PROJECT-BASED LEARNING REPORT

TEKNOLOGI REKAYASA MULTIMEDIA
POLITEKNIK NEGERI BATAM
2024

Group Member

TEKNOLOGI REKAYASA MULTIMEDIA CLASS EVENING B

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PROJECT IDENTITY

Project Title	: Aplikasi Mobile Scale
Project Owner	: Sandi Prasetyaningsih, S.ST., M.Media
Project Manager	: Agung Riyadi, S.Si., M.Kom.
Project Co-Manager	: -
Client	: Agung Riyadi, S.Si., M.Kom.
Outputs	:

- [x] Final Report
- [x] Product: *Mobile Application*/Hardware/video*
- [x] Demo video /trailer*
- [x] Scientific Poster
- [x] Intellectual Property Rights Document
- [x] Handover Document
- [ ] Contest Proposal (optional)

Approved by,
Batam,.....2024
Project Manager*

Agung Riyadi, S.Si., M.Kom.
NIK. 119221

* The project manager must give approval by using a QR code with the team leader's student ID to distinguish between teams.

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1. PROJECT-BASED LEARNING PRODUCT

1.1 Product Description

The Mobile Scale application is a digital-based application that has the function of measuring the weight of an object of a certain size. When the scales that have been created are arranged and measured, the application will provide the results of the object being weighed and provide results in the application as well. This application has features that function to make it easier for users to use it. These features have been designed keeping in mind various functions and uses like Home from Home. So, this application is a type of measuring instrument that we are familiar with like scales, only the difference is, it is digital based.

1.2 Product Design

Product design for a mobile application project should have the following design:

1. General system description.

   This application was designed based on planning from ideas collected by combining inspiration from the appearance of other applications so that it becomes a combination that we think is appropriate and complete in terms of the number of features and benefits that users will get. We use brightly colored designs to give a good impact and also be seen as supporting the user's goals.

2. Functional system requirements.

   We used a brightly colored design in this application and also used the nuances of the Indonesian archipelago as a strategic decision, as it can have a positive impact on the user experience and supports the functional purpose of the application. The bright colors we use will attract more users' attention and create a pleasant, friendly and formal atmosphere. Additionally, brightly colored designs can also help improve readability and navigation, ensuring users can easily access and understand the app's features and functions without difficulty. By bringing these concepts together, the development team succeeded in creating an application that is not only functional but also visually attractive.

   This mobile scale application is a tool that users use to make it easier to measure the weight of finished objects, This application provides several features that help make things easier for users.

3. Product interface/architecture design.

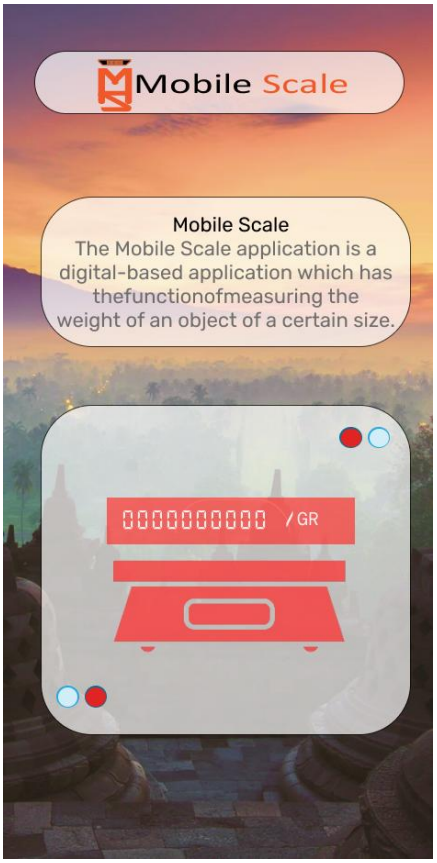

Figure 1. 3 Product interface

The design you create is designed with coloring that upholds the insight of the archipelago, so that in this design it displays a design appearance about nature that is in Indonesia. The page displayed has been designed taking into account the users' needs when using the application.

4. Programming language

Flutter is a program that is part of the open source framework used for building Responsive and feature-rich User Interface (UI). Flutter uses Dart programming language, which allows developers to create applications that run on multiple devices platforms like Android, web, and desktop use the same code base. Darts is a a modern, efficient, and easy to learn programming language, and it can also makes it easier for us to optimize the creation of high-performance applications, incl development of complex cross-platform applications. Many languages are used but only serve to support formation and refinement The Flutter program itself. One other aspect is that Flutter can unify cross-platform application development in one work environment. This means developers can save time and resources by using a single source code to produce applications that can run across multiple devices and

platforms. In addition, Flutter also allows developers to flexibly customize the user interface according to project needs, with support for rich widgets and animations.

2. PRODUCT IMPLEMENTATION

2.1 Product Implementation

Product implementation for mobile application projects:

1. Implementation for user interface / product design.

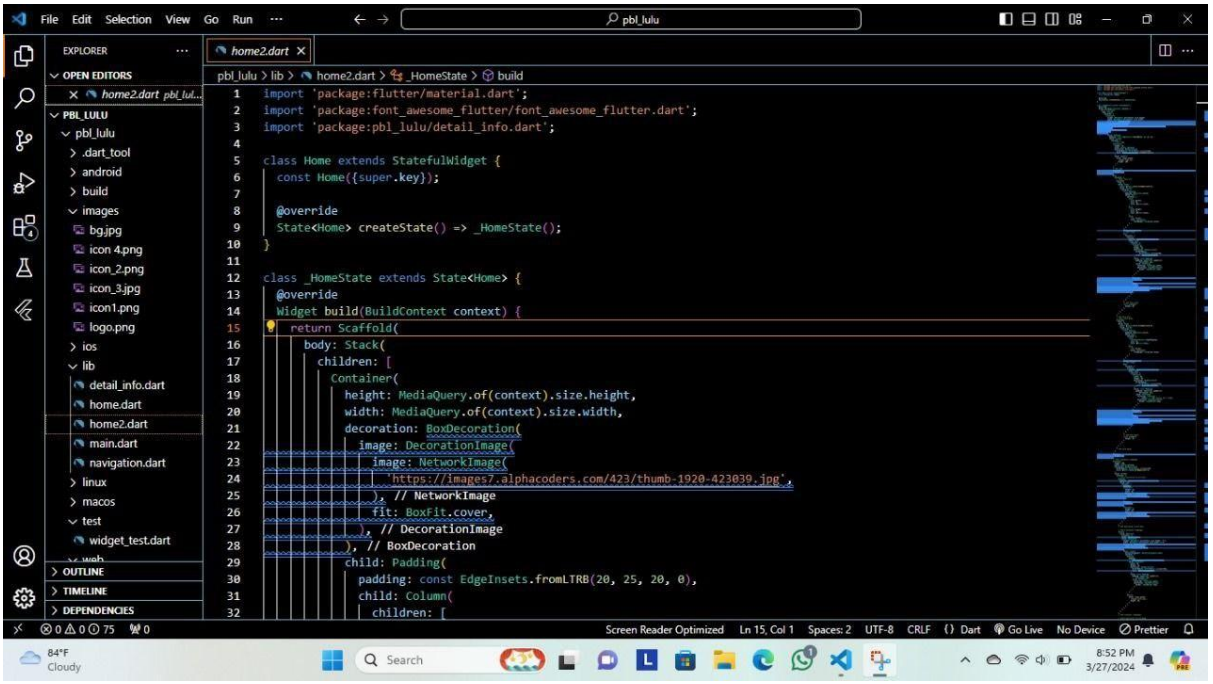

Figure 2. 1 Implementation for user interface

2. Product testing result.

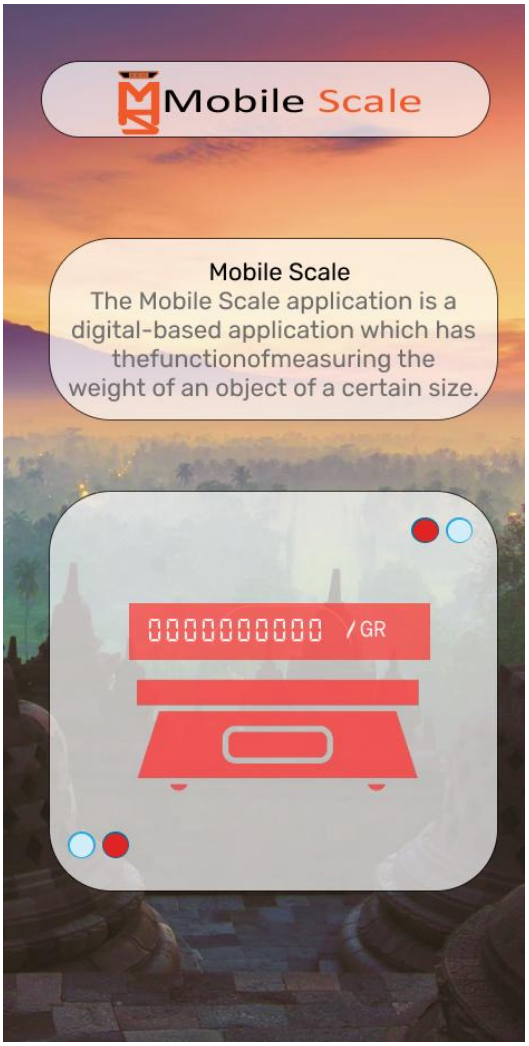

Figure 3.1 testing result home

The implementation and testing results section is a very difficult part for us. Because in this section we are trying to ensure that the design we design remains the same when implemented in program form. There are many stages to consider and adjust in this section. So the results we get in implementing the UI design we created can be as similar as possible to the testing results.

