Microsoft Azure Women's Hackathon 2022

Idea Submission

TEAM SOLITUDE and MEMBER DETAILS

Bhavyta Aggarwal

THEME: *Shape the idea that you believe in and make a difference.*

Build solutions to enable economic freedom for women

PROBLEM STATEMENT

Green Fintech has been one of the popular sectors startups. Many solutions have been implemented by the banks and companies that mainly aim to cut off a small amount from the transactions for environmental benefit. However, some people including rural people are unaware of these initiatives, especially in India, where many earn low wages and are unwilling to spend even a penny on the environment. They think the companies are spam and not trustworthy. The main problem is the lack of awareness and building trust in the public. Educated people knew about the harm caused by non-biodegradable waste, but they are the ones who throw garbage in the open at beaches, gardens, and other public spots.

How to create awareness related to reducing carbon footprint and becoming more environmentally conscious? What benefits could be provided which could generate loyalty towards environment among customers? Which issues can be addressed and resolved by a small action?

SOLUTION- Hariyali

I planned to create a web app names Hariyali as a part of Go Green movement. The customers will gain points on doing an eco-friendly action. There will be multiple features in the app:

1. One clicks a picture with himself and a new plant in the garden, then the app will identify the plant and make a schedule which will remind him to fertilize, water and care for his plant. In such way, he will score some points. In case he upload the same photo as the new plant, the app will recognize and will ask for pic of both plants together for affirmation.
2. For someone, who don't want to grow plants, they can either give adopt a tree in some plantation, or invest(maximum Rs. 2000) in a green startups (P2P business).
3. To keep the people engage in the app, we could organise local group community activities or crowdfunding event for small businesses like nurseries, companies aiming for sustainable solutions and many more.

There will be rewards given by the app monthly depending on the points earned and even maintain a dashboard keeping score of points of all users in that particular zones to increase competition. To increase the social media engagement, we will target the companies on instagram and facebook for investment which are already using sustainable packaging and other materials, we will cut 1% of every investment , and collect it , which we will spent on planting trees and protecting the rainforest.

- How it helps to solve the problem?

  With social media engagement, people will start a new trend and show contributions to eco-friendly world will inspire other people. They will even reduce the carbon footprint by growing more trees, buying sustainable packaged products, and recycling items while in general crowdfunding for major environmental impact. They will upload their badges and rewards they receive, moreover the companies, having millions of followers on insta (for eg. betterpackagingco) which on getting more investments will promote the app on their social media which will gain the attention towards environment. Later on we will add other features where we can keep track on electricity bills, water bills, gas bills, and give rewards upon saving the resources indirectly lesser expenses. The main problem of building a smart unified payment system will be solved where they are paying bills on our system and even getting rewards for saving the electricity, water and other things.

- How it relatable to theme?

  Shape the idea that you believe in and make a difference- This reward point earning system for growing plants has been inspired from NETC FASTag which able to make a difference when used by a large audience, with few small features. This app can make a significant impact on environment since many people would join in and grow a lot of plants with the greed of points. Moreover green startups will be able to gain market with crowdfunding investment, bringing in innovative solutions.

<u>Build solutions to enable economic freedom for women-</u> There are many women who want to build their own business but don't where to start and can't take decisions independently. Those entrepreneurs could achieve a platform here though small but a great start for their startup launch. They can build or become a part of community for environmental discussions. It is not necessary that their ideas should lie in the nature domain but they could form connections about normal discussions then later can receive guidance after interaction. They can analyse the market study in one particular domain about incorporating market trends. Instead of studying all markets together, they can start with one market at a time. They can even gather investment from crowdfunding platform.

As for the ones not interested in the launching their ideas, mainly targeting homemakers and rural women who are not financially independent, can gather rewards and cashbacks just by growing plants, crops, and trees at their homes. This would give a little freedom to them use those rewards as per their wish.

- What are the impact metrics that one can use to analyze the effect of the solution?

Global Goals	United Nations Sustainable Development Goals (SDGs)
Impact Investing	IRIS
Sustainability	Global Reporting Initiative (GRI)
Community (Non-Profit)	Guidestar, Robinhood, etc.

- Frameworks/Technologies stacks to be used:
  MERN (MongoDB, ExpressJS, ReactJS, NodeJS) stack for web development,
  Flutter for mobile app dev, can be used as cross-platform later on/
  Python 3.7.0

- Assumptions, constraints, and solution decision points (Reason behind choosing a technology)

  - We are initially creating the dynamic website(using react) to setup the complete idea. We are choosing MongoDB on temporary basis then we will shift to PostgreSQL.
  - We can either use Nodejs or Django for backend depending on the apis and ML models.
  - Once we get seed funding, we will launch the app after setting up the website after thorough testing so that we can launch out MVP while developing the app parallely.
  - Our idea is currently related to afforestation and peer-to-peer investment in sustainable solutions.
  - We will be using Azure machine learning models for image recognition.
  - We will be targeting urban area first audience of age 25+ to 60 since they are majority ones active in social media. Later on we will include rural area as well.
  - We are assuming that people can spend at least Rs. 100 every month for the environment.

- How easily can your solution be implemented and how effective will it be?
  The solution could be implemented easily in the first phase where we could make a dashboard where new user can approach verified companies and earn points in their account by growing plants, adopting trees and even make a prototype of crowdfunding platform.

- Extent of Scalability/Usability
  The solution can be scaled to a large scale where people could also track their investments. A calculator for carbon footprint and similar to afforestation, we can explore methods where we could track other factors of carbon footprint and award them for saving resources. We will be adding more services where we will keep track of electricity, water, and other resources used by keeping track of the respective bills. This is a small solution but can make a big impact if used by large audience, and later on can be turned into large scale application.

METHODOLOGY

We have currently adopted agile methodology with microservices architecture so that we can keep on adding features and expand the application.

In the following slides, we have explained the methodology in detail.

Currently we have made sequence diagrams to give a glimpse on the functionality of the application.

