Project Plan for Bangkit 2022 Product-based Capstone

Team ID : C22-PS275

Active Team Member:

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Final Selected Themes

- **Human Healthcare & Animal Welfare**

Title of the Project:
HealthyPlate

Executive Summary/Abstract:

Recently, a lot of people just eat junk food or fast food, especially young people. In an era where everything is automatic, nutritional needs are something that needs to be considered. We see this problem and come up with the solution to make an app that will help people to make healthy food based on the ingredients they have at home, so that they will get balanced nutrition. Not only that, we also want to help people, especially university students, to make healthy meals that they can make themselves at a low cost.

The prior questions that we are going to answer are:
1) How do we define balanced nutrition?
2) How do we generate balanced nutrition recipes for the users?

How did your team come up with this project?
Our team came up with this project because we realize how important nutrition is for people, especially for young people who are still in the growth stage. Not only that, but we also realize that a lot of university students, including ourselves, just buy fast food for their daily food. The nutrition they get is not sufficient for what they should be. Therefore, many people get tired easily when they do activities. In that case, we came up with an idea about an app that can help us to decide on a healthy and balanced menu.

Project Scope & Deliverables:

Date	Scope	PIC	Deliverables
09/05	Collecting datasets from website scraping while filtering healthy	Machine Learning Team	Well-labeled images, and texts

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	recipe		
	Setting up Cloud Environment	Cloud Computing Team	Ready GCP project and invite member
	Design UI	Mobile Development Team	User Research
10/05	Collecting datasets	Machine Learning Team	Well-labeled images, and texts.
	Setting up Cloud Environment	Cloud Computing Team	Role and rules permission
	Design UI	Mobile Development Team	User Research
11/05	Collecting datasets	Machine Learning Team	Well-labeled images, and texts.
	Prepare Storage	Cloud Computing Team	Ready storage for Machine Learning datasets
	Design UI	Mobile Development	User Research

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		Team	
12/05	Collecting datasets	Machine Learning Team	Well-labeled images, and texts.
	Prepare Database	Cloud Computing Team	Ready Database for user account
	Design UI	Mobile Development Team	Wireframing
13/05	Collecting datasets	Machine Learning Team	Well-labeled images, and texts.
	Design UI	Mobile Development Team	Visual Design
14/05	Doing research and extracting the features	Machine Learning Team	List of features that can be used in training
	Design UI	Mobile Development Team	Convert design to code
15/05	Doing research and extracting the features	Machine Learning Team	Pre-processed data from features of

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			collected image
	Design UI	Mobile Development Team	Convert design to code
16/05	Doing research and extracting the features	Machine Learning Team	Pre-processed data from features of collected text
	Design UI	Mobile Development Team	Finishing Convert design to code
17/05	Determining neural network architecture	Machine Learning Team	Architecture choices from any resources
	Upload Dataset to Database	Cloud Computing Team	All Dataset uploaded in Cloud Database
18/05	Implementing the neural network architecture (Data training and validating)	Machine Learning Team	Experiment
	Login synchronization	Mobile Development Team	Processing logic for login with database
19/05	Implementing the neural network	Machine	Experiment

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	architecture (Data training and validating)	Learning Team	
	Login synchronization	Mobile Development Team	Login logic with database ready
20/05	Implementing the neural network architecture (Data training and validating)	Machine Learning Team	Experiment
	Create features 1 (Add camera feature)	Mobile Development Team	Processing logic for Camera feature
21/05	Implementing the neural network architecture (Data training and validating)	Machine Learning Team	Experiment
	Create features 1 (Add camera feature)	Mobile Development Team	Camera feature ready
22/05	Implementing the neural network architecture (Data training and validating)	Machine Learning Team	Experiment
	Create features 2 (Recipe Generate Feature)	Mobile Development Team	Processing logic for generate recipe feature