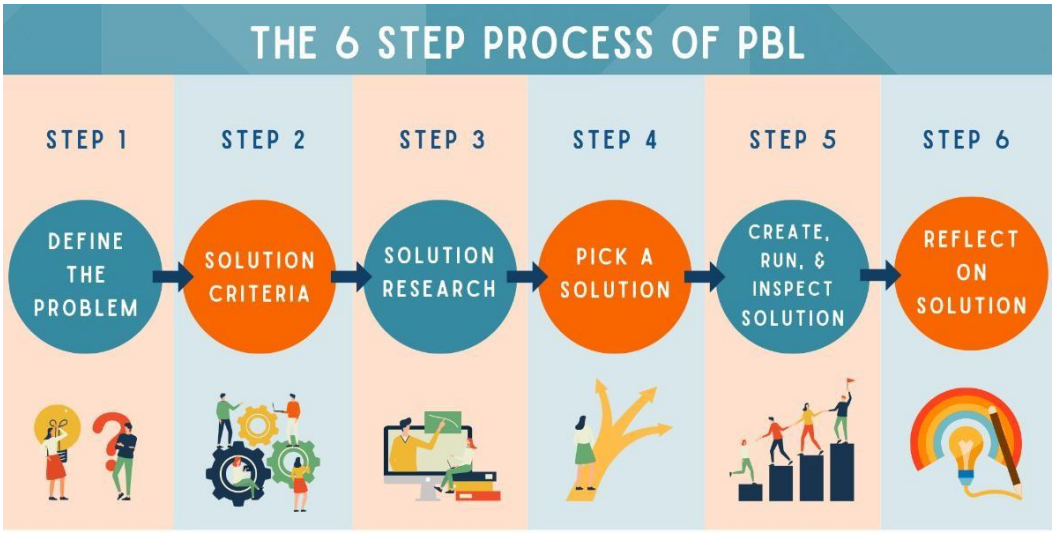

Figure 2. 4 Six Steps of PBL Process

Source: https://www.magnifylearningin.org/

Steps	Process
Step 1	Lack of understanding of the purpose of our application creation process. This problem occurred due to a lack of communication and information that we received properly, so this error occurred.
Step 2	Initially, our understanding of this application was that the application would be used to make it easier for users to weigh their body weight and would display results in the form of numbers and notes about their health via the scales. So this misunderstanding can make our PBL process move slowly and have to repeat many things, especially in the page appearance, features and functions.
Step 3	After we found out that there was a misunderstanding in the process of making our application, we immediately discussed it with the same team as our title. After we discussed it with other teams, we found results that made it possible that the application we would design and implement would be in the form of a goods scale of no more than 10kg. After that, we realized that the process we had previously carried out was very different from the original purpose of the application we were asked to create.
Step 4	After we collected the resources provided by another team with the same project manager, because we couldn't meet with the project manager due to a conflict in his schedule and class. Therefore, one of the solutions we took was to look for information from other teams and immediately notify the lecturers regarding the latest information and developments in our PBL completion process. After we discussed it with the relevant lecturers, we found direction and bright spots on how to correct this misunderstanding. And the relevant lecturers provide suggestions that can be useful in helping our team.
Step 5	So, the solution given by the relevant lecturer and the solution we took was to repeat the initial appearance starting from the design first. Because initially we used two pages with complete features, we changed it to one page where this one page covers the needs of our application. We also underwent a lot of consultations with relevant lecturers to help us achieve our targets in pursuing our PBL which had been wasted a lot on things that were not clear.
Step 6	The result of discussing our solution is that we continue to repeat and improve our application according to what we have discussed with

	the relevant lecturers. So our team can produce an application with one page that can produce the number of results from the scales of the goods being measured.

Tabel 1. 1 PBL Process

3. CONCLUSION

2.1 Obstacle

The obstacle in working on this team's PBL was the minimum number of meetings with the manpro, the schedule that we were supposed to meet was always disrupted by other schedules. This is the first time we've had a face-to-face meeting that wasn't supposed to be on our schedule.Maybe if you calculate the percentage of obstacles, this includes 50% due to limited meetings.The factor that causes this problem is that there is no opportunity or time alignment to meet the project manager.The solution may be that we will continue to try to discuss again regarding the schedules which should be intended for discussion of our team's PBL.

2.2 Learning Process

1. Statistic

In the statistics course we learn new things such as conducting surveys on designs or plans that we make to make reports and references to consider the comments given. The role of statistics in research such as determining populations and samples, sampling techniques, methods for determining sample size, data collection
methods, sampling instruments in the field, especially in the fields of informatics, multimedia and network research.

2. IOT System

In this course we learn a lot of new things, where we learn from theory to the stage of direct application of simulations of the theories. This course makes connections by connecting IoT tools which function as a link for the program to be run. These tools are what make the digital form that will be created connected to existing manual tools. And IoT is related to designing data visualization based on multimedia principles utilizing multimedia technology and integrating IoT data results processing with Multimedia technology using Weebhook and utilizing Augmented Reality and Virtual Reality as technology enabling betterinteractivity in IoT.

3. Object Programming

This course is a form of programming that runs the IoT tools. The new thing we learned was that there were many new programs to resolve various types of errors that were not read by the system. Therefore, this course has a lot of impact in solving these problems.

Object Oriented Programming and its Application in the field of programming such as in creating objects that are used to create applications as well as implementing the use of classes with the concept of inheritance, and polymorphism in objects created inapplications and the concept of object oriented programming

4. Citizenship Education

This course provides always new material about Indonesia, from the war era to the present era. These materials have had a huge impact on our knowledge about Indonesia from the smallest to the largest. The biggest impact is that we know the details of the problem so that it can be an absolute solution.

5. English Language

This course plays a big role in completing reports, because reports are written in English and the new vocabulary in this course material is very helpful. In this course we are taught many new things including how to pronounce a word correctly, write, listen, read and assemble and assemble a sentence into the correct thing.This course also provides a lot of information regarding how a student can improve their skills in the field of English through many tests. From this course we know which test criteria are appropriate for each person.

6. Mobile Device Programming

This course also studies programming, but perhaps this course focuses more on the direct implementation of programs into real forms of UI design. Contribution in mobile device programming Create a page,Using navigation,Using themes, Using icons, Using components, Using data storage, Creating and using services, Integrating with multimedia content such as images, audio or video, Creating and using servers, Creating applications connected to the internet and Distributing applications.

7. Adminitration System Computer

This course provides material about server knowledge, how to run programs with consistent and correct server continuity. A lot of new knowledge is generated from this course, one of which is understanding the response to using Linux in it.And Course Admintration System Computer is

about including: understanding, duties and responsibilities of a system administrator; Linux distributions and packages; user management on computer systems; computerresource management; and back-up computer systems.and Explain Network Configuration in Linux using static and dynamic IP addresses; Network routing configuration Implementation of services on the network (NFS, NIS, Sharing (Samba), Web Server, Mail Server, Proxy, Firewall and other services (enrichment)).

