



# BISIKLETRO

ITERUM

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## Bisikletro

Due to the emission of greenhouse gases mainly caused by human activities, the effects of global warming have been constantly increasing. Unless we provide solutions to reverse or slow down the effects of climate change, it will ruin the lives of many. Iterum decided to formulate an application that would help reduce the emission of carbon dioxide. BISIKLETRO is an application where the users can help the nature by simply completing their cycling. A single tree can absorb 48 pounds of carbon emissions per year, the Bisikletro will use this knowledge as the foundation of the innovation. For kilometer a cyclist travel, it will earn them a point which can be redeemed for rewards e.g food and drinks, discounted vouchers for gears, raffle, donations. As they redeem rewards, they would gain a percent to unlock their own tree to be planted. A cyclist may accumulate one or more trees. In planting the trees, Iterum would be in partnership with accredited non-government organization(NGOs). Moreover, users of the innovation would be able to record routes, keep track, analyze activities, formulate a social group, take a challenge, events, and post their achievements.

BISIKLETRO' sub-goal is encourage and train promising cyclist as well those people who wants to make cycling as their hobby. At the same time, biking instead of using fuel-dependent vehicle as a means of transportation for their short-distance travels. Bisikletro will provide a reality wherein one can breathe an unpolluted air in urban areas.



# BISIKLETRO

## Problem Statement

Carbon Dioxide Emissions has been a hot topic by numerous climate environmentalists, it significantly affects the climate of our planet by causing greenhouse effect. It confines the sun's heat and causes warmer temperature globally<sup>1</sup>. In 2019 alone, Philippines has emitted 150million tons of carbon dioxide with a growth of 3.90% a year, main sources of these growth are as follows: gas, coals, and deforestation <sup>2</sup>. Moreover, the effects of the greenhouse effect will affect the climate, pollution of air, food supply, and wild wildfires. If the increase of carbon emissions went unchanged, the Philippines' well-being will be at risk, civilians will be constant risk of health hazard and average lifespan will decrease<sup>3</sup>.

Carbon dioxide emissions can be reduced by constantly planting trees for they absorb carbon dioxide and emits oxygen in return and reducing our carbon foot-prints e.g. use of fuels<sup>4</sup> and a tree can absorb 48 pounds of carbon emissions per year enough<sup>5</sup>. In line with these, alternatives are to be required to reduce the sources of carbon dioxide. In line with this, the BISIKLETRO would address the existing problem through its effective function and solution by having providing the user its own tree which would absorb carbon emissions.

## Rationale

The main objective for conducting the project BISIKLETRO is not to only alleviate the increasing Carbon Emissions, in United states alone, fuel-dependent vehicles accounts for the 1/5 of their carbon emissions<sup>6</sup>, hence BISIKLETRO shall also act as a medium to reduce the carbon emissions significantly by encouragement the use bicycles instead of fuel-dependent vehicles for their short-distance travels. In line with this, the BISIKLETRO aims to initiate a counter-action towards the deforestation through utilization of distance-travelled by cyclists. A mobile application to combat the sources of risk towards the well-being of the people and planet, especially the Philippines. Additionally, There have been a surge of cyclist since the beginning of quarantine, more people have been switching to the use of bikes due to the shortage of public transportation. As they use the bikes, they have grown accustomed to it and continue to bike<sup>7</sup>. Targeting the existing and growing market, cyclists will maximize the intended effect and benefits of the BISIKLETRO.



## Significance of the Project

Carbon dioxide is the primary reason from greenhouse gases which affects our climate, it became outbalance because of the activities of human from fossil fuel combustion, industrial processes and land use changes. From 2019, the emission in the Philippines was 150.6 million tons from 25.7 million tons in 1970<sup>2</sup>. Fortunately, from 2020 it decreased to 5-8%, The reduce of Carbon Dioxide are the cause of lockdown, people simply stayed on their homes, lessening carbon inducing acts; but it's only temporary. In 2021, the Philippines vehicles are gradually increasing because of modified general community quarantine. Commercials are more open that is why people people tend to go outside for leisure. The BISIKLETRO app has a similarity with *Strava* which record your routes, map and analyze your activity. It has identical function with the innovation but the innovation will offer more functionalities and benefits for the non-members and members of the BISIKLETRO. Moreover, goal of BISIKLETRO will not limit itself for helping people to stay fit but to reduce the carbon emissions while maximizing the benefits (e.g fitness and social groups). Every kilometers of cycling will accumulate points, these points can be converted for trees and other products.

