

Proposed Level of Achievement: Apollo 11

1. Background

1.1 Motivation

Our environment has been in a severe situation for a long time. It is both damaging our current living conditions and our future generations. There are many urgent problems such as pollution, global warming, resource depletion, etc. As most of the issues are caused by human activities, it is important for people to internalize the mindset of environmental protection by living a sustainable lifestyle.

However, there are still a lot of people who lack the incentives to take real-life actions as they are not convinced about the impact which an individual can make, or they are not aware of the possible actions in the first place. Therefore, to increase users' incentives to practice green actions and raise awareness of environmental protection, we would like to develop an app to recommend possible actions and keep track of users' impact, so that users can be more environmentally conscious and more motivated to take real-life actions.

1.2 User Stories

1. As a person who concerns about the environment, I would like to know how I can contribute to reducing environmental damage.
2. As an environmental activist and educator promote the importance of conserving the natural environment, I would like to spread the message and encourage more people to take part.
3. As a person who is passionate about learning, I want to gain more knowledge about our natural environment.

1.3 Aim

We hope to make eco-friendly actions more accessible, to make individual impacts more visible, and to provide relevant knowledge regarding environmental protection to people.

2. Introduction

2.1 Scope of Project

Eco-Action is an iOS mobile application with an interactive design to encourage a sustainable lifestyle among users, as well as to recommend and keep track of users' eco-friendly practices.

The main features include:

a) Track daily actions

The application has a list of green actions for users to take. When users complete an action, they need to take a picture and select the type of action they achieved to record it. Users can also review their achievement records. There are different levels of achievements to encourage consistent actions.

b) Visualize individual and community's achievements

The application collects users' data of actions, calculates the impact from the user's individual achievements or the community's collective achievement, such as the total amount of carbon emission reduced by all users, and transfer it to real-life statistics or diagrams to visualize their achievements.

c) Share actions on social platforms

Users can connect the app with social platforms like Facebook and Instagram, with the feature to share their achievement with their friends and invite friends to join Eco-Action.

d) Gain knowledge

The application has the feature to introduce knowledge cited from credible sources regarding environmental protection and tips of sustainable practices, presented in the form of short articles with relevant pictures or short videos.

e) Game feature

Upon successful registration, each user will be assigned an animal to take care of. Initially, the animal is trapped in severe environmental conditions such as pollution. By completing the green actions, users can gain reward points and use them to improve the environment that this animal is living in, such as reducing the amount of plastic waste around this animal.

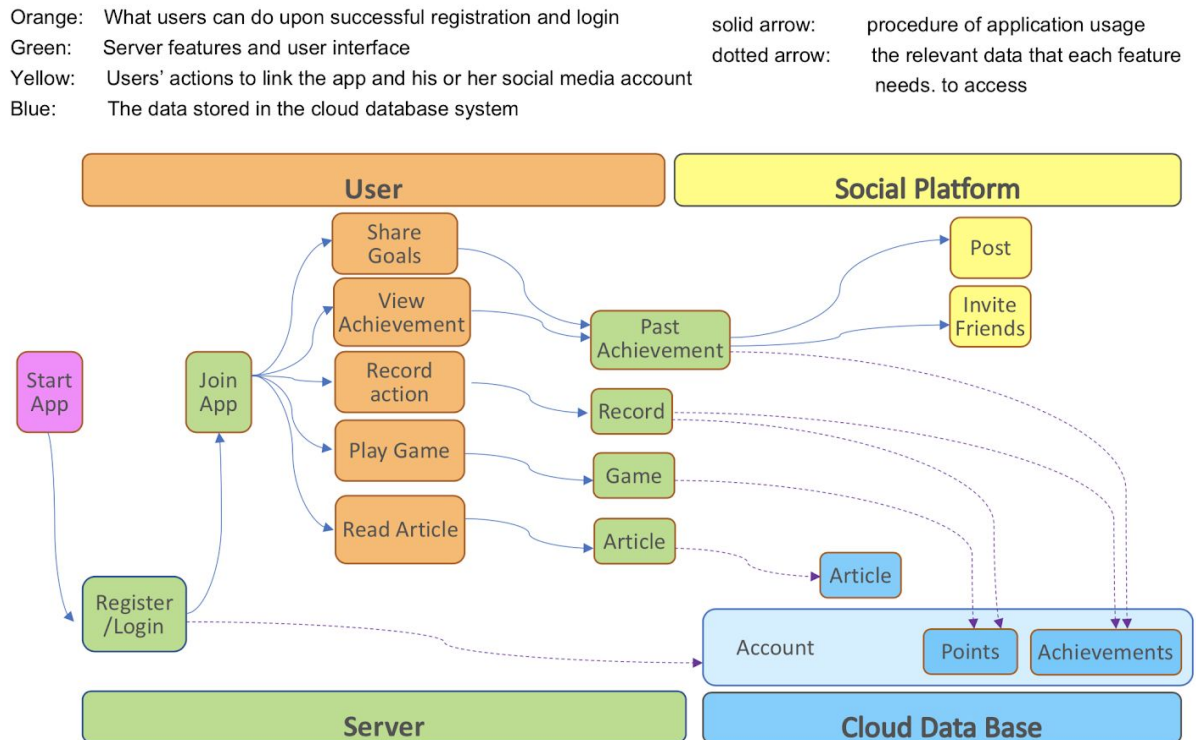
There are various goals for users to achieve on the app, including the types and numbers of actions taken, sharing on social platforms, the number of days which users practice green actions, etc. Users can earn more points by accomplishing these goals and purchase other animals with the points as well.