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APPENDIX I – LOGBOOK

ID	Tahapan	Detail Pengerjaan	Ouput	Mulai	Selesai	Progress	#
1	Planning	Pada minggu ini kami melakukan pertemuan pertama dengan manpro, merancang RPP, dan membahas deskripsi PBL	-	2024-02-05	2024-02-09	5%	Hapus
2	Planning	Pada minggu kedua ini kami melakukan diskusi bersama manager Proyek terkait RPP dari Proyek PBL kami dengan judul Aplikasi Mobile Scale	-	2024-02-12	2024-02-16	10%	Hapus
3	Planning	Pada minggu ini saya dan tim saya melakukan diskusi terkait RPP untuk PBL kami dan menentukan perangkat keras apa saja yang akan digunakan untuk PBL kami, serta mementukan desain yang akan kami gunakan	-	2024-02-19	2024-02-23	15%	Hapus
4	Planning	Pada minggu ini saya dan tim saya melakukan pengenalan terhadap alat Arduino UNO untuk sistem iot, dan mencoba merangkai alat tersebut	-	2024-02-26	2024-03-01	20%	Hapus
5	Implementasi	Pada minggu ini kami mempersiapkan alat IOT yang akan digunakan untuk PBL kami dan merancang UI dan flutter	-	2024-03-04	2024-03-08	25%	Hapus
6	Implementasi	Pada minggu ini kami mulai membuat aplikasi mobile kami dan mulai mencoba-coba menyambungkan dengan iot untuk PBL kami	-	2024-03-11	2024-03-15	30%	Hapus
7	Implementasi	Pada minggu ini tim kami melanjutkan flutter, program IOT, dan menyiapkan berkas-berkas untuk persiapan UTS	-	2024-03-18	2024-03-22	50%	Hapus

Figure 4.1 logbook

8	Analysis	Pada minggu ini kami melanjutkan Flutter, dan IOT. Dan melakukan konsultasi terhadap dosen pemrograman perangkat bergerak dan dosen IOT	-	2024-05-06	2024-05-10	60%	Hapus
9	Implementasi	Pada minggu ini kami masih melanjutkan program IOT dan mulai mencoba menyambungkan database ke Flutter	-	2024-05-13	2024-05-17	65%	Hapus
10	Implementasi	Pada minggu ini kami melakukan perubahan pada desain, flutter, dan melakukan perbaikan pada IOT. mulai mempersiapkan berkas berkas untuk UAS	-	2024-05-20	2024-05-24	75%	Hapus

Showing 1 to 10 of 14 entries

Previous 1 2 Next

Figure 4.2 logbook

ID	Tahapan	Detail Pengerjaan	Ouput	Mulai	Selesai	Progress	#
11	Implementasi	Pada minggu ini kami masih melanjutkan IOT, melanjutkan perbaikan pada desain, dan flutter. Mempersiapkan laporan akhir	-	2024-05-27	2024-05-31	78%	Hapus
12	Implementasi	Pada minggu ini, progres kami masih seperti minggu lalu. Melanjutkan IOT, melakukan perbaikan pada flutter, dan mempersiapkan beberapa berkas untuk UAS	-	2024-06-03	2024-06-07	80%	Hapus
13	Implementasi	Pada minggu ini kami melakukan finishing pada PBL kami aplikasi mobile scale dan melakukan finishing pada berkas berkas	-	2024-06-10	2024-06-14	85%	Hapus
14	Implementasi	Pada minggu ini kami melakukan penyambungan ulang terhadap Flutter dan IOT, melakukan finishing berkas, dan melakukan presentasi PBL	-	2024-06-17	2024-06-21	90%	Hapus

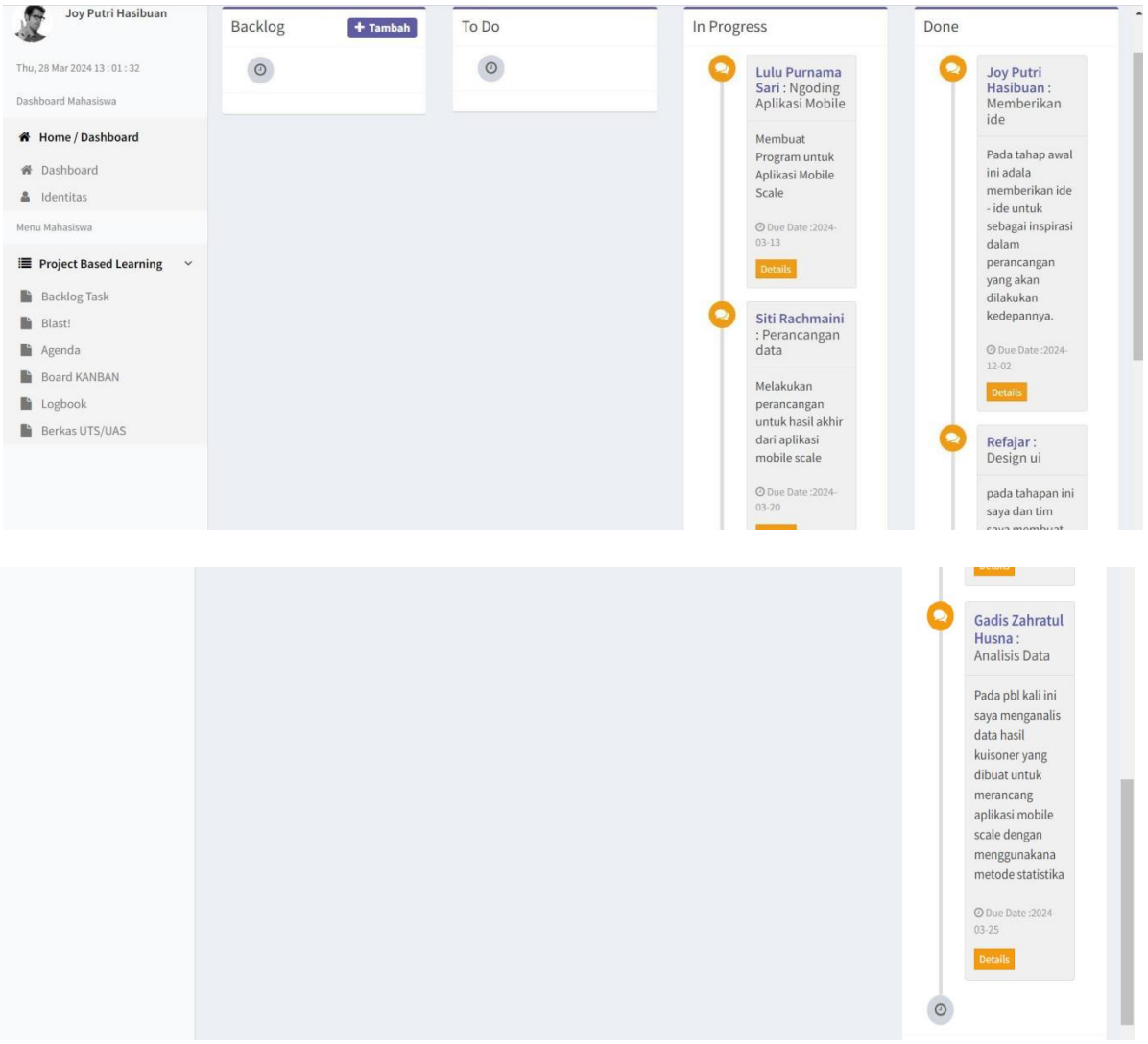
Showing 11 to 14 of 14 entries

Previous 1 2 Next

Figure 4.3 logbook

This is a form of implementation process and so that it becomes a result in the first week to the 14th week. From week 1 to week 3 are the weeks we use as a search for reference discussion for materials that will be used in our PBL. This week we had a lot of interactions with lecturers in related subjects. Then continued with weeks 4 and 5, which are weeks where we learn about the IoT that we will use and buy and complete the IoT materials that have been suggested by our project manager. In weeks 6 and 7 we started implementing starting from design, IoT and Flutter so that they became the same unit. For weeks 8-9, we continue to discuss with the lecturers to provide suggestions in improving the shortcomings in our PBL. Then in week 8 we made changes to the function of our PBL, there was a misunderstanding in our process. So in weeks 9 to 14 we only focused on repeating starting from design, Flutter and IoT which were still lacking. While correcting errors, we are preparing the files that will be used at the end of this semester.