Phases of the project

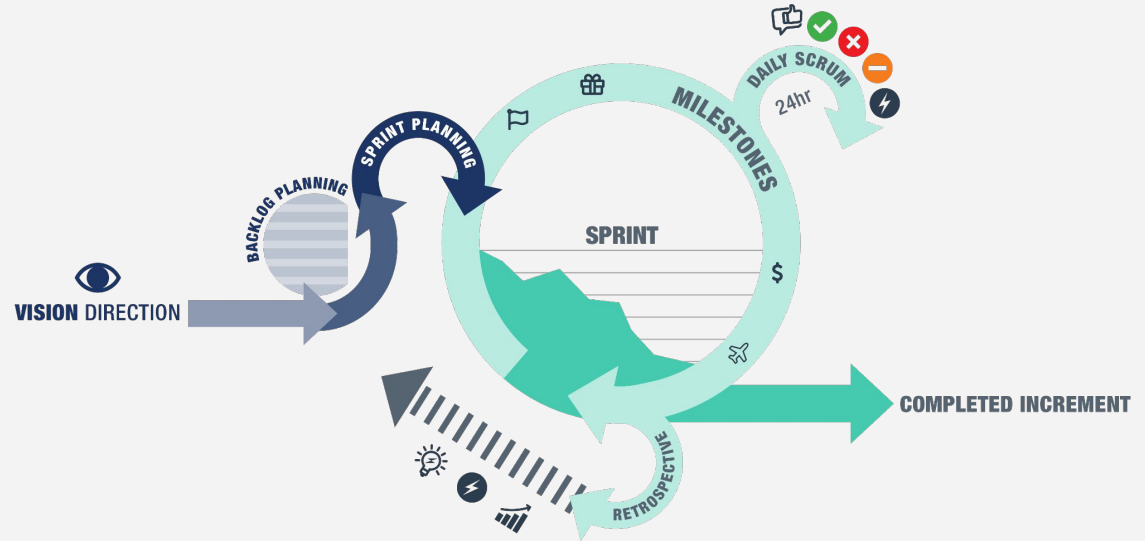Currently we are focusing on the few services explained later, as part of first phase.

In the second phase, we will combine the feature where people are getting awarded on saving electricity, gasolene and water. They will update their monthly bills through which we will track the amount of resources used.

In the third and final phase, we will add our own Unified Payment system where one can pay all their bills and even monitor their expenses.
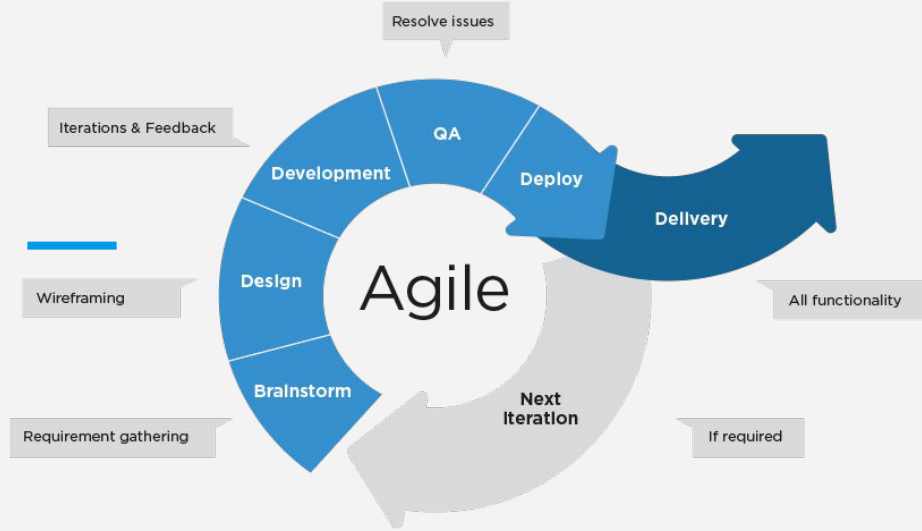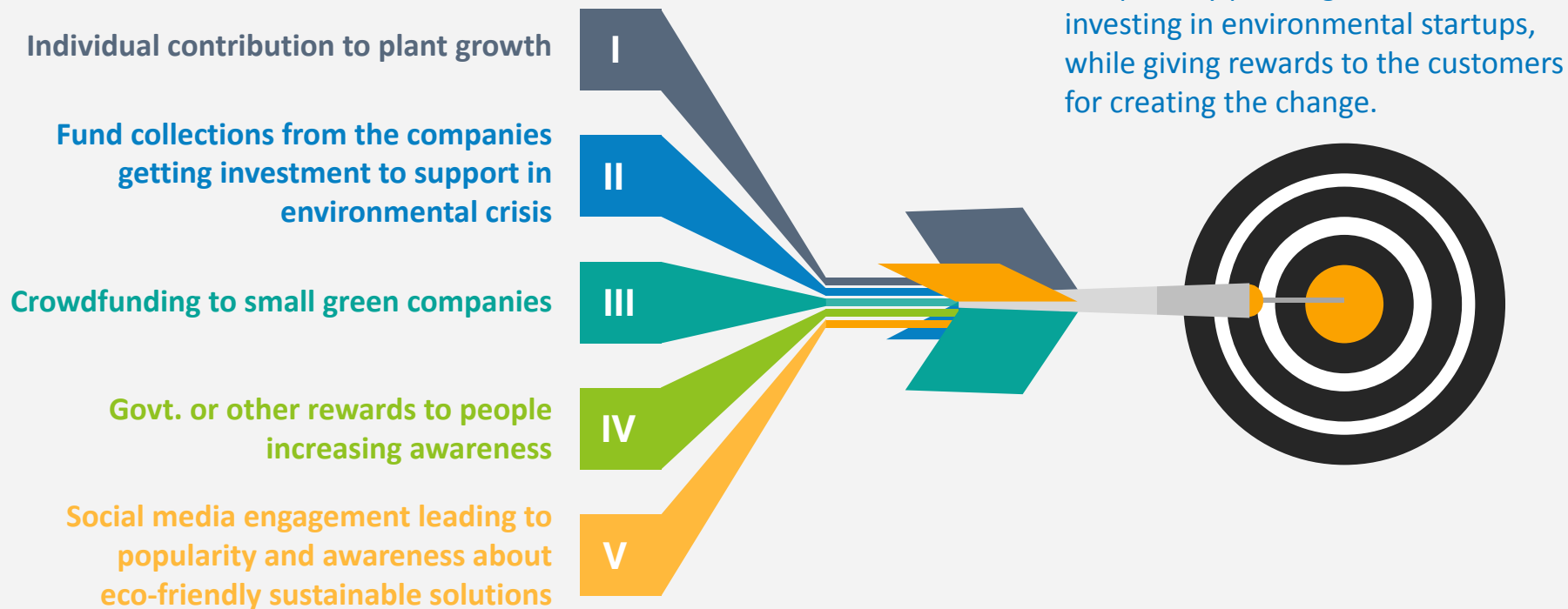
We will be using agile methodology. Agile Methodology is a people-focused, results-focused approach to software development that respects our rapidly changing world. It's centered around adaptive planning, self-organization, and short delivery times. It's flexible, fast, and aims for continuous improvements in quality, using tools like Scrum Programming.

