Problem Statement for 3rd Semester Project

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Problem area

Nowadays around the world there are more and more natural disasters where many people die, many animals die and the nature which is the reason that we exist on this Earth has such great damages that some are irreversible. On the other hand, if the damage is in one way or another recoverable, it takes decades or even centuries to regain its normal appearance. Most of these disasters are caused for one reason or another by human negligence. Of course, there is another point where instead of harming the nature there are many people who want to help, whether it be with physical activity or with money.

The project idea is a system where most of the disasters around the world will take a place with information about them, with statistics about their defeat, the status of the current situation and option for the customer where he will be able to donate amount of money to help the fight for the rescue of the environment. Each customer must have profile where he will put his information like first name, last name, address, email and his bank account. When customer handles his donating, he will be able to choose to donate the money anonymous or not. Also, if the customer doesn't know for which disaster he wants to donate, there will be option where he will be able to donate special amount of money and this money, after donation, they will be distributed equally to each of the world's disasters. The system will be able to run on web client (ASP.NET MVC) and desktop client (WPF).

In other option the person who wants to donate money each month, he will be able to use the option subscription where in special period of time the amount which he will choose it will be taken from his bank account and the money will be transferred to the disaster which he chooses.

Another functionality in the system it will be online shop where the customer would like to buy something. There each item in this shop it will be made from recycled materials. The user will be able to choose how much he wants from specific product and after choosing he will be able to pay. The amount of money that he will pay it will be distributed equally to each of the world's disasters.

The system also will take a role like education place where everyone can just go and read information for all the disasters around the world. Another option is statistics, where the customer again will be able to get knowledge for the world environment. In addition, the idea is to implement some type of forum for all existing users, where only users could contribute to different topics by posting or editing posts and users who doesn't have profile, they will have a read only option.

Problem Statement

How can we implement a software application that will challenge the population to donate to specific disaster of their choice?

How will we avoid concurrency when two users at the same time what to buy the same product?

Method and Theory

Based on our answers from the interview with random people we build our solution. One of the first programs which we use is Pencil where we create Mockups (examples of the picture) which we use for a better imagine how our system should look like. To manage the workflow in our group we use agile approach or Scrum with some specific diagrams from Unified Process. We use SQL Management Studio (SQL Scripts) for the data that the system must contain. Also, for the whole software, we use C# language which we implement in the program Visual Studio. We have also used some literature from Sommerville, Troelsen, Miles to expand our current knowledge and create a work which would correspond with a university level. We expect a problem with concurrency where our solution is to avoid concurrency with threads where we will use optimistic or pessimistic locking. To make our profile for the customer more secure we will use the technology cryptography especially for his password.