APPENDIX III – PROJECT BOARD



APPENDIX IV – PRESENTATION SLIDES

figure 5.1 Presentation Slides

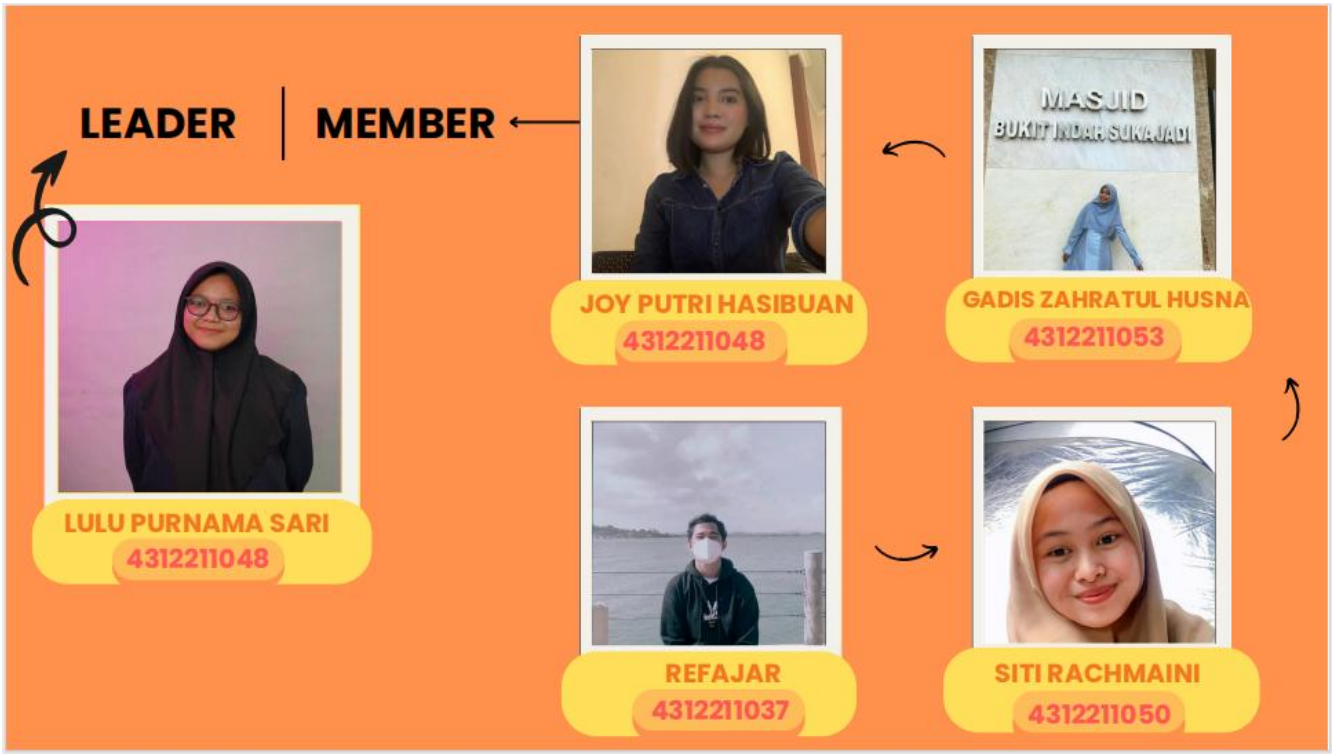


figure 5.2 Presentation Slides

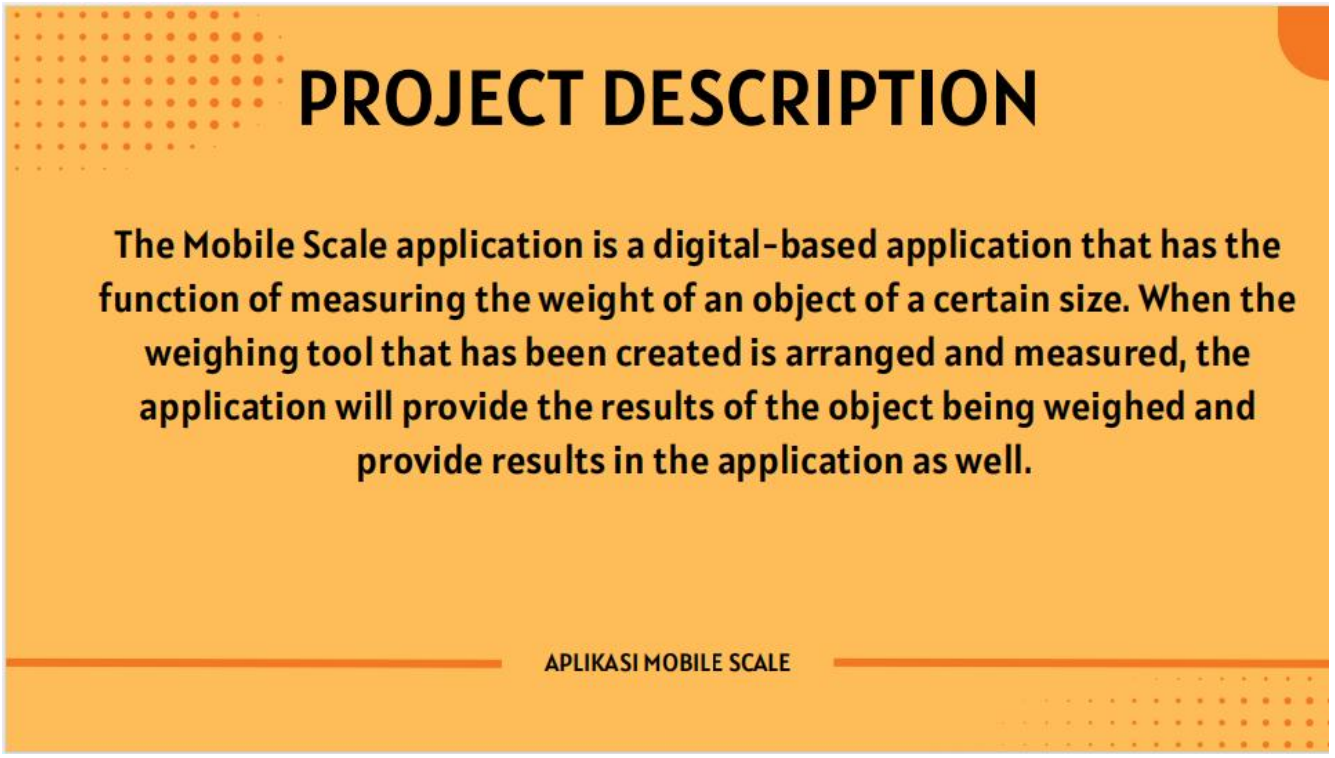


figure 5.3 Presentation Slides

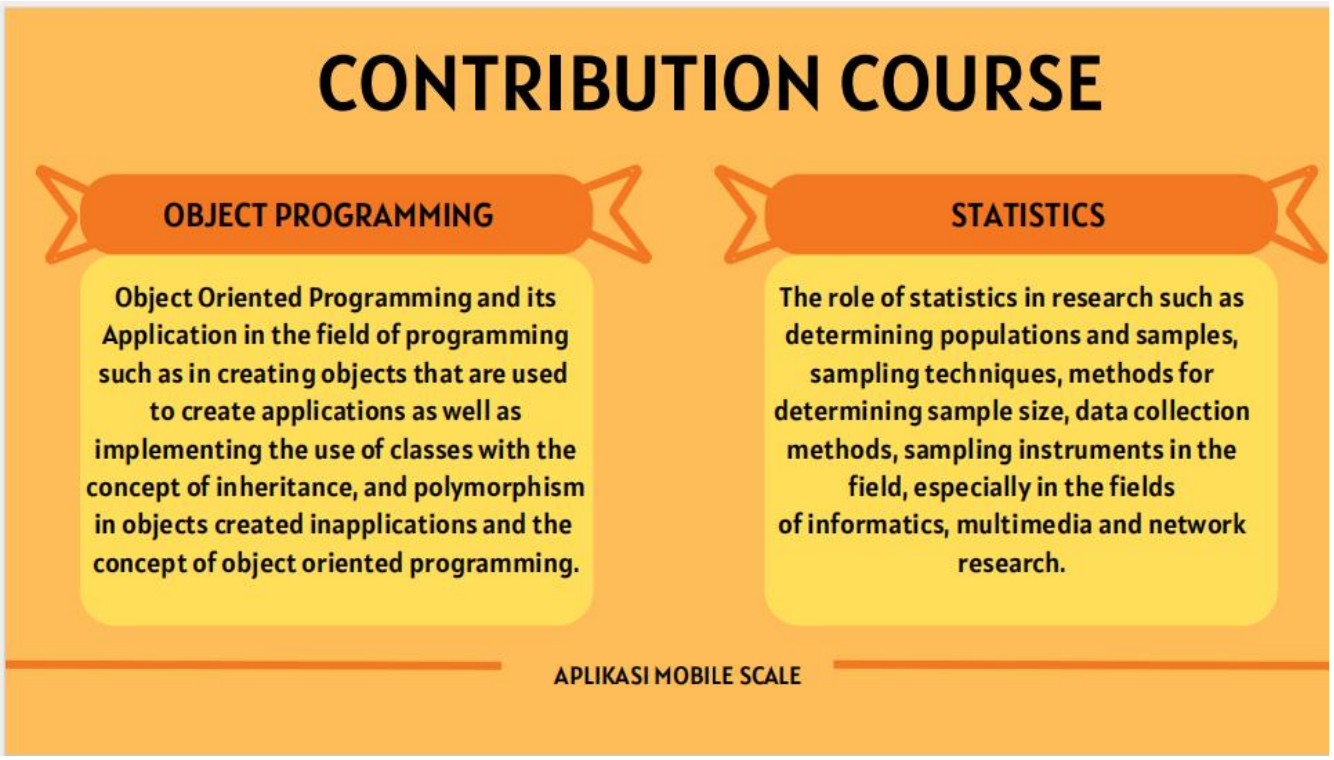


figure 5.4 Presentation Slides

