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QUAL 200 Sprint One Assignment – Sustainable Energy

Software Overview

Our application (SEHI) is a one-of-a-kind program that allows innovators, property owners and any other customers to explore a large database of sustainable energy products that they can then view, rent and purchase. Providers can post their own products, setting their own prices and conditions. SEHI has two more distinct features, the first is a custom virtual field in which architects can create and edit their blueprints, after which our software will generate a suitable virtual environment according to the specified data entered, in which the product can be accurately tested. Our second distinct feature is a software specific for homeowners, in which they can upload their address, which will automatically generate a renewable energy home systems report that will suggest possible types of products they can use according to their geographical position. The goal of this feature is to help users convert most of their energy intake into a renewable kind. SEHI runs on both pc and mobile operating systems, however, our virtual field is only accessible for pc users.

Required Features

1. **Sign Up**
   A simple but secure way for users to create an account using their email. Should allow them to select a unique username and upload their custom profile picture. 2-factor authentication will be required for extra security. Users can choose between SMS verification, app-generated codes, or physical authentication keys.
2. **Renewable Energy Products Shop**
   The shop should have a simple interface, where the user can choose whether they are looking to buy or sell and led to the appropriate interface. Buyers should be able to search items by region, select their price range, find items by energy generation type and search by seller name. Sellers should have a basic product post page to showcase their items, and should be able to completely customize the conditions, price, and description.
3. **Product Blueprint Editor**
   A design page in which architects can build from scratch (or import already existing) a blueprint of their creations. They should be able to freely 3d model them, specify functionality, have realistic physics, and all other requirements for design.
4. **Virtual Field**
   Architects should have access to a realistic virtual field in which they can completely customize the environment. The virtual field is where users can import their creations' blueprints to test their efficiency, viability and check for any issues there might be with the device. The field should be able to simulate reality exactly according to the users' inputs. There should be a terrain editor, which

basic structures already available for their use. Weather, temperature, and all other details that exist in reality should be a customizable option.

5. **Account Type Selection**
Once the user has signed up, they will have to setup their account type. Users that solely want to sell or buy products can select the "merchant" plan, which is free. Designers and innovators, that want to use our unique Virtual Field can select the "architect" plan, which will cost 20$ a month / 200$ a year (USD$).

6. **Generate Location**
Virtual field related feature, where the user can access the worldwide maps, selecting a geographical location, and have a perfect replication of the current state of that area. All structures, weather, temperature, and other external details should be perfectly generated.

7. **Generate Sustainable Energy Solutions Report**
A simple feature for homeowners, where they can enter in their address, and have a report generated specific to their circumstances. The report should detail the best green energy solutions, a link to items in the shop which fit their prescriptions, and a well written description of how much energy each product is predicted to produce.

8. **Community Forum**
Forum where users can come together and discuss energy products. There are two different types of forums: The merchant forum and the architect forum. Merchant users should be limited to their forums, while architects should have access to both. Merchant forums should have basic forum requirements, while in architect forums, users can add links to their custom virtual fields and blueprints to showcase products.

Feature Priority Rational

In order to have a working product at the soonest, we decided that sign up must be the first feature implemented to have a working database that can securely store our users' data. The shop, our main feature for normal customers, is the second most important to implement, as it will allow customers and sellers to start selling and buying products, which will start generating revenue. The next two features, blueprint editor and virtual field, go hand in hand. However, since virtual field requires blueprint insertion, we have decided to make that our priority, though we would preferably want both working after the release of the first. The next feature, account type, can only work once virtual field and blueprint editor are available, and therefore is next in line. The last three features are not essential features that we need at the beginning but will be key features later on in the development cycle, two of them being quality of life improvement for dedicated innovators and customers.