Project Plan
Product-based Capstone Project

Problem Statement

SME (Small and Medium Enterprises) play an important role in the economy but often face challenges in their efforts to promote their products and services. Many SME have limited resources and limited access to professional design skills, making it difficult to create effective promotions. They may not have the large budget to hire a professional editor or graphic designer, and they often don't have access to the templates or tools needed to create compelling promotional content. As a result, SME often find it difficult to market their products or services properly, which can limit their business growth. The solution needed was to provide SME with access to a collection of simple and easy-to-use creative templates. We can help them overcome this problem and give them the tools to create more effective promotions without having to rely on expensive professional services, so they can create quality advertising content.

Research question

1. What are the specific factors contributing to the difficulty of SMEs in finding suitable platforms or promotional media for their products in the Indonesian market?
2. What benefits can small and medium businesses expect if they have access to a collection of simple, easy-to-use creative templates?
3. How can providing promotional models increase the competitiveness of SMEs in marketing their products or services?
4. To what extent can the introduction of a specialized marketplace platform for traditional food products benefit SMEs in Indonesia?
5. What obstacles can be encountered when developing and distributing a collection of advertising templates for small and medium businesses?
6. What is the impact of providing advertising models on the growth and sustainability of SMEs?
7. How does the use of promotional models compare to traditional promotional methods in terms of effectiveness and cost?

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Team ID : **CH2-PS240**

Team Member : Active

1. **M524BSY0282 – Muhammad Iskandar – Politeknik Negeri Banjarmasin**
2. **M247BSY0284 – M. Rizki Simanullang – Universitas Lambung Mangkurat**
3. **M314BSY0498 – Yaspin Andika Muhamad Nur Cholis – Universitas Singaperbangsa Karawang**
4. **C247BSX3446 – Annisa Maghfirah – Universitas Lambung Mangkurat**
5. **C183BSY3482 – Imam Noor Arifin – Universitas Amikom Yogyakarta**
6. **A350BSY2233 – Afwan Sutdrajat – Universitas Bumigora**
7. **A502BSX2874 - Siti Romadiah - Institut Bisnis dan Teknologi Indonesia**

Team Member : Inactive

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Final Selected Themes:
SME Empowerment

Title of the Project:
PasKita

Executive Summary/Abstract:

One of the problems faced by SME players is that they find it difficult to market and promote their products and due to several factors such as the lack of platforms or promotional media so that they have to compete against large companies and their lack of knowledge in processing their products to be attractive in the eyes of consumers. Here we will try to solve these problems and help provide a special marketplace platform for SME and help them to process their products to be attractive in the eyes of consumers. In Indonesia itself, of course, we already know many marketplaces such as Shoope or Tokopedia, but those marketplaces tend to be general and here we make solutions to specialize in marketplaces that sell traditional food. In this application we also provide editing features for producers so that they can process products to make them more attractive in the eyes of consumers. Very beneficial to both parties, isn't it.

How did your team come up with this project?

After some debate and brainstorming, we finally decided to focus on SME's as our topic and address the problems described in this document. If told briefly, we decided to raise this issue because of the rapid changes that are happening at a time when many small and medium enterprises cannot compete through it. One of the biggest problems that we are trying to address and provide solutions for, is the problem in promoting their products. Many are using old and less innovative templates, or even just displaying their products as they are, without any promotional enhancements to complement them.

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Project Scope & Deliverables:

Week	Task	Deliverables
1	Android Development	
	Create User Flow and Create Design Guideline	User Flow and Identity Design For Application
	Design Mock Up and Analyze the Design	UI/UX Design and Requirement Analysis For Application
	Machine Learning	
	Decide what features to use for the recommendation system based on research	List of features that will be used as deciding variables
	Collecting data based on the decided feature	Dataset with the list of features that will be used
	Cloud Computing	
	Creating billing account for managing cost	Billing account in Google Cloud Platform and consider the resources to be used
2	Android Development	
	Translate the Design to Application	Application Design
	Machine Learning	
	Research for best recommendation algorithm for the problem case	Chosen recommendation algorithm
	Recommendation system algorithm	Plan for code implementation

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	code implementation planning	
	Cloud Computing	
	Create backend services and integrate with necessary API	REST API and Cloud API
	Configure Authentication and Databases	Cloud identity authentication and Create database
3	Android Development	
	Connect Application to Cloud	Android App Cloud-based
	Machine Learning	
	Planning realization / creating and training the recommendation system model and deployment	Recommendation system model ready to be deployed
	Recommendation system model testing and optimization	Optimized recommendation system model
	Cloud Computing	
	Integrate the application with Cloud Platform	Deploying application in GCP and Integrate each path of projects
4	Finishing Project	Perform testing and create documentation

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Project Schedule:

TIMELINE

ID	Task Name	Duration (in days)	Start	Finish	Assigned to
0	Project Capstone	56	Jum, 27 Oktober 23	Jum, 22 Desember 23	All Members
1	Initiation	7	Jum, 27 Oktober 23	Jum, 03 November 23	All Members
1.1	Discussion with Team	7	Jum, 27 Oktober 23	Jum, 03 November 23	All Members
1.2	Create Project Plan Document	7	Jum, 27 Oktober 23	Jum, 03 November 23	All Members
2	Planning	11	Sen, 30 Oktober 23	Jum, 10 November 23	All Members
2.1	Analysis	4	Sen, 30 Oktober 23	Jum, 03 November 23	All Members
2.2	Define Functional Requirements	4	Sen, 30 Oktober 23	Jum, 03 November 23	All Members
2.3	Dataset Exploration	9	Rab, 01 November 23	Jum, 10 November 23	All Members
3	Execution	30	Rab, 08 November 23	Jum, 08 Desember 23	All Members
3.1	Dataset Cleaning and Preparation	9	Rab, 08 November 23	Jum, 17 November 23	ML Team
3.2	UI/UX Design	7	Jum, 10 November 23	Jum, 17 November 23	MD Team
3.3	Prototyping	2	Rab, 15 November 23	Jum, 17 November 23	MD Team
3.4	Modeling	5	Rab, 15 November 23	Sen, 20 November 23	ML Team
3.5	Model Evaluation	6	Sab, 18 November 23	Jum, 24 November 23	ML Team
3.6	Implementing Design to Code	17	Jum, 17 November 23	Sen, 04 Desember 23	MD Team
3.7	API Development	14	Jum, 10 November 23	Jum, 24 November 23	CC Team
3.8	Integration Apps	7	Sen, 27 November 23	Sen, 04 Desember 23	All Members
3.9	Testing	7	Jum, 01 Desember 23	Jum, 08 Desember 23	All Members
3.1	Maintenance	4	Sen, 04 Desember 23	Jum, 08 Desember 23	All Members
4	*Controlling*	28	Jum, 10 November 23	Jum, 08 Desember 23	All Members
4.1	Controlling Machine Learning Part	26	Jum, 10 November 23	Rab, 06 Desember 23	ML Team
4.2	Controlling Mobile Development Part	26	Jum, 10 November 23	Rab, 06 Desember 23	MD Team
4.3	Controlling Cloud Computing Part	26	Jum, 10 November 23	Rab, 06 Desember 23	CC Team
4.4	Controlling Integration App	11	Sen, 27 November 23	Jum, 08 Desember 23	All Members
5	Closing	14	Rab, 06 Desember 23	Rab, 20 Desember 23	All Members
5.1	Deployment App	2	Rab, 06 Desember 23	Jum, 08 Desember 23	All Members
5.2	Submission of the Deliverables application	2	Sen, 11 Desember 23	Rab, 13 Desember 23	All Members
5.3	Evaluation	6	Kam, 14 Desember 23	Rab, 20 Desember 23	All Members

Link Project Schedule:

Project Schedule

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

Tools and Library:

- **Cloud Computing**
  - Visual Studio Code (Create and manage APIs & Backend)
  - Google Cloud Platform (Provide cloud infrastructure and deploy projects)
  - Git and Github (Facilitate collaboration and project storage)
  - Firebase (Realtime Database)
  - Docker (Package and execute project components)
  - Postman (Test and document APIs)
- **Machine Learning**
  - Google Colaboratory (Collaborative development and execution of Jupyter notebooks)
  - Tensorflow (Machine learning framework for building and training models)
  - Scikit-learn (Machine learning library for classical algorithms and tools)
  - Pandas (Data cleaning, preprocessing, and transformation)
  - Numpy (Mathematical operations on large datasets)
  - Keras (Integration with TensorFlow for deep learning tasks)
  - Kaggle (Accessing datasets for training and testing machine learning models)
  - OpenAI API (For help model generate image)
  - Tableau (Creating interactive and informative visualizations of data. Communicating insights to stakeholders through dashboards.)

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- **Android Development**
    - Android Studio (Create an Android app)
    - Figma (UI/UX Design app)
    - Kotlin (Programming Language to Create Android App)
    - Rest API (Connect app with database)
    - Git And Github (Documentation and project sharing)

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

- **GCP Credit Point**, pay for GCP cloud services.
- **Mentor**, we need a mentor that can help us to understand what we need to complete this project capstone.
- **User Research**, our team needs to understand the needs and behaviors of potential users.
- **Datasets**, Our team needs user behaviour datasets, traditional Indonesian souvenir product datasets and traditional Indonesian souvenir product images datasets, and popular templates/designs datasets for our app features. These datasets are used to create a good ML model for our app.
- **Deployment of an App**, our team needs help with application deployment and integration for machine learning and cloud computing sections.

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

Machine learning is used to create product covers by generating photos. Machine learning is employed to generate product covers using photos. Based on CNNs. Our aim is to assist specific sellers who lack essential photo-editing skills. This feature enables them to sell their products more efficiently and effectively.

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

For the Mobile part we will use Kotlin as a programming language, we will create the design and flow of the application using Figma. In the development stage, we will use Firebase as the basis of our application and use Single Activity Architecture. We will also use Retrofit to connect our application to the ML part using APIs.

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

This Capstone project will utilise cloud services for hosting and scalability, with a database to store user data and promotional templates. The Frontend will handle client processing

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and communicate with the Backend via an API that includes authentication and authorisation.

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

This project has potential risks related to data security, model quality, scalability, integration with third-party APIs, API documentation, technical difficulties, regulatory compliance, user management, model version control, user training, and budget requirements.

To address these potential risks, development teams must plan carefully, prioritize data security and privacy policies, provide comprehensive documentation, conduct rigorous testing and development strictly, and have a clear contingency plan to manage issues that may arise during project development.

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.

There are several risk factors that can impede progress or even have severe implications. Some examples include a shortage of experience in each of the paths for us, as Bangkit Academy students, and a lack of understanding due to our novice background. Technical setbacks can also occur, such as the potential for failed ML models, frequent changes in UI/UX design, APIs that are not adequately deployed, or even user-side incompatibilities.

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

This project applies the minimum requirements of MVP Product in making Marketplace Applications with a template-based Generate foto product system for MSMEs with product specifications by regional specialties.

If later in its development this application gets incubated, it will expand its features by adding a feature to generate product videos in the application.