f) Recommend eco-friendly shopping/dining options (newly added)

The application can consolidate information on eco-friendly stores and restaurants to recommend to users. The information includes the name and location of the stores, as well as a short description of how they operate to

achieve sustainability. By visiting these stores and follow the green practices, users also get to earn points to their personal accounts.

2.2 Program Flow



3. Technology

Front-end

- iOS app development: Client-side Swift with the UIKit framework
- UI/UX: Interactive design with proper functionality, usability and user adaptability

Back-end

- Version control with Git
- The main logic of application: Server-side Swift
- Data visualization: managing and storing graphic/diagram representation of collective user data
- Database cloud management with Firebase: user account information, articles in the form of websites
- Game development: gamification design and point system

4. Development Plan

By milestone 1:

- The general design of the application
- The front-end design of starting page, login and register page, the main page
- Link user account information to firebase

By milestone 2:

- Research on environmental protection topics
- The front-end design of all basic page navigation, including achievement page, daily action page, article page, game page, sharing page
- Development of achievement calculation, gamification system, linking to social media platforms

Project Log

S/N	Task	Date	HSIAO-HAN(hrs)	Xueting(hrs)	Remarks
1.	Team Meeting	11/5/2019	3	3	1) Decide on the project topic and development type 2) Discuss the basic features of our application
2.	Lift-off 1	13/5/2019	8	8	Lift-off day 1
3.	Lift-off 2	14/5/2019	8	8	Lift-off day 2
4.	FS-2019	15/5/2019	8	8	HTML/Web programming
5.	Team Meeting	15/5/2019	1	1	Milestone document drafting
6.	Team meeting	16/5/2019	2	2	Panning and milestone document drafting
7.	FS-2019	17/5/2019	4	4	CSS fundamentals and Creativity
8.	Team meeting	18/5/2019	5	5	1) Planning and Milestone document drafting 2) Learn git

9.	Team meeting	19/5/2019	5.5	5.5	1) Make poster 2) Learn git/web programming
10.	Team learning	20/5/2019	5	5	Learn iOS App development
11.	FS-2019	21/5/2019	10	10	1) TypeScript/Vue 2) Self-learning iOS App development
12.	Team meeting	23/5/2019	5	5	1) Milestone 1 video making
13.	FS-2019 and team meeting	24/5/2019	6.5	6.5	1) Backend programming 2) Discussed the development plan in detail
14.	Mission Control Workshop and Team meeting	25/5/2019	6	6	1) Game development with Unity 2) Created project on firebase and GitHub
15.	Team meeting	27/5/2019	4	4	The front-end design of starting page, login and register page, the main page
16.	Team meeting	29/5/2019	2	2	1) Swift learning 2) Github working
17.	Mission Control Workshop and project consultation	1/6/2019	5	5	1) UI/UX 2) Project consultation and refinement 3) Team discussion on product design improvement

Total

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88	88	176