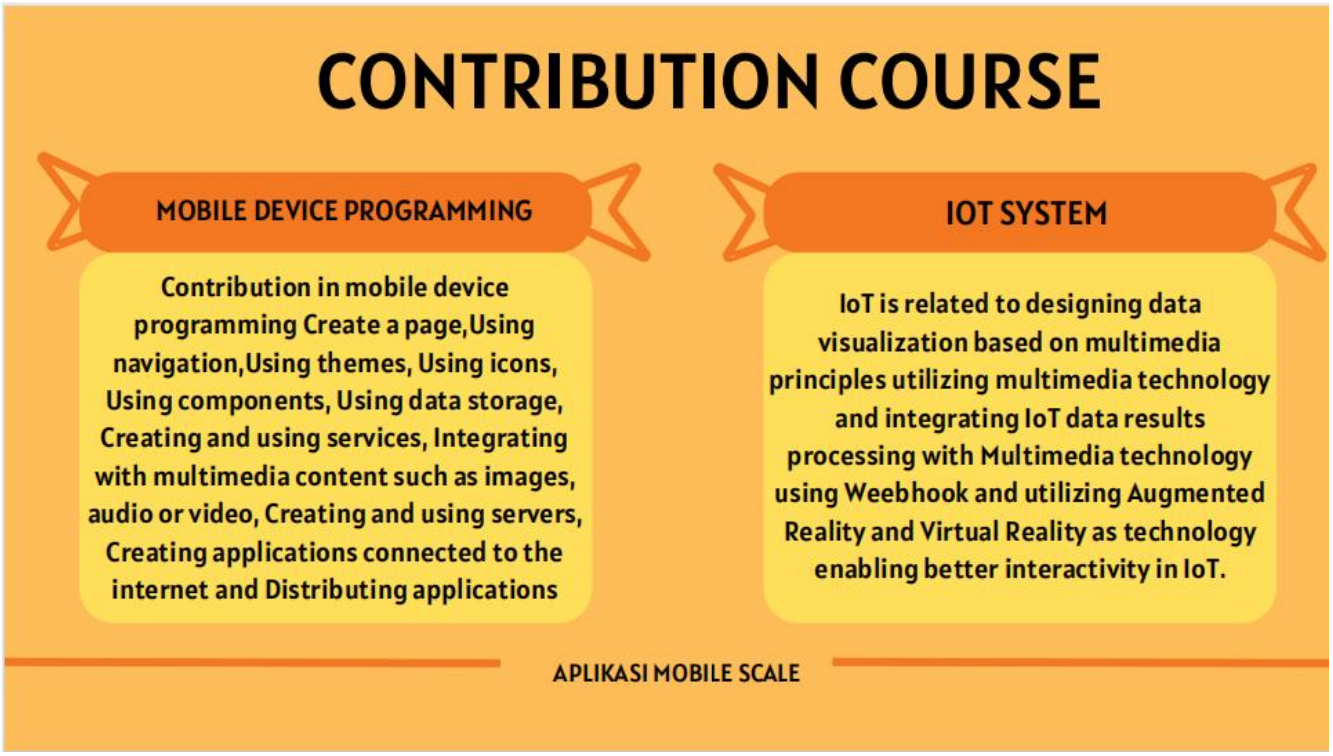


figure 5.5 Presentation Slides

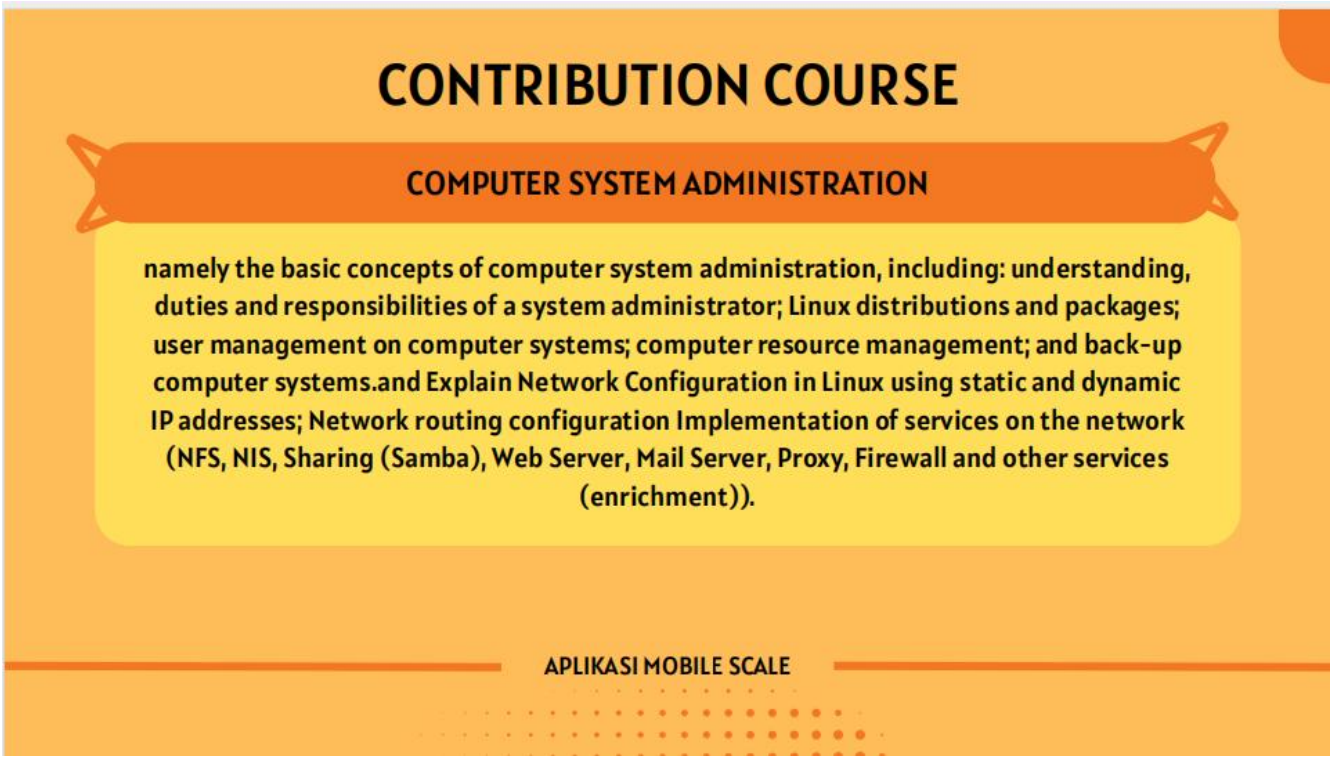


figure 5.6 Presentation Slides

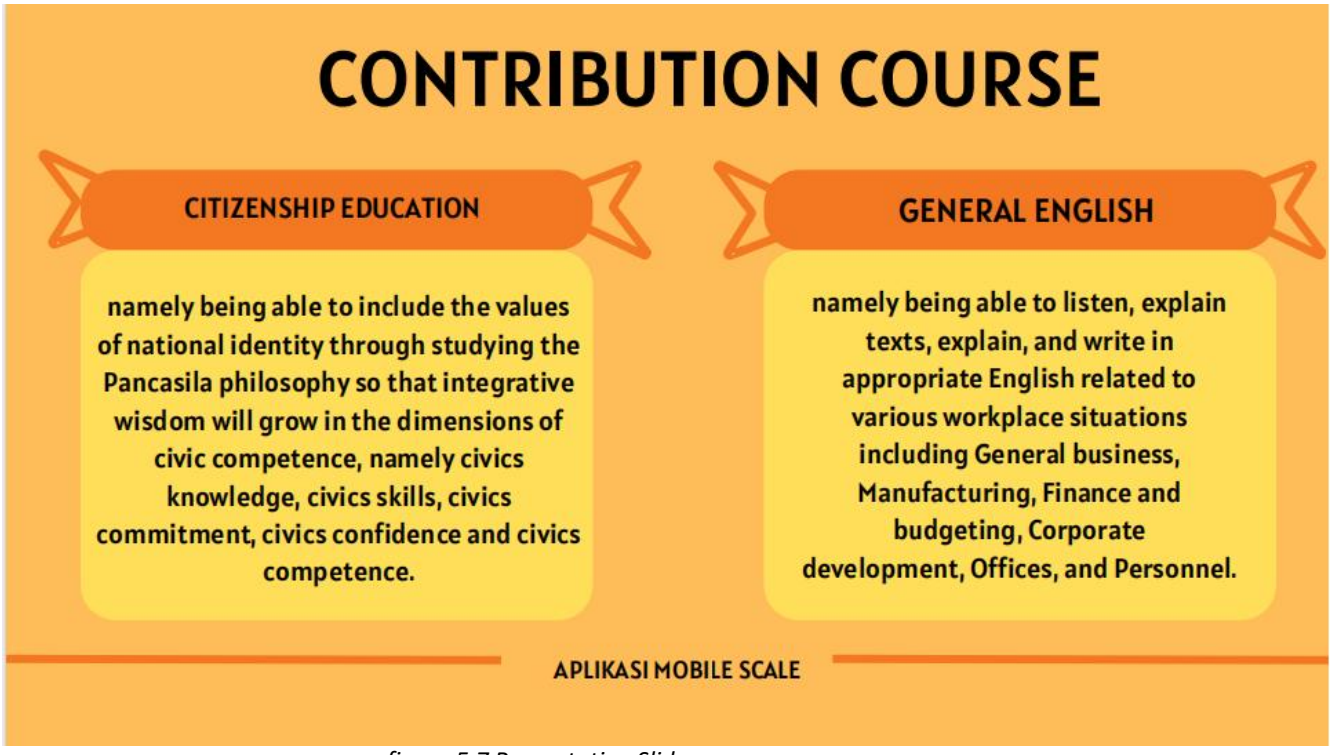


figure 5.7 Presentation Slides

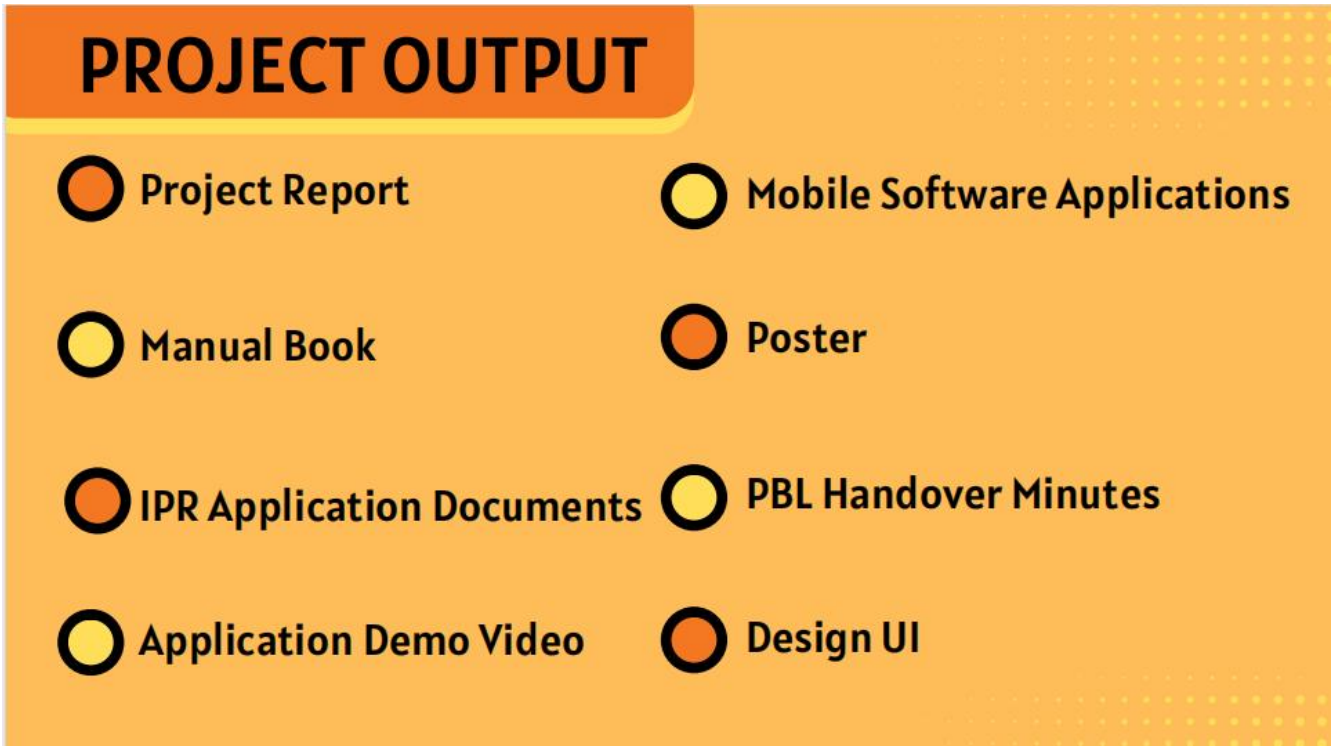
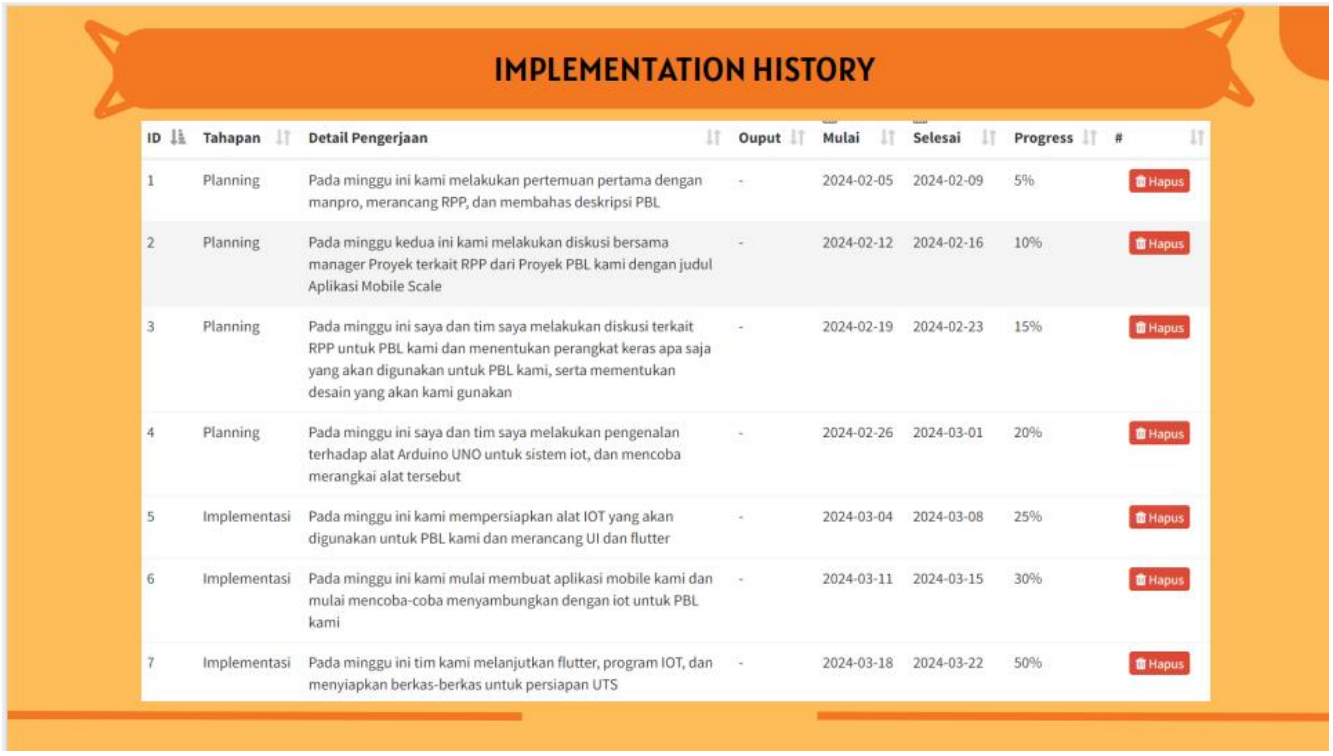


figure 5.8 Presentation Slides



IMPLEMENTATION HISTORY

ID	Tahapan	Detail Pengerjaan	Ouput	Mulai	Selesai	Progress	#
1	Planning	Pada minggu ini kami melakukan pertemuan pertama dengan manpro, merancang RPP, dan membahas deskripsi PBL	-	2024-02-05	2024-02-09	5%	Hapus
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figure 5.9 Presentation Slides