An approach that takes inspiration from Agile software development - breaking the project up into several stages, cross-functional collaboration, and continuous improvement and iteration at every stage

Components

Individual contribution to plant growth

I

Fund collections from the companies getting investment to support in environmental crisis

II

Crowdfunding to small green companies

III

Govt. or other rewards to people increasing awareness

IV

Social media engagement leading to popularity and awareness about eco-friendly sustainable solutions

V

Concept

The project mainly aims at sustainability, reducing carbon footprint by planting trees, and investing in environmental startups, while giving rewards to the customers for creating the change.

- People- a small team mainly from tech and management fields, later will be expanded.
- Equipment- there is no particular equipment for now, just computers are there for now,
- hardware/software- tech stack has been mentioned and there is no specific hardware
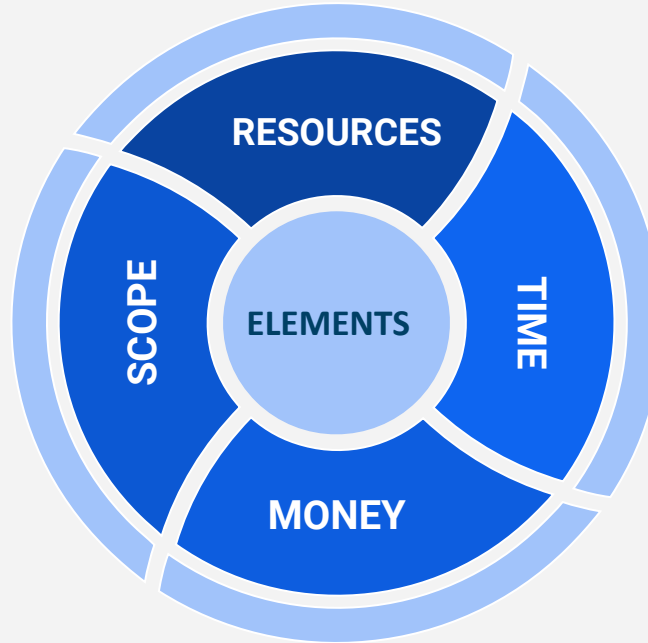
- Project size- currently it is a small scale project with beginning features
- Goals- it mainly aims to increase awareness among people to become environmental consciousness
- Target Audience: 25-60 yrs people

RESOURCES

SCOPE

ELEMENTS

TIME

MONEY

- Task durations- 1-2 months to develop MVP
- Schedule management- with help of agile methodology, a regular schedule and standups will be used to trace progress
- Critical path- we will first focus on the critical tasks and then keep other as background tasks.

- Costs- expenses related to hosting and deploying servers of application, domain
- Contingencies- the funds collected from investment made to the companies will act as emergency fund
- Profit- will come from advertising
- For rewards, we will collaborate with government and other non-profit organisations as sponsors

**Principles:** Along with building carbon aware application, the following principles we follow are

1. **Commitment & Accountability** - Recognize the essential rights of all to healthy, clean and safe environments, equal opportunity, fair remuneration, ethical procurement, and adherence to rule of law

2. **Ethics & Decision Making**- Support organizational ethics, decision making with respect for universal principles through identification, mitigation, and the prevention of adverse short and long-term impacts on society and the environment

3. **Integrated & Transparent** - Foster the interdependence of economic development, social integrity, and environmental protection in all aspects of governance, practice and reporting

4. **Principles & Values Based**- Conserve and enhancing our natural resource base by improving the ways in which we develop and use technologies and resources

5. **Social & Ecological Equity**- Assess human vulnerability in ecologically sensitive areas and centres of population through demographic dynamics

6. **Economic Prosperity**- Adhere to fiscal strategies, objectives, and targets that balance the needs of stakeholders, including immediate needs and those of future generations

We will be using **microservices architecture** as we are and will be combining multiple microservices in a single app. To avoid data duplication, we will be using a **shared database**(Shared-database-per-service pattern).

Services for now:

1. Maintain score for rewards
2. Crowdfunding for green startups
3. Tree Adoption
4. Recognise a plant and make a schedule for gardening.
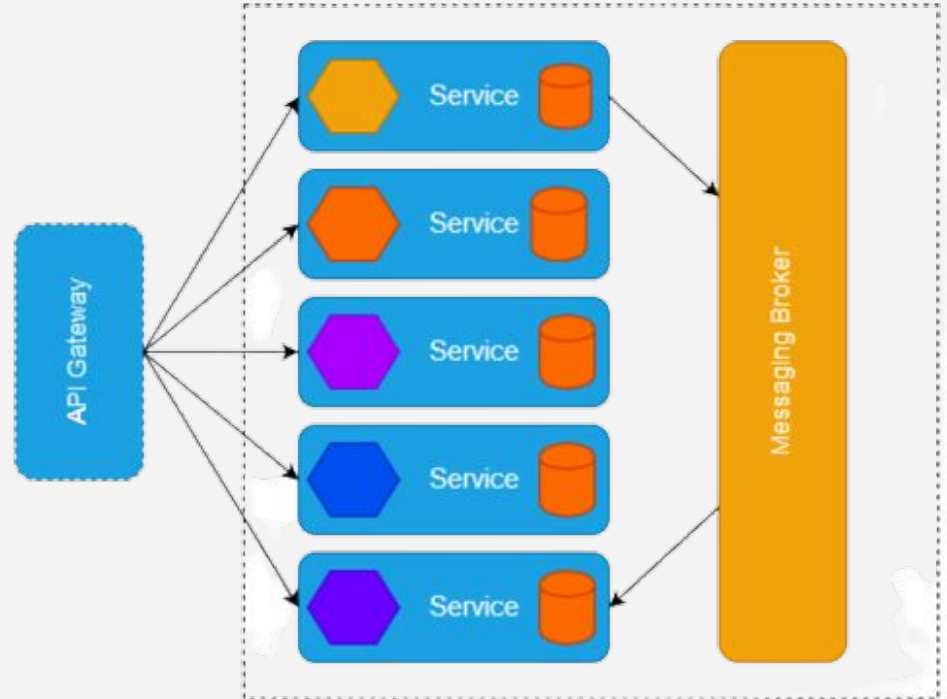
Main Features of MVP App

Garden Go

Earn points by growing/adopting more plants and later get rewards.
(Source of inspiration: GPay, Myntra Loyalty Program etc.)

Recycle or Not

Unleash curiosity whether a particular thing is recyclable or not.