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23/05	Implementing the neural network architecture (Data training and validating)	Machine Learning Team	Experiment
	Create features 2 (Recipe Generate Feature)	Mobile Development Team	Generate recipe feature ready
24/05	Implementing the neural network architecture (Data training and validating)	Machine Learning Team	Experiment
	Create dummy database	Mobile Development Team	Processing dummy database
25/05	Implementing the neural network architecture (Data training and validating)	Machine Learning Team	Model for text-meaning (script) and model for emotion detection (audio visual) with best metrics
	Dummy Database	Mobile Development Team	Finalizing dummy database
26/05	Try to deploy in cloud	Machine Learning -	Ready-to-apply in android

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		Cloud Computing Team	
	Using database from cloud	Mobile Development Team	Ready-to-test application
27/05	Prototype Testing	All team	Test the application and getting the feedback
28/05	Evaluate the model	Machine Learning Team	Better metrics on real test
	Evaluate UX	Mobile Development Team	Redesign the UI and the features for better Experience
29/05	Evaluate the model	Machine Learning Team	Better metrics on real test
	Evaluate UX	Mobile Development Team	Redesign the UI and the features for better Experience
30/05	Evaluate the model	Machine Learning Team	Better metrics on real test
	Evaluate UX	Mobile	Redesign the UI and

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		Development Team	the features for better Experience
31/05	Evaluate the model	Machine Learning Team	Better metrics on real test
	Evaluate UX	Mobile Development Team	Finalize design UI and the features for better Experience
01/06	Deploy in cloud	Machine Learning - Cloud Computing Team	Final deliverables
	Final checking	All team	
02/06	Working on final deliverables	All team	
03/06	Working on final deliverables	All team	
04/06	Working on final deliverables	All team	
05/06	Working on final deliverables	All team	
06/06	Working on final deliverables	All team	
07/06	Working on final deliverables	All team	
08/06	Working on final deliverables	All team	

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09/06	Working on final deliverables	All team	

Project Schedule:

Task	Week 1			Week 2			Week 3			Week 4			Week 5		
I. Planning															
Project Planning															
Set Environment															
II. Research															
Research															
Collecting dataset															
III. Design															
Design UI															
Design Database															
Structuring machine learning model															
IV. Prototype and Test															

