elsewhere and will direct you to relevant city or neighborhood to share/get items. In addition, you can keep track of the items by using neighbor maps. Every user will have a profile and rating mechanism which will be confirmed by all users. You will need to sign up to use the application.

The end product will be an online barter shop website that is people can reach it easily. After going online with a web browser by signing up, people who want to share their goods or people who need some goods will use this application.

Distribution of tasks among project members is;

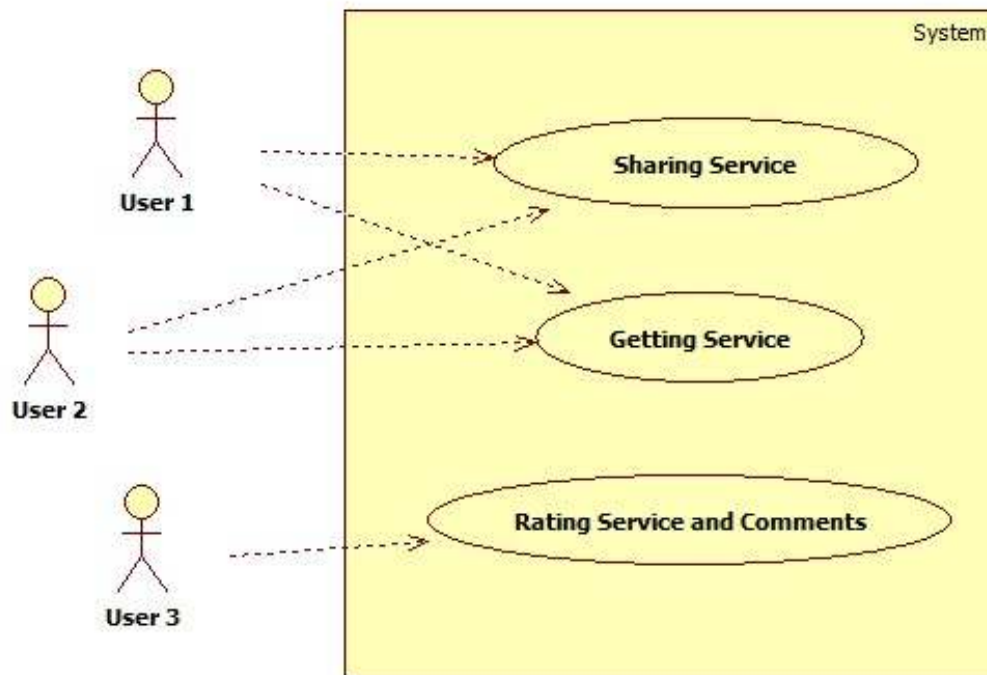|	
Ali Can BATUR	Responsible for designing and testing part of background application program
Emre DENİZ	Responsible for designing and testing part of database transactions
İsmail Sarp DİKKAYA	Responsible for designing and testing user interface part of the application
Donny Irawan BULHADIE	Responsible for designing and testing user interface part of the application

3.1   Use Case Diagram

Figure 1: Use case diagram

        The system basically will consist of two functionalities which are sharing a good from the neighborhood or getting an item you need from the neighborhood. Sharing service will run if a user wants to share stuff with its neighbors. Then, sharing service will add this item to item table in the database and will label it. Getting service will run if someone needs a good. Service will search the database for the item, considering geospatial indexing and return the result to the user. User1 and User2 here represent the people who use the application, as it can be seen from the diagram that any user can use getting or sharing services at the same time. Apart from these, another user called User3 in the diagram can use the system by rating other uses for a valuable feedback of the system.
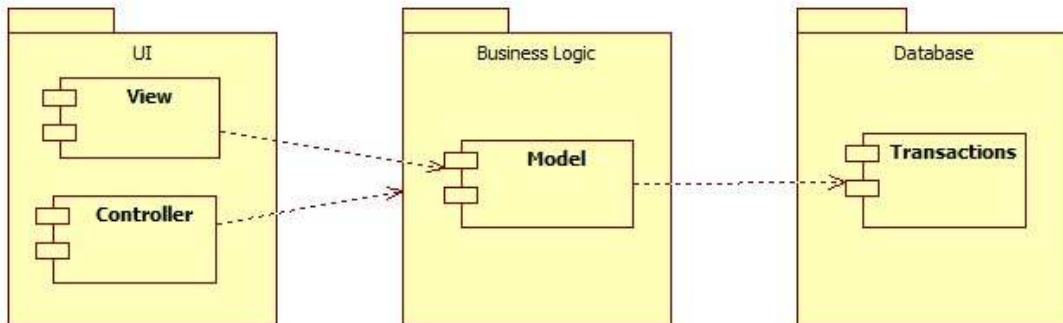
3.2   Component Diagram

Figure 2: Component diagram

Our application will consist of three basic components which are graphical user interface, background application program and database. Graphical user interface will interact with users by providing them visual features such as buttons, visual images, videos etc. Background application program will be an intermediate step between graphical user interface and database, and it will access the database when an operation occurs about an item, and it will display its results by interacting with graphical user interface.

Searching algorithms, grouping algorithms will be embedded in this component and this component will be written in PHP. Database component will be used to store information about the items and it will interact with background PHP program to make item based operations (such as replacing, retrieving, placing, grouping, naming of items etc.). MySQL database will be used for those operations. For style and design, we will use CSS and HTML languages. Also visual effects and browser settings will be done by JavaScript.
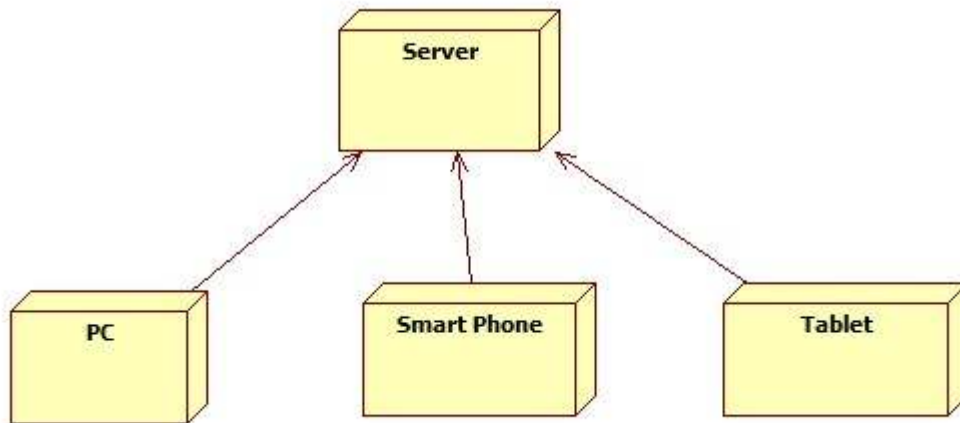
8

3.3   Deployment Diagram

Figure 3: Deployment diagram

Above is the deployment diagram of the project showing some hardware component we may use. Server and PC components will be used when the project is finished. However, by using any web browser of PCs, mobile phones or tablets, our system will be accessible. Graphical user interface will work, to be clearer on a web browser when our main application program will work on the server and will access items on the database.

4   References

[1]   *http://www.tuik.gov.tr/PreHaberBultenleri.do?id=13594*

[2]   *http://www.usatoday.com/story/news/world/2013/02/20/spanish-bartering/1894365/*

[3]   *http://www.preservearticles.com/201012271793/barter-system.html*