G-crowdfunding

Invest in green startups which focus on creating more eco-friendly products instead of generating higher revenues.
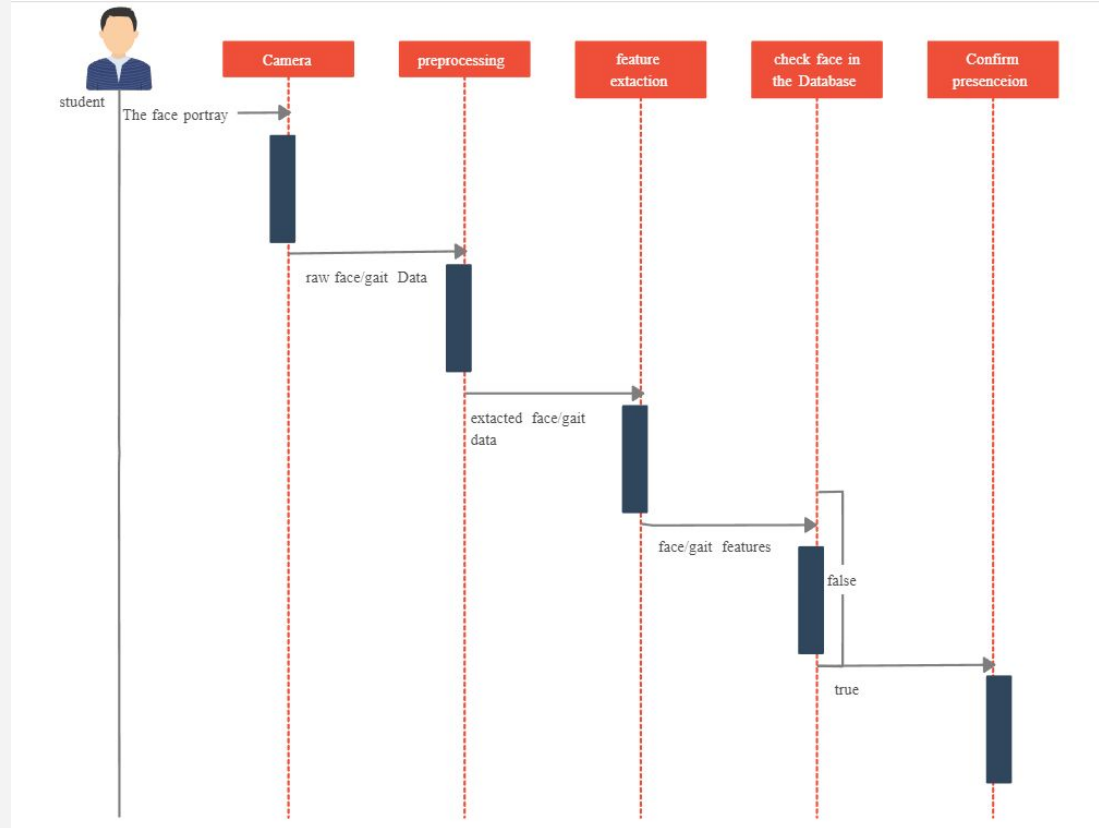
Authentication Sequence Diagram
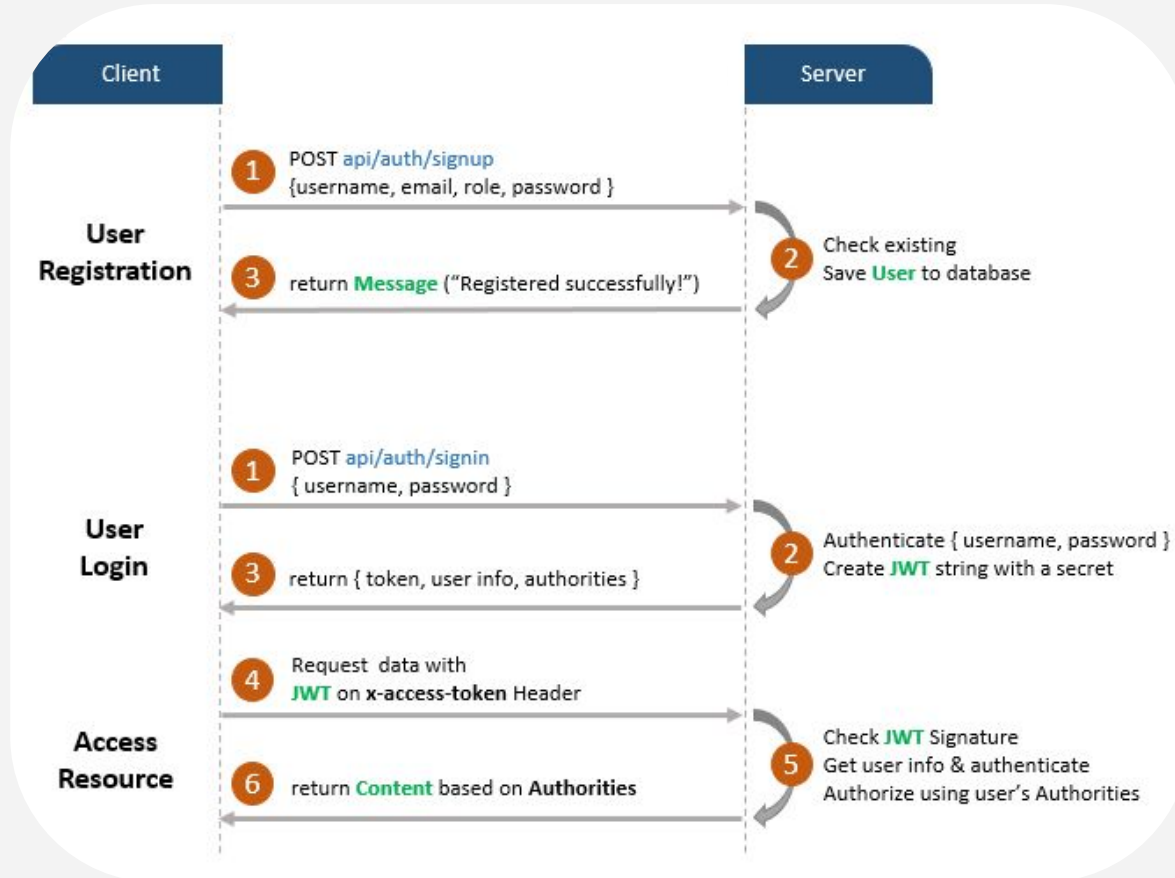
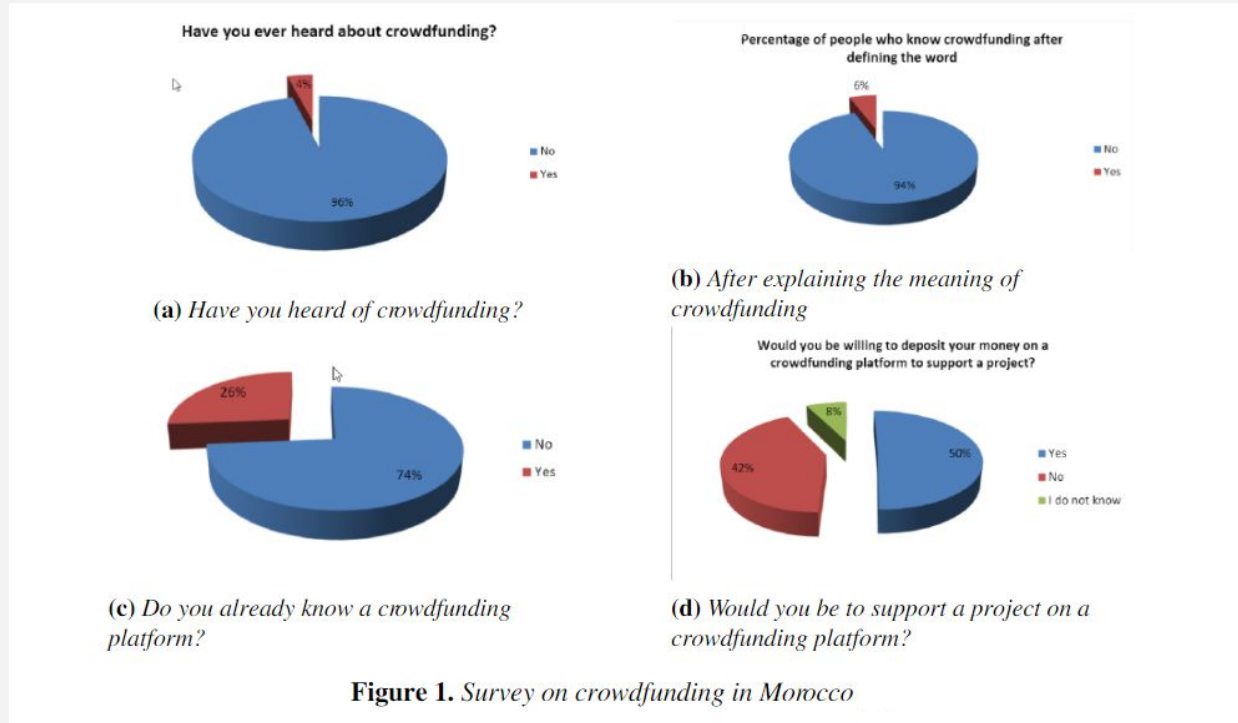# Growing Plants at Home: Sequence Diagram
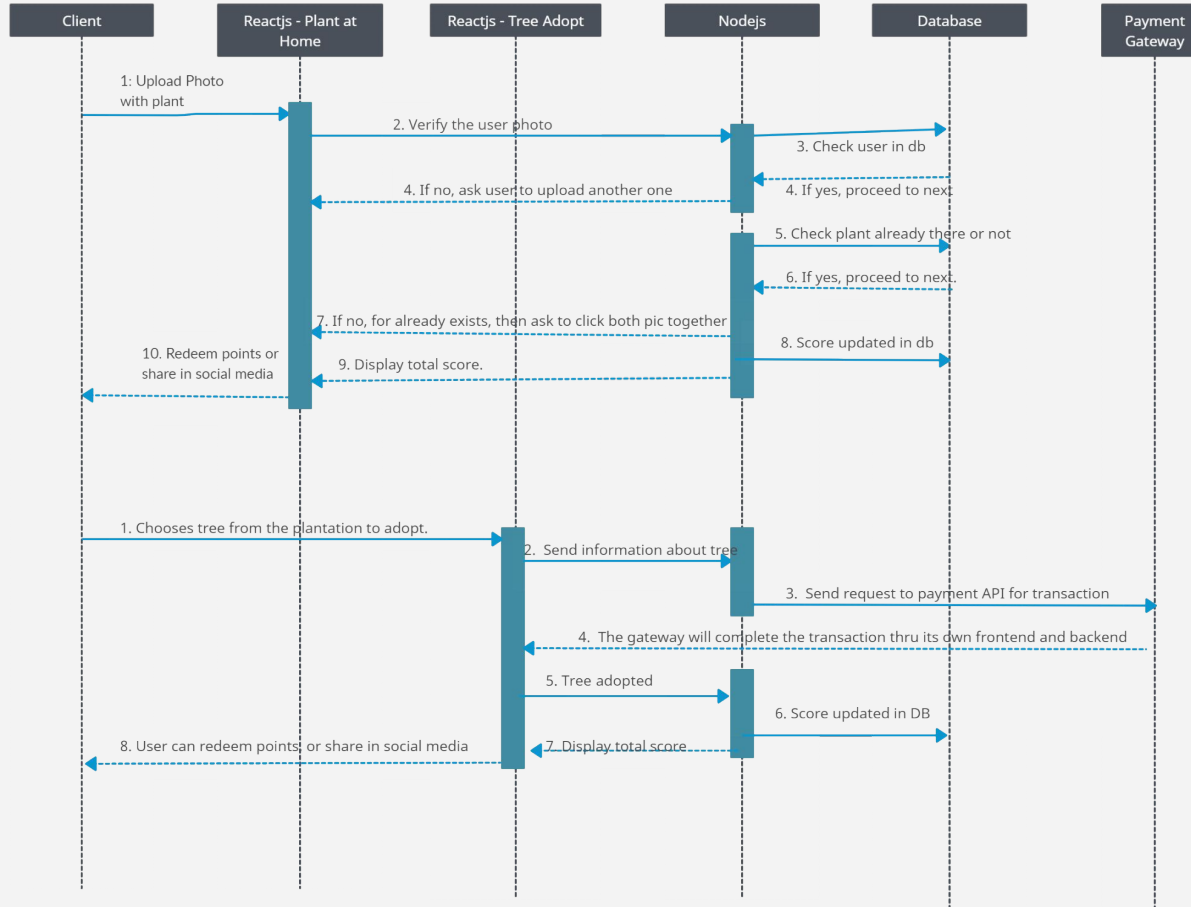
Growing Plants at Home:

Sequence Diagram for Face Recognition. Similar for plant recognition as well. We will either use Azure or Google Cloud trained models.
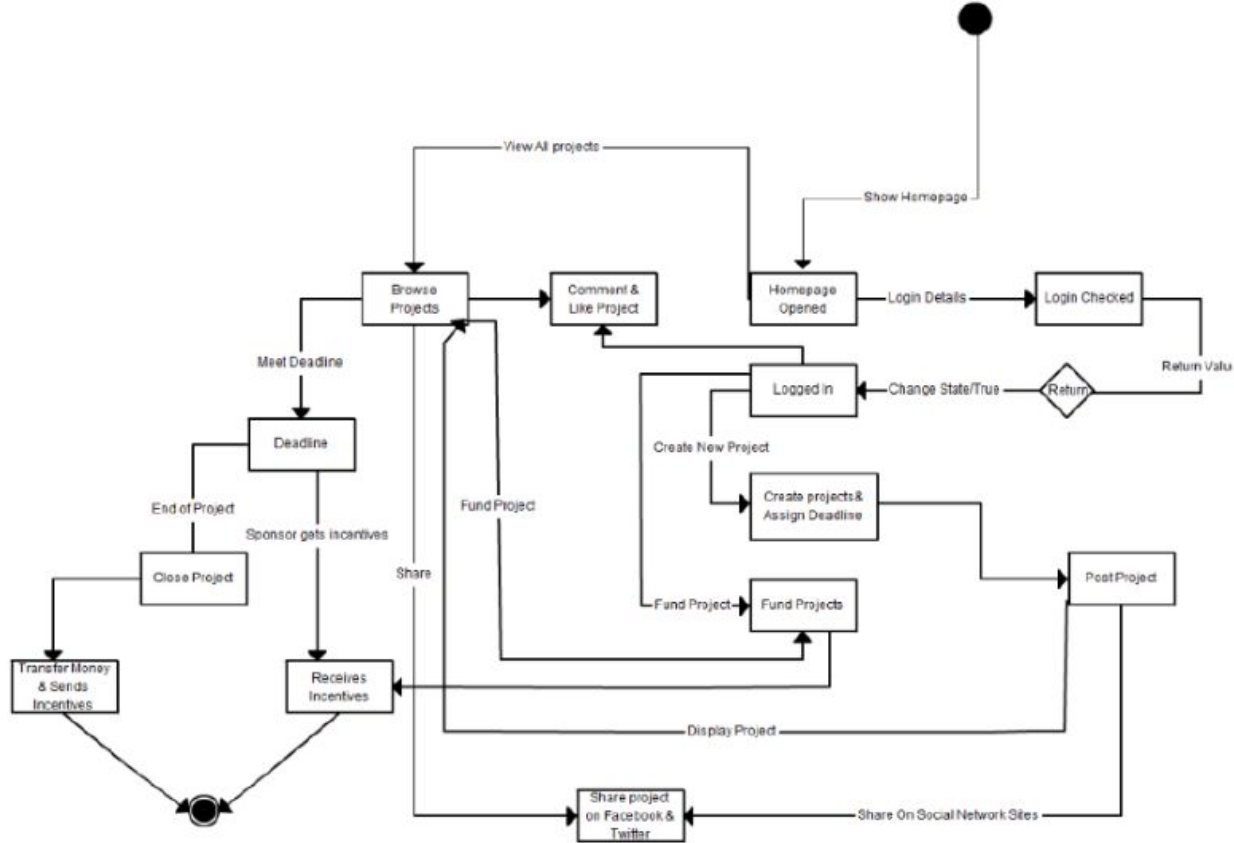
Reward based Crowdfunding Model