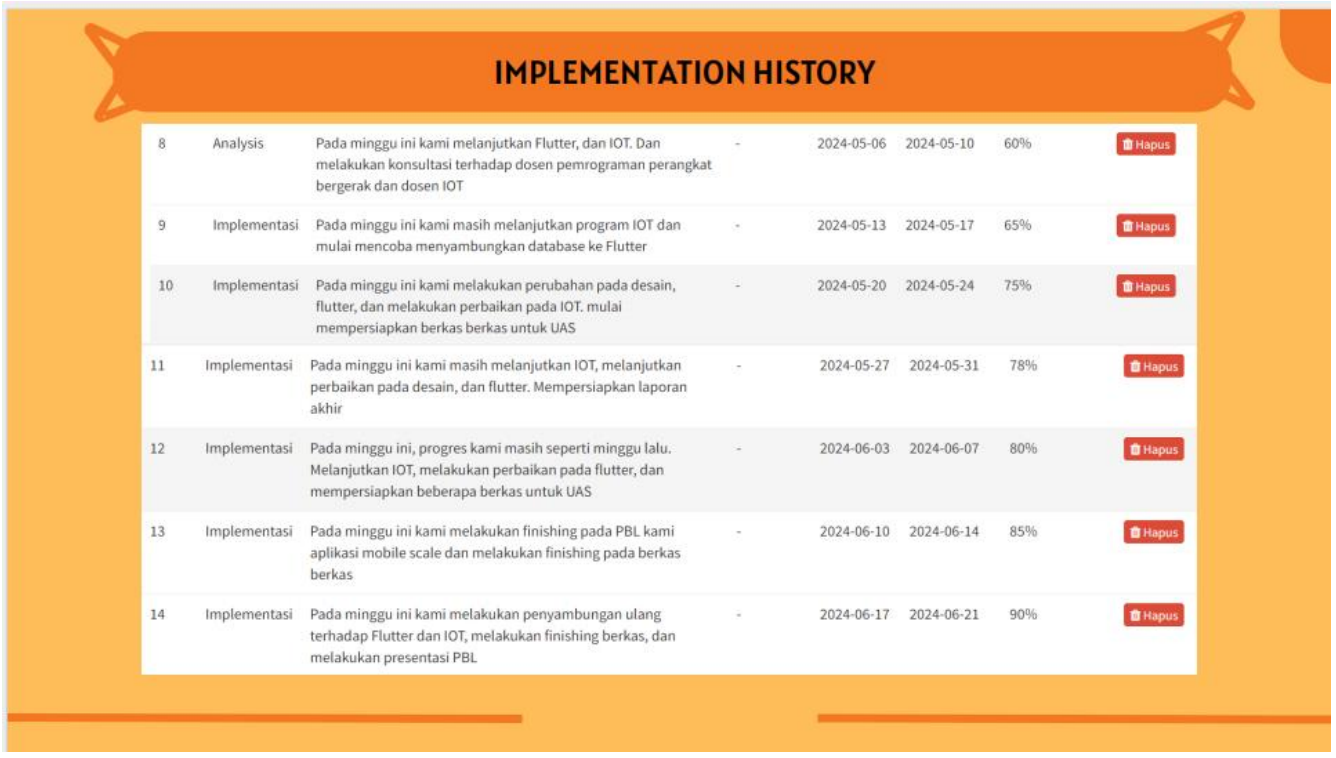

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figure 5.10 Presentation Slides