## Market Study

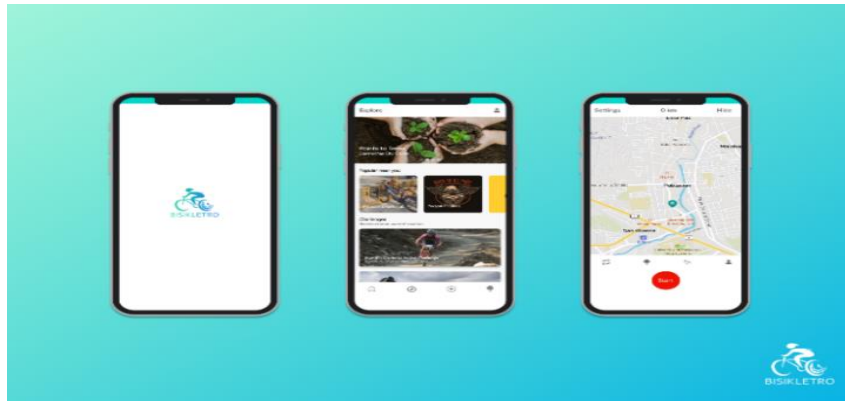
The primary target market of the BISIKLETRO are the cyclists. Cyclist as users will undergo a systemic phenomenon in accordance with the application's function. The cyclists will not only uphold the idea of reducing the carbon emissions, but also benefit from the act of it as well. They would be able to post their achievements, formulate a social group, their bike, and share and learn new bike routes. Moreover, they would be able to receive relevant advertisements in regards with their route taken. In addition, the subscribed cyclists will receive discounts or voucher to the affiliated bike shops to suit their needs. The BISIKLETRO will further emphasize the existing and growing market of Cyclists<sup>6</sup> and become a new alternative application for them. Additionally, anyone can be the part of the growing target market as long as they use the application or have a gear to do. The fruits and vegetables produced by trees will be utilized by Iterum for the sustainability of the innovation other than advertisements and memberships.

## Innovation Description

Earning points through cycling and exchange points for trees and others through the point-redemption system of the app. The user will attain a point for five kilometers distance traveled, to plant a tree it needs 50 points a total of 100km of travel to plant a single tree. The average distance travelled by cyclist is 29km<sup>8</sup>, the innovators made it a 250km goal to redeem a tree to challenge them for their fitness and maximizing their social efforts and groups.



However, they can also use the points to redeem other products, for they would still be able add a percentage to their tree. Reducing the carbon emission from vehicles by using bicycle as a mean of transportation, leisure and reduce the amount of carbon dioxide by planting trees.



**Figure 1.** Bisikletro App

## Methodology

The BISIKLETRO goal is to reduce the carbon emission of the country by using bicycles and help to reduce greenhouse gasses. Henceforth, it will require a number of users. To achieve it the app will be promoted to several social media platforms like Facebook and sponsor a YouTube video of a famous bike vlogger to get a lot of views, reach, and engagement from target market(a paid advertisement). The app also provides a 30 days' free trial without entering any card details. The app development consists of detailed planning for user experience and usage of google technologies.

**UI/ UX Design.** are derived from the design or theme of Google, because it gives the user a familiarity of using the app. They may not feel pressure using it because of the friendliness of BISIKLETRO. Each elements of the app were decided carefully to make it more friendly for the users that even not a sporty person will recognize, it will also follows the latest design to make it more to attract more users for its trend. The picture below shows the low fidelity of BISIKLETRO.



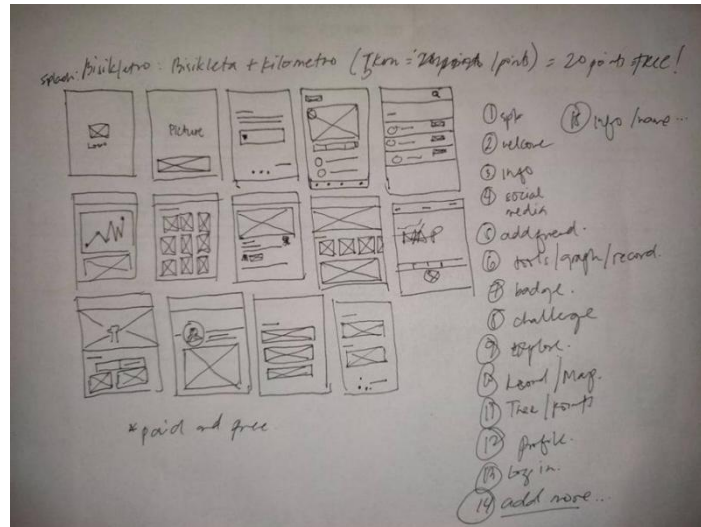


Figure 4. Low fidelity of bisikletro

**Google Technologies** using Flutter to create mobile app, it provides an easy way to create beautiful designs without coding a lot of lines because of tons of boilerplates that Flutter offers. It serves as the alternate of doing native using java because it is hard to absorb. Firebase is the database where data and files can save, it also quick to integrate with Flutter because of its official library it does not need to do it manually using HTTP requests. Google cloud to be used as a map library and using NodeJs for server side.