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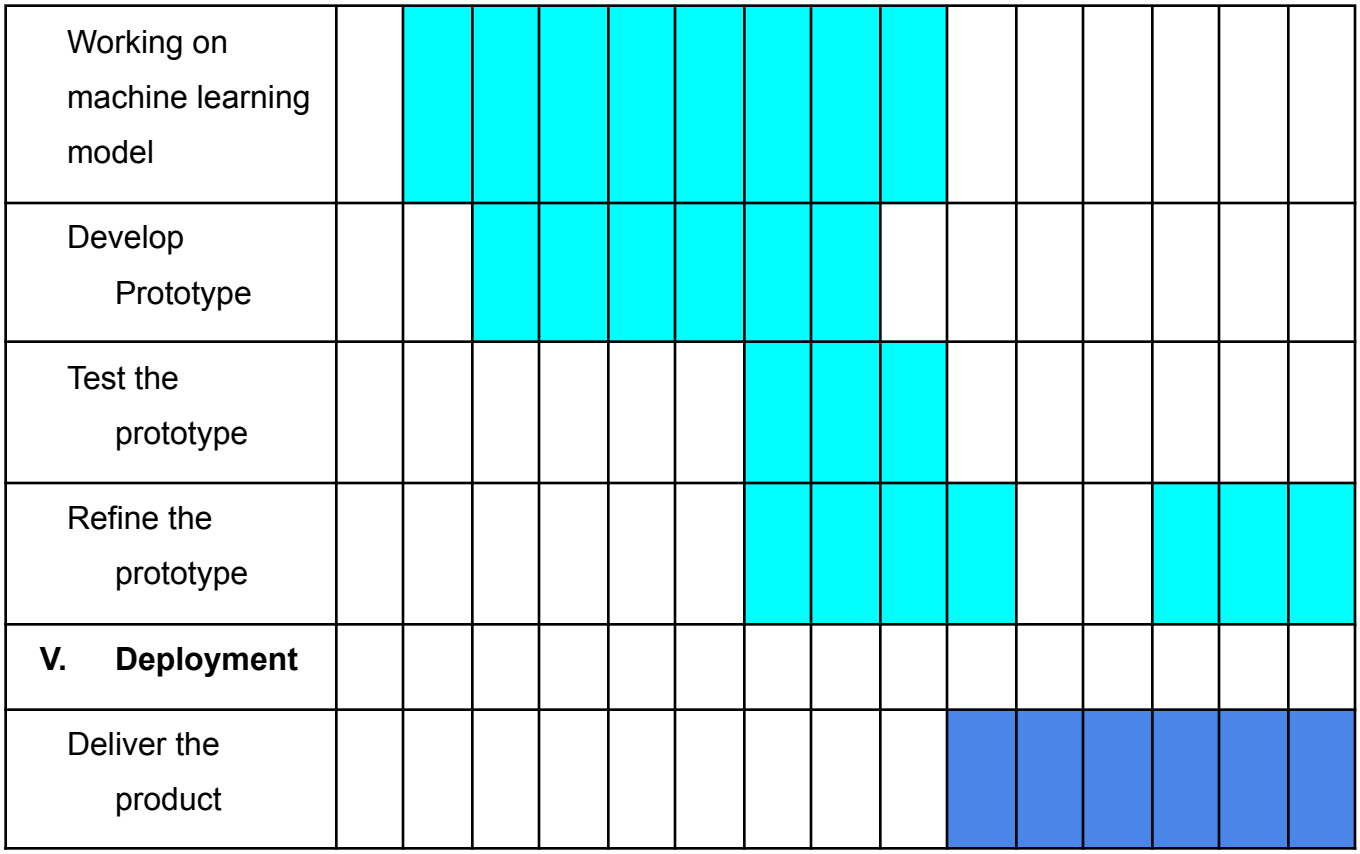

Working on machine learning model														
Develop Prototype														
Test the prototype														
Refine the prototype														
V. Deployment														
Deliver the product														

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

- Android Studio
- Visual Studio Code
- JupyterLab
- Postman
- Figma
- Github/Gitlab
- Google Cloud Platform
- Trello
- Numpy
- TensorFlow
- Keras
- Pandas

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- Matplotlib
- Firebase/MySQL

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

- Business Mentor
- Credit for GCP
- Recipe Data

Based on your knowledge and explorations, tell us the Machine Learning Part of your capstone?

The Machine Learning part is the implementation of Neural Network to generate recipes based on the input where we will use at least Tensorflow, NumPy, and Pandas libraries with JupyterLab for the production/demo. At last, the application deployment will be done with Google Cloud AI Platform.

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

The mobile development part in this project is to design the UI/UX, develop the Android application using kotlin in Android Studio, and implement the model from machine learning to application. As an android developer, we also use a database as a data store in the application.

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

The cloud part is to design microservices for application. We are going to use the GCP platform and the tools inside it. We are going to prepare the environment for machine learning to save the dataset, and deploy it to the app.

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

- Not enough dataset
  Solution: get data as much as possible until the model better
- Run out of credit on the Cloud
  Solution: use personal credit
- App or model comes to many errors
  Solution: solve as soon as possible like change the parameter or architecture
- Less development time

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Solution: simplifying or reduce feature

- Logic of app feature can't be applied
  Solution: simplifying logic
- Third parties or library can't be used
  Solution: change to another

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

Our application will make it easier for people, especially young people to have a healthier life, with the ingredients they have at home, they can eat more nutritious food than fast food or instant food, because according to the survey we have done, most of the young people prefer to eat fast food because it is not only easy to make, but also tastier, so our application will be very useful for young Indonesians so that they can have a healthier lifestyle and the food tastes delicious.