The model allows people to contribute to projects and receive non–financial rewards in return, usually operating a tiered system where the more you donate the better the reward you receive. The model often closely resembles philanthropy with the donation far exceeding the monetary value of the reward or the reward costingthe fundraiser little, such as experience or recognition–related rewards. In these cases, entrepreneurs crowdfund the production cost of their product and allow the donors to be the first recipients once the production is complete.


(a) *Have you heard of crowdfunding?*

(b) *After explaining the meaning of crowdfunding*

(c) *Do you already know a crowdfunding platform?*

(d) *Would you be to support a project on a crowdfunding platform?*

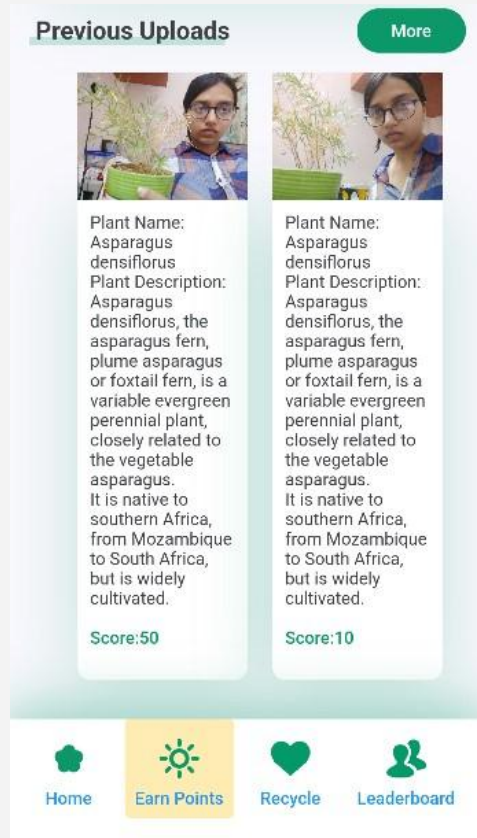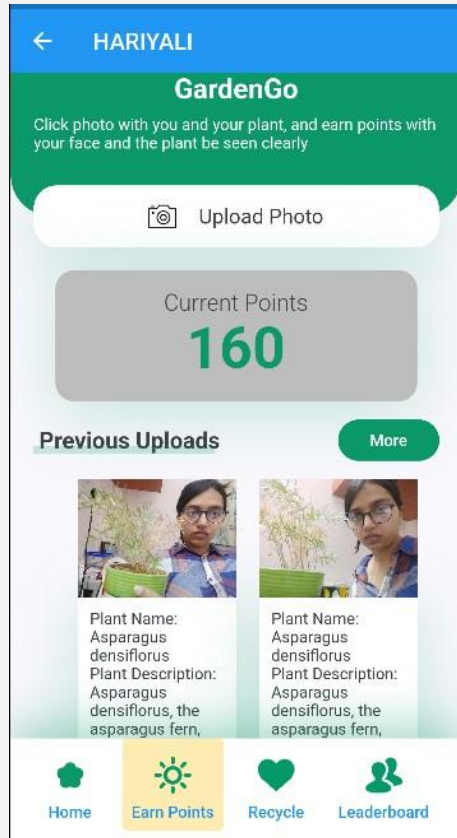**Figure 1.** *Survey on crowdfunding in Morocco*

