



Team ID : C23-PR523

Active Team Member

- 1. (ML) M309DKX4405 Muhammad Zakaria Saputra Universitas Pendidikan Indonesia
- 2. (ML) M181DSX0326 Muhammad Irham Luthfi Universitas Indonesia
- 3. (ML) M078DSY0434 Elma Anjelina Sondakh Sekolah Tinggi Ilmu Ekonomi Ekuitas
- 4. (CC) C309DSX2193 D'Riski Maulana Universitas Pendidikan Indonesia
- 5. (CC) C038DSX1358 Arya Abdul Azis Institut Teknologi Sepuluh Nopember
- 6. (MD) A309DKX4026 Novaldi Sandi Ago Universitas Pendidikan Indonesia

Final Selected Themes:

Water, Forest, and Natural Resources

Title of the Project:

Decorative Plant Marketplace with Plant Identification Feature (BibitUnggul.id)

Excecutive Summary/Abstract:

Our project aims to develop an e-commerce mobile application that allows users to purchase decorative plants, while also utilizing machine learning technology to identify unknown plants. The lack of a specific platform for buying and selling decorative plants, combined with the common problem of individuals being unsure of the specific type or name of a plant they wish to purchase, served as the inspiration for our idea. Our app will provide a user-friendly interface for customers to browse, purchase and review a variety of decorative plants, as well as enable them to take a photo of an unknown plant to identify it using our machine learning feature. Through our research, we hope to answer the questions regarding the demand for an e-commerce platform that specializes in decorative plants and the effectiveness of the machine learning feature in identifying different types of decorative plants. We believe that our project could greatly benefit individuals who enjoy purchasing and caring for decorative plants, but struggle with identifying them.

How did your team come up with this project?

This project was initiated based on the observation that many people have a hobby of collecting decorative plants, and according to reliable journals on the decorative plant industry in Indonesia, there is potential for this industry to exist in the global market. Therefore, the common problem of individuals being unsure of the specific type or name of a plant they wish to purchase also served as the inspiration for our idea. With the application that we will develop, we aim to facilitate the growth of the decorative plant





market and educate customers by helping them identify the decorative plants they wish to purchase.

Project Scope & Deliverables:

The scope of the project is to develop a Decorative Plant Marketplace with a Plant Identification Feature that allows users to search for and identify plants based on visual characteristics. The marketplace will enable users to browse, search, and purchase decorative plants from various vendors. Additionally, the website will have a comprehensive database of plant species and their visual characteristics, which will be used for the Plant Identification Feature.

Deliverables:

ML:

- 1. Prepare dataset & data gathering: 4 days
- 2. Preprocessing & cleaning data: 3 days
- 3. Modelling: 10 days
- 4. Optimization: 4 days
- 5. Deployment & Integration: 3 days

CC:

- 1. Cloud Architecture Design Diagram: 6 days
- 2. Entity Relationship Diagram: 6 days
- 3. Build Database: 5 days
- 4. Build Backend: 14 days
- 5. Deployment: 7 days

MD:

- 1. Create a workflow program: 2 days
- 2. Create wireframe app: 2 days
- 3. Development: 18 days
- 4. Testing: 5 days

All:

- 1. Report: 2 days
- 2. UAT: 2 days

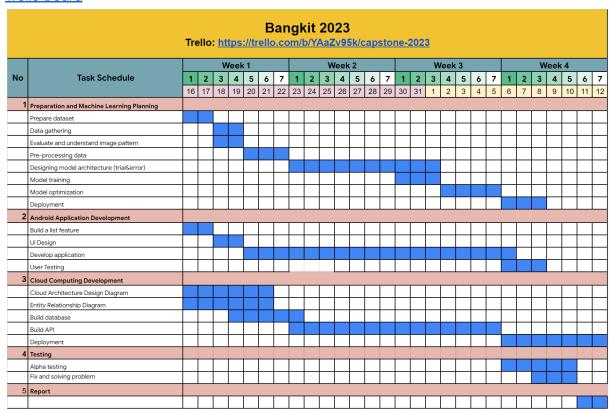




Project Schedule:

➡ Project Schedule Bangkit

Trello Board



Based on your team's knowledge, what tools/IDE/Library and resources that your team will use to solve the problem?

- Tensorflow
- Tflite
- Firebase
- Android Studio
- Retrofit
- Glide
- Figma
- Postman
- NodeJS
- ExpressJS





Based on your knowledge and explorations, what will your team need support for?

- Need free and legal decorative plant datasets.
- Need a mentor who can support our project with knowledge and experience in Android, Machine learning, and Cloud.
- Need an expert mentor with an e-commerce business background to help enhance our business and improve our idea.

Based on your knowledge and explorations, tell us the Machine Learning Part of your Capstone!

We will train a machine learning model to identify decorative plants from user-submitted images using CNN. We will create a labeled dataset using public datasets, crowdsourcing, or nursery partnerships. To improve the model's efficiency, we will preprocess images. After training the model using supervised learning with TensorFlow, we will evaluate its performance using various metrics and perform cross-validation.

Based on your knowledge and explorations, tell us the Mobile Development Part of your capstone?

We will create a prototype using figma as the application display design after that we will create an android application using kotlin and jetpack compose. We will also connect the app with the backend using retrofit to connect the api.

Based on your knowledge and explorations, tell us the Cloud/Web/Frontend/Backend Part of your capstone?

We will build the backend for the application using NodeJS with the Express library and use CloudSQL as the database service. We will also use Cloud Storage to store image data and only store the public URL in Cloud SQL. The deployment of the backend and machine learning models will use the Cloud Run service.

Based on your team's planning, is there any identifiable potential Risk or Issue related to your project?

- Various types of plants with similar shapes, colors, and sizes can make it difficult to classify images. Therefore, there must be many image datasets for each type of plant so that the accuracy of image detection is increased.
- Blurry, under/over exposure, and unclear data from the user can affect predicted
- Our team may encounter technical challenges such as compatibility issues, data management, scalability, and security.





Any other notes/remarks we should consider on your team's application

Our project has the potential to provide valuable data on the market for decorative plants, and could be expanded to include other features such as plant care tips and personalized recommendations.