**Please make a copy of this document (do not ask for edit permissions)**Replace the highlighted and/or instruction part of this proposal with your team’s answers.   
Please see the limits of each answer below. There will be no limit on page numbers, but please be consistent with the limitation for each question.

A **Problem Statement** is a concise description of an issue to be addressed or a condition to be improved upon. It identified the gap between the current (problem) state and desired (goal) form of a process or product. Focusing on the facts, the problem statement should be designed to address the Five Ws. The first condition of solving a problem is understanding the problem, which can be done using a problem statement. [Wikipedia]

A **Research question** is a question that a research project sets out to answer. Choosing a research question is an essential element of both quantitative and qualitative research. An investigation will require data collection and analysis, and the methodology for this will vary widely. Good research questions seek to improve knowledge on an important topic and are usually narrow and specific. [Wikipedia]

**Team ID :** C23-PC639

**Team Member :** (Pelase adjust according to your team members)

1. (MD) A037DSY1086 – Iriel Aureleo – Institut Teknologi Perusahaan Listrik Negara - [Active]
2. (ML) M366DSX2156 – Ahmad Rosyihuddin – Universitas Trunojoyo - [Active]
3. (ML) M151DSX1562 – Matyus Garbela Ismanto – Universitas Brawijaya - [Active]
4. (ML) M287DSX0510 – Rizky Pratama Syahrul Ramadhan – Universitas Negeri Surabaya - [Active]
5. (CC) C114DSX3336 – Grevalby – STMIK Rosma - [Active]
6. (CC) C356DSX0941 – Micko Agung Pratama – Universitas Teknokrat Indonesia - [Active]

**Final Selected Themes:**

Food Accessibility, Agribusiness, and Food Security

**Title of the Project:**

[Name of your project]

Identification of rice plant diseases

**Excecutive Summary/Abstract:**

A short (~1000 chars/200 words) abstract, **describing your project**. Includes your **Problem Statement, Research Questions, background information**, and **why** your team wants to tackle the problem.

[Try to build a painkiller instead of a vitamin](https://www.entrepreneur.com/article/230736). If you’re unsure, you may use techniques such as [design thinking](https://www.thinkwithgoogle.com/intl/en-apac/future-of-marketing/creativity/design-thinking-principles/#:~:text=At%20Google%2C%20design%20thinking%20helps,methodologies%20for%20interviewing%20potential%20employees.) or its [alternatives](https://delightfuldesignstudio.com/alternatives-to-design-thinking/).

The identification of rice plant diseases is a crucial problem faced by farmers in Indonesia. Plant diseases can significantly reduce crop yield and quality, resulting in economic losses and food insecurity. Our team aims to develop an automated system to detect and identify the most common diseases affecting rice plants.

The project's **problem statement** is to reduce crop losses due to plant diseases by providing an accurate and timely diagnosis to farmers. Our **research questions** include: How can we develop a system that accurately identifies rice plant diseases? What machine learning algorithms and techniques can we use to improve disease detection accuracy?

To address this problem, we will use deep learning techniques to develop a robust image recognition model that can accurately identify various rice plant diseases. We will train the model on a large dataset of rice plant images, including healthy plants and those infected with common diseases.

**Our team wants to tackle this problem because** plant diseases are a significant threat to food security and the Indonesian economy. By providing farmers with a reliable and efficient tool to diagnose rice plant diseases, we can improve crop yields, reduce economic losses, and contribute to food security. Our project's ultimate goal is to help farmers identify and treat plant diseases early, leading to a more sustainable and productive agricultural sector.

**How did your team come up with this project?**

[your answer, (Paragraph, up to 100 words)]

Our team came up with the idea for this project after conducting research on the challenges faced by farmers in the agricultural sector. We discovered that plant diseases are a significant problem that affects crop yield and quality, leading to economic losses and food insecurity. In particular.

We also found that there is a growing interest in using machine learning and artificial intelligence in agriculture, particularly in developing automated systems to detect and diagnose plant diseases. Our team has a background in computer science and machine learning, so we saw an opportunity to apply our skills to address this critical issue.

By combining our expertise with our passion for creating positive social impact, we decided to undertake this project to develop an automated system for the identification of rice plant diseases. We believe that our project can contribute to improving food security, reducing economic losses for farmers, and promoting sustainable agricultural practices.

**Project Scope & Deliverables:**

The outline of the project’s boundaries and description of how your team will break down the task and responsibilities into measurable deliverables. Detailed scope (daily) is preferable. But weekly is also acceptable. **Please be advised that you have approx. a month to complete this project. You can use a table or list of tasks and responsibilities or deliverables.**

**Project Schedule:**

A high-level view of project tasks and milestones (Gantt charts or timeline should be handy for this). Make sure that the milestones are already agreed upon between your teammates. Try to keep everyone in check at all times :) Making a timeline is easy. **Making a sensible timeline that your teammates can comply with, is easier said than done.** :)

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

[your answer, (List of tools, IDE, Library, platform, API, resources]

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

[your answer, (List of items, mentors, data, supporting resources)]

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

[your answer, Paragraph, up to 50 words.

* AutoML or similar automated model creation and pre-built models are prohibited.
* Team has to train their own model, or use transfer learning.
* You may use the AI platform, tensorflow.js, TFLite, and other alternatives to deploy your model. Please avoid Google colab or local notebooks/files for the production/demo.
* Using Tensorflow is mandatory. You may use other libraries on top of Tensorflow.

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

[your answer, Paragraph, up to 50 words.

* Webview, Appinventor, and any other automated wizard/app-creation are prohibited.
* Team has to use native Kotlin/Java/C++ and Android Studio to create the Android app.
* Using flutter, react, or other multiplatform-based is allowed for creation of app in other platform (e.g. Windows/iOS/Linux) on top of the native Android.
* You may attach Figma or other links related to this plan.

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

[your answer, Paragraph, up to 50 words.

* There is no limitation on programming languages, libraries, or frameworks.
* Team has to create at least **1 private API or endpoint** including authentication, authorization, and API/endpoint documentation.
* Team may use any **APIs or third party services available**, but you need to write documentation on how & why you use that specific API.
* On unstable API or services, please plan to have alternative endpoints and/or create your own data generator to make sure your project works on demo/judging day.
* You may attach Figma or other links related to this plan.

**Based on your team’s planning, is there any identifiable potential Risk or Issue related to your project?**A list of factors that could derail the project and a plan for how issues will be identified, addressed, and controlled. Probably also good if you already have plan(s) for rectifying the identified factors or threats. up to 100 words)

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

[your answer, (Optional, Paragraph, up to 100 words)]