Reward based Crowdfunding Model

Prototype of MVP (didn't include crowdfunding due to time constraints)
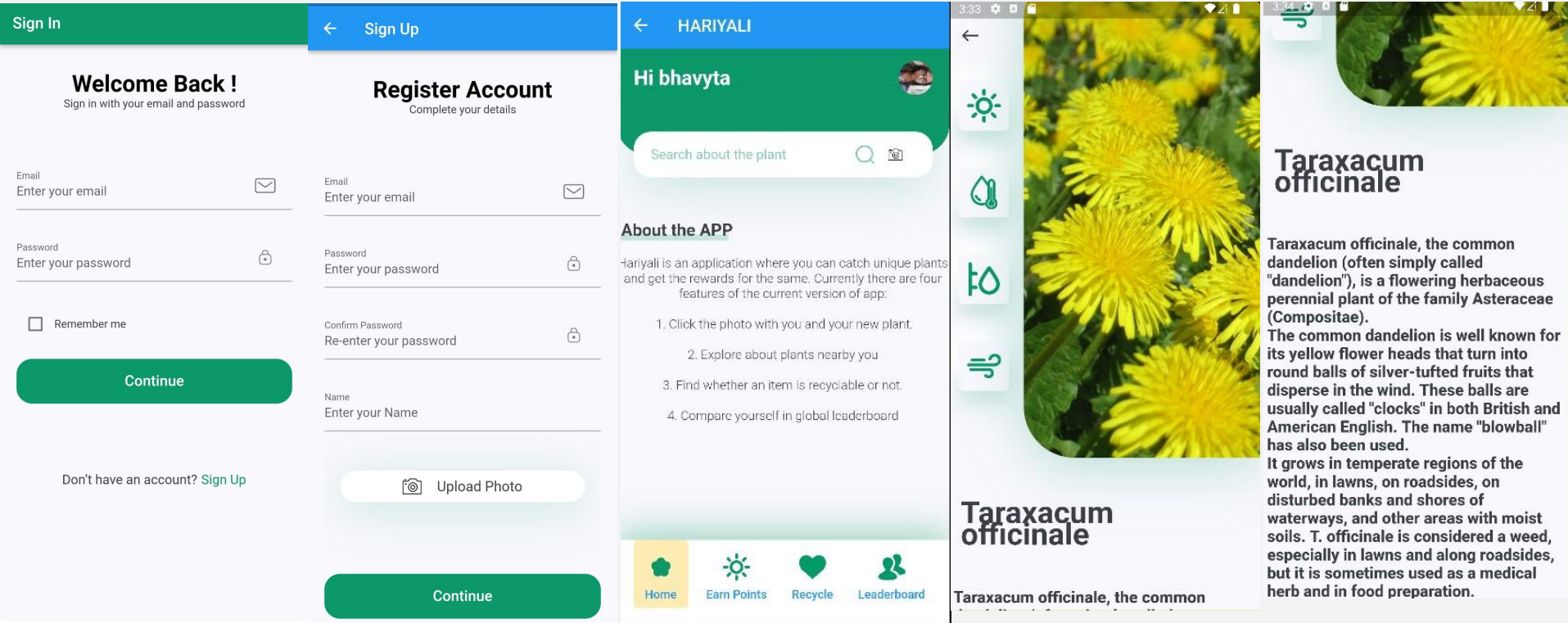
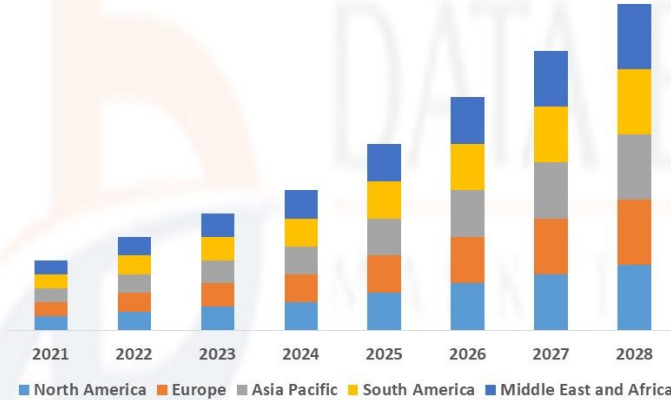# Prototype of MVP (didn't include crowdfunding due to time constraints)
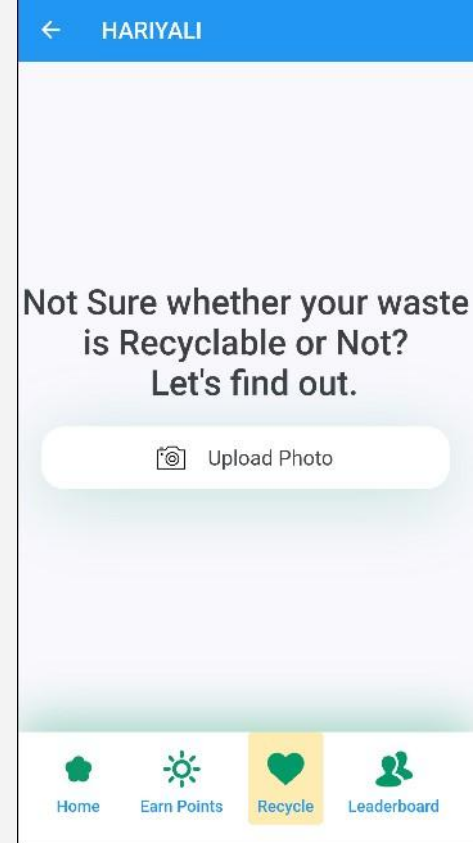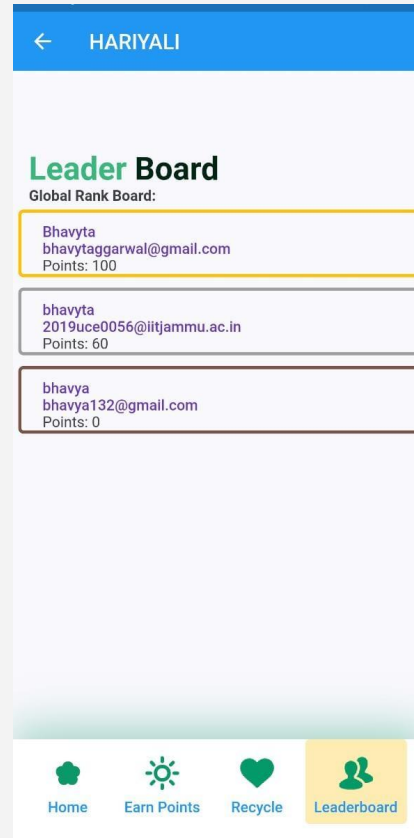
Go to Market Strategy