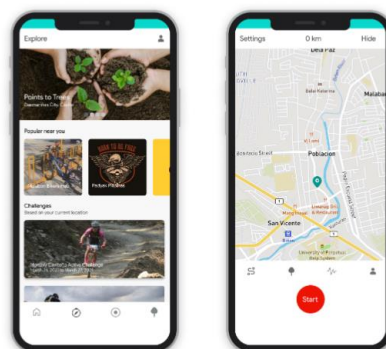


Figure 2. Google Technologies



Flow Chart

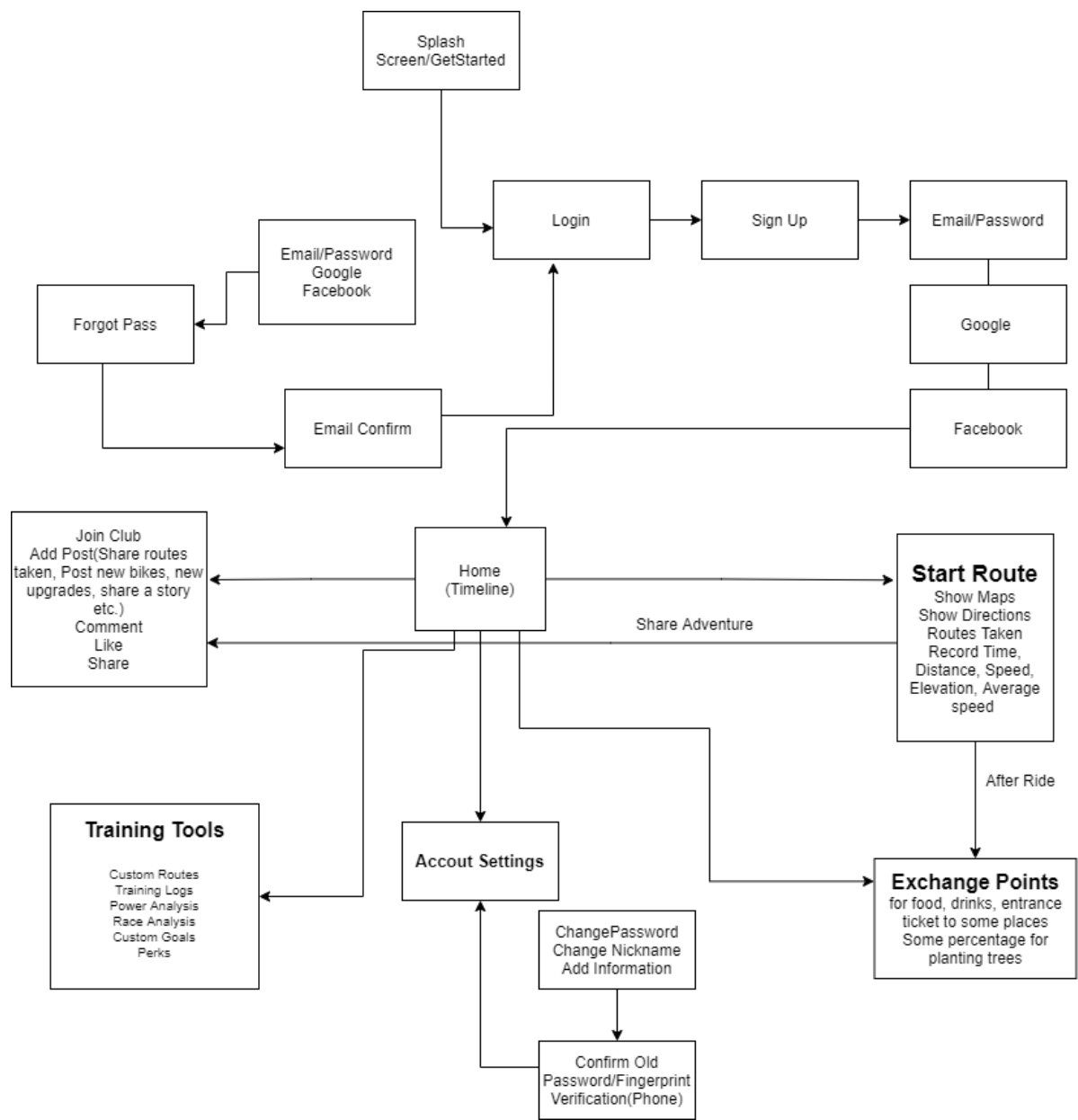


Figure 3. Flow chart of the app

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