Hackathon: Detailed Description

Depletion of Oxygen in atmospheric air has been posing a threat to the existence of life on the Earth. On top of that, increasing rates of carbon emission has contributed to the diminishing of fresh air, of the greenhouse effect and rising atmospheric temperatures. These factors highly affect the climate change. Carbon emission mainly results from deforestation ,burning of oil and gas etc. Also, the increase in densely populated areas has accelerated the process. Finding and maintaining the right choice of green to grow at home in these areas will impact in fighting climate change, increasing the air quality index and to make our earth greener. Most people in urban areas are trying hard to utilise the land they have.

This is where we come in. Our application considers the deciding factors that help choose the type of plants. We aim to fight climate change and contribute to sustainability by suggesting only those plants that are scientifically proven to be the most efficient in improving air quality index and bringing down the amount carbon dioxide in a short amount of time. Our project proposes a cloud based web application that recommends suitable plants to grow in less spacious residential properties which help reduce carbon content, increase oxygen content, and purify air.

Our application, named Plantopia consists of a home page that opens up with excerpts and thought provoking quotes that establish the importance of sustainability for a better future. A user can then view various facilities including:
> An option to create a user account where one can have a personalised experience
> An option that updates latest events and news that works towards the goal of fighting climate change and related subjects.
> Success stories of other users
> A comment section exclusively for registered users to interact and motivate each other, clear doubts, post suggestions etc.
> Quick links section that redirects to the nearest location where agriculture and gardening related institute functions
> An interactive chatbot Rhea, who helps users navigate through the application, answer their queries etc.

The provision for creating user accounts helps a user to have a personalised experience during their use of the application. Each registered user can have their dashboard that consists of the following options:

: A menu that displays various features that helps us to identify the best choice of plant to grow in a certain area. These features function as a filter that filters out the suitable plant from our database and suggests it to the user. The features include amount of available sunlight and water (low, medium, high), type of soil (red, black, and gravel, sand), and temperatures (in Fahrienheit). Once the plants are suggested, scientific facts and unknown features of these choices are also displayed, followed by the timeline of its expected growth.

: Instructions for proper maintenance of these plants are also given as notifications on the dashboard and as email. Users can link their accounts to Calendar so that they do not miss out on timely reminders.
: The registered users can directly contact other users for suggestions, tips or doubt clearance through an exclusive comment section.

: Nearest location to procure seedlings, contact details of various government and non-government bodies are included.

The plants suggested are:

* Pothos
* Sanseveria
* Peace Lily
* Aloe Vera
* Areca Palm
* Tulsi

These plants are mostly indoor considering the current pandemic situation and all are restricted to their homes. It is another applicability of our application that it helps engaging us in a task that is vital in the role of improving mental and physical health. This proposal is focused on the principle that each small step. Each home ultimately helps in bringing down the challenges put up by climate change.

The application is developed using PHP and utilises IBM Cloudant platform for storing the plant details, user account details, personalised log of growth of each plant chosen by the registered users. The chatbot Rhea is developed using ------- that interacts in English to the user.

This application can be extended to add more plants, and expand the network of users who share a common interest in utilising this application have a sole space for interacting on the same. If this application is implemented as a networking platform for people in a community, each home will help bring down the carbon emission rate considerably well and in the long run, will help sustain fresh air in urban areas that are so called hotspots for carbon emission.