Market Trends

Global Indoor Plants Market is Expected to Account for USD XX Million by 2028

Global Indoor Plants Market, By Regions, 2021 to 2028

2021

2028

DATA BRIDGE MARKET RESEARCH

■ North America ■ Europe ■ Asia Pacific ■ South America ■ Middle East and Africa

India Indoor Plants Market Size, By Region, By Value, 2015-2025F

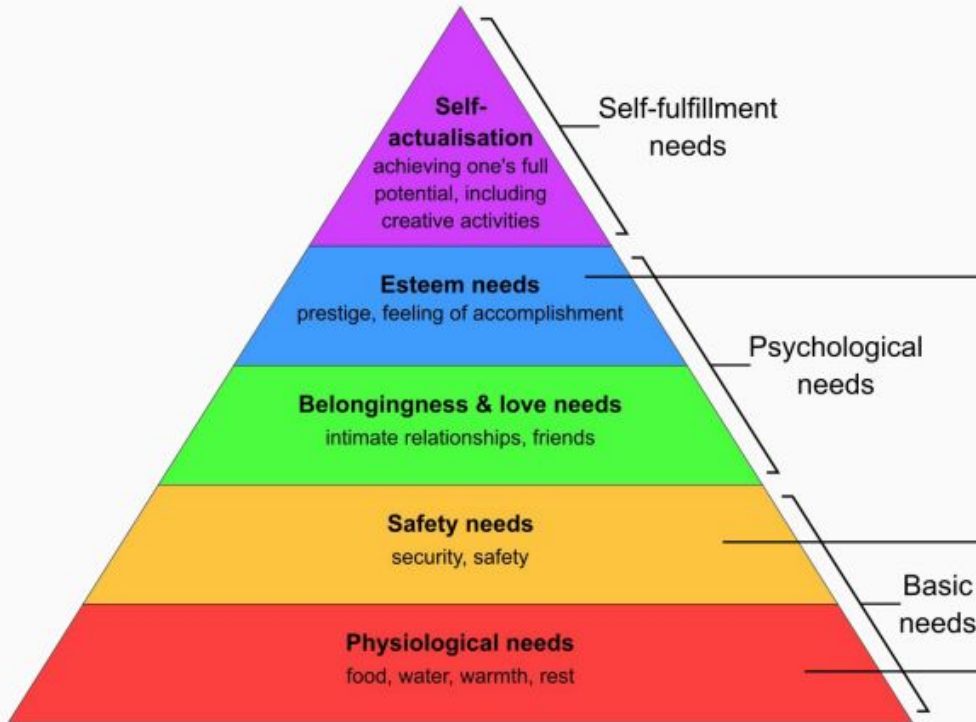■ North   ■ South   ■ East   ■ West

Source: TechSci Research

The indoor plants global market is expected to be growing at a growth rate of 4.37% in the forecast period of 2021 to 2028.

Major Plant Identification & Gardening Apps

Maslow's Hierarchy of Needs

Gain INTEREST of stakeholder during Marketing. More on that later

Environment-Friendly Bragging and rewards for the same

Secured & Hassle-free transactions with help of Amex
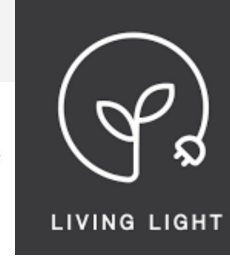
By increasing profits

Points of Market Entry

1. Large-Scale Companies that promote Go-Green
2. Social Media influencers
3. Google searches- Website and Ads
4. Fast Growing Green Startups

Success Metrics(AARM Framework)
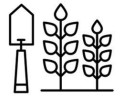
ACQUISITION

1. CAC- Customer Acquisition Cost
2. No. of users signed up for trial period
3. No. of companies signed up for trial period
4. Number of Downloads of the Application

RETENTION

1. Customer Retention Rate
2. Churn Rate
3. Number of Transactions per Month
4. Existing Customer Revenue Growth Rate

ACTIVATION:

1. Number of active users of Application
2. Number of Transactions p.a.
4. Number of scans done using the Application

MONETIZATION

1. CLV- Customer Lifetime Value
2. ARPU- Average Revenue per user
3. MRR- Monthly Recurring Revenue
4. ARR- Annual Recurring Revenue
5. Net MRR growth rate

Awareness
Interest
Decision
Action

We will be using SALES FUNNEL for Customer Acquisition

Value Proposition

Customer Segment

Gain creators
1. . Rewards for growing plants
2. No need to think of profits while making investment since they will be getting rewards

Products & services
1. Reward system on growing/adopting plants or trees
2. Crowdfunding in eco-startupss

Pain relievers
1. Profits more than the cosy.
2. No need of research as info will be already there

Gains
1. Enjoy nature and its benefit at home (cooling, air quality etc.)
2. Chances of inrease in profits

Customer jobs
Grow Plants

Pains
1. Plant maintenance and gardening
2. Extra cost and time to gardening
3. Have to do a lot of research before making investment

BUSINESS MODEL

Key Partners or Suppliers

- Investors
- Green Startups and small companies
- Social Media Influencers
-End consumers

Key Activities
Reward point earning system and crowdfunding

Key Resources
Technology Platform

Value Proposition

-grow plants or adopt trees
-check item is recyclable or not
-crowdfunding platform

Customer Relationships
- rewards system
-cost benefits

Channels
- mobile application
-offline & online marketing

Customer Segments
- people of range 30-65 yrs
- eco-friendly companies /startups
- sustainable packaging industries
-nurseries

Cost Structure
-licensing and marketing
-technology infra(including storage) , hosting and deployment

Revenue Streams
subscription fees for companies to register on crowdfunding app, prices for ad campaigns on our app

SOCIETAL IMPACT/ NOVELTY

Once the solution is adopted, people will be planting more plants around them and even some may adopt trees which will lead to afforestation. There are many startups and small businesses which support environment but can't get enough funds, they will receive investments through our solution and can make a bigger impact for the society. There could be trends started on social media where large audience is participating in green revolution, and even inspiring others to think in sustainable direction as there is scope in them. And once we build sufficient trust and popularity, we can launch other phases of the application for better management of resources.

FUTURE SCOPE

Business relevance:

It's a long term plan. We can earn profits through the advertisement charges and can receive funds from non-profit organisations. We will even collect from the investments made to the companies which will be used for environmental crisis. Since the app is made for good cause, there are chances that our idea will become popular and can attract the major investors.

Optimisation:

With increase in customers, we will be integrating other technologies for smooth and faster process, and even expand the team to focus on smaller areas where the app lacks for more improvement.

Scope for modification:

There are multiple sectors in this applications for modifications since it is made up of individual features like crowdfunding portal, image recognition of plants, updating schedules, and many more will be keep on adding.

THANK YOU