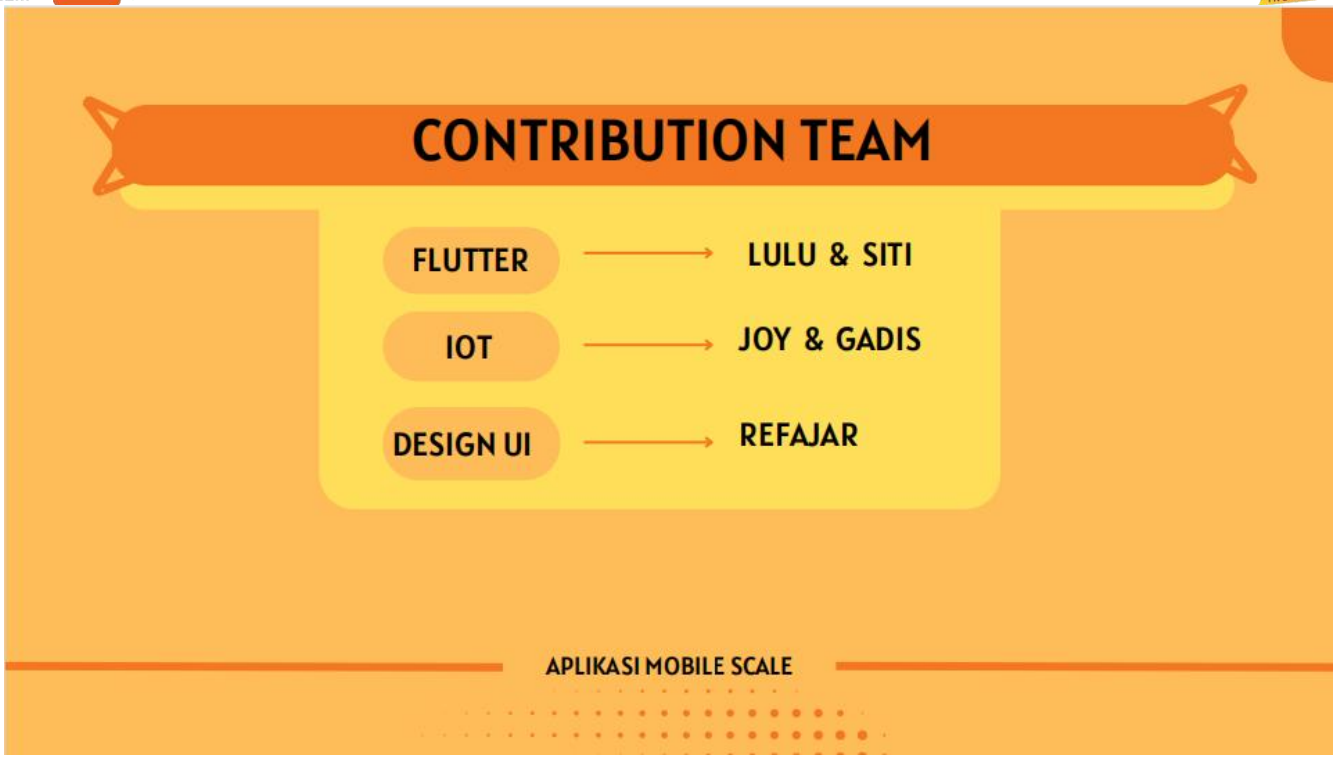

figure 5.11 Presentation Slides

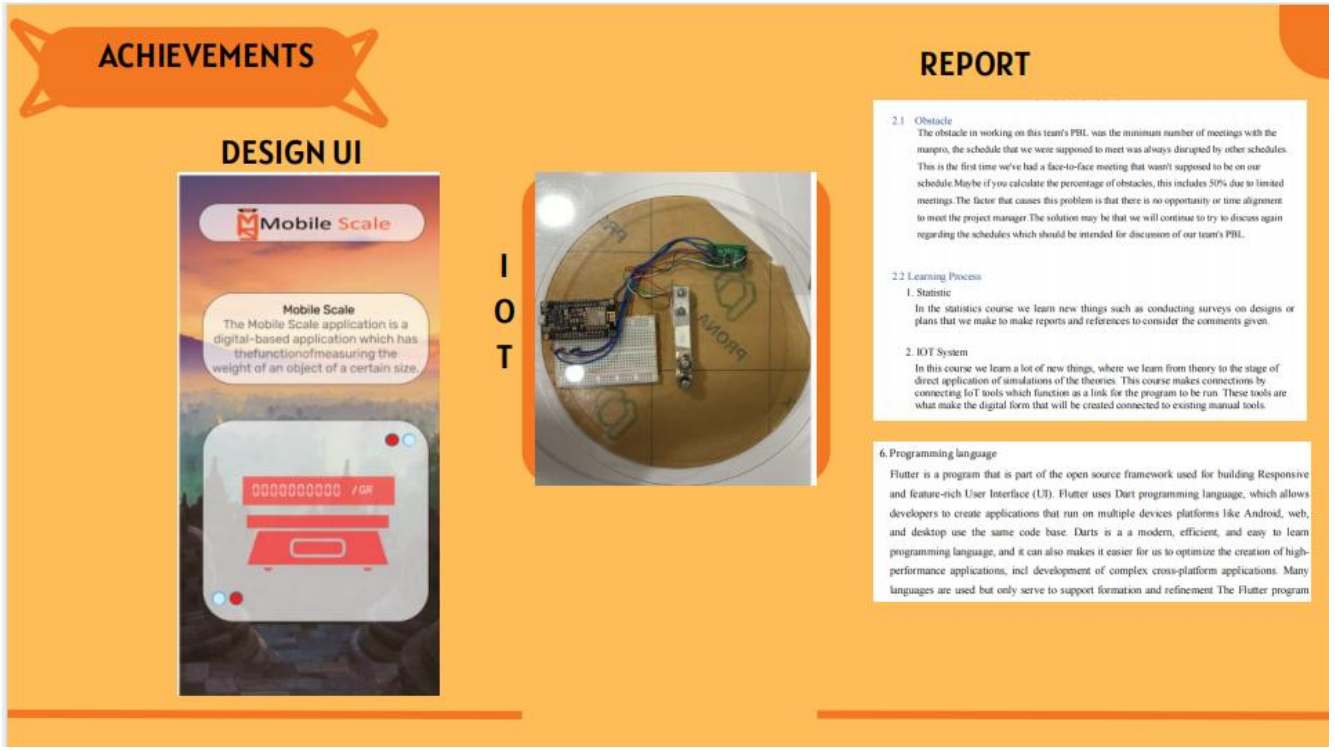

figure 5.12 Presentation Slides

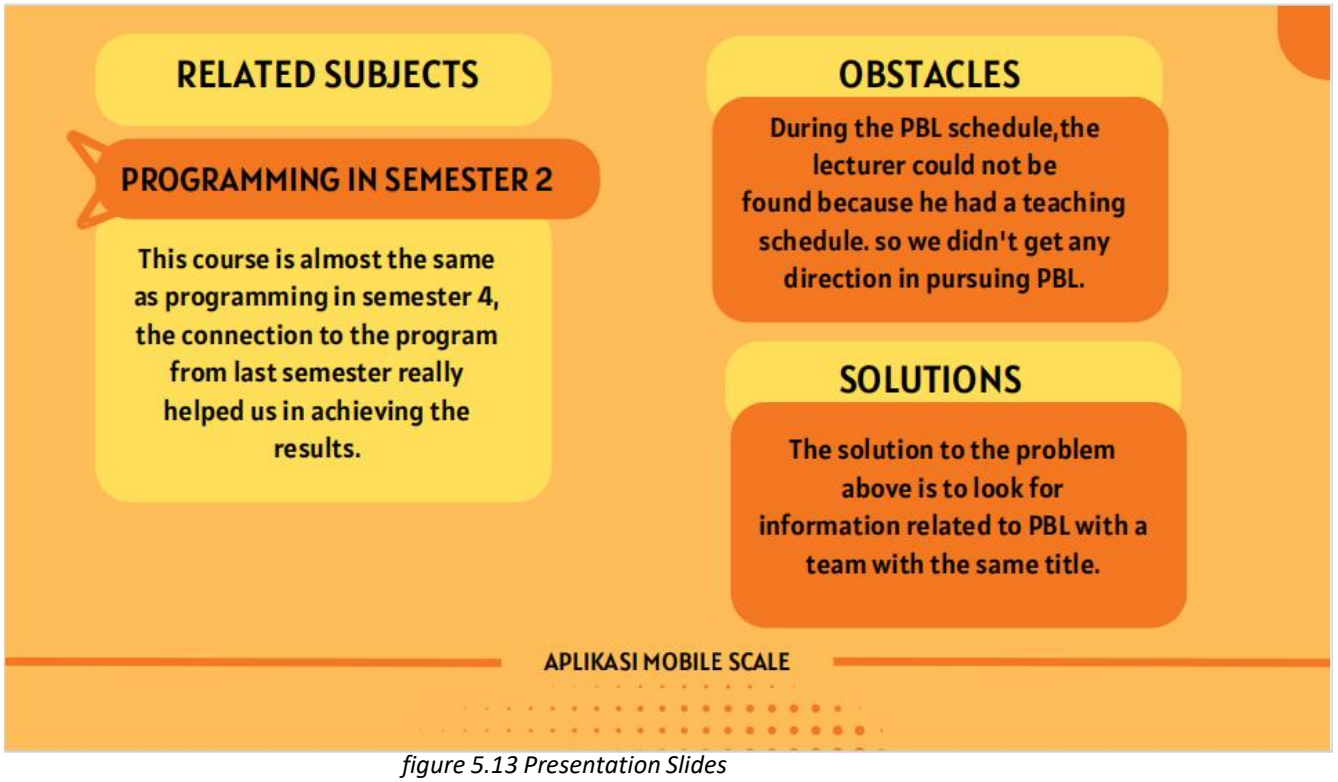

figure 5.13 Presentation Slides

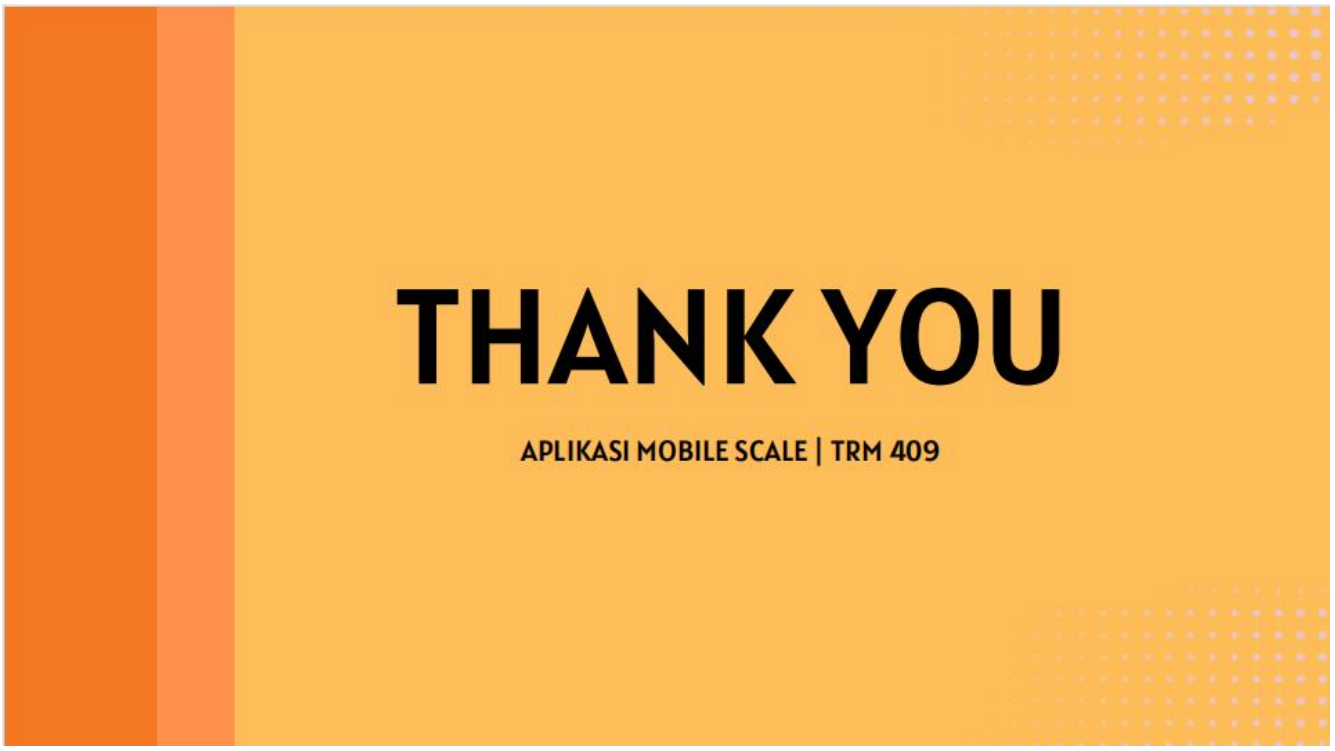

figure 5.14 Presentation Slides

APPENDIX

You can add appendices as needed such as:

1. Link of product

   https://drive.google.com/drive/folders/1JtTa6QAFXhxmXBTvdc1dIecQNyV3qm0W?usp=drive_link

2. Link of presentation

   https://drive.google.com/file/d/1M4EFYavj0cyDgRXQ-EGwnMwQu_lyipnA/view?usp=sharing

3. Link of demo video /teaser

   https://drive.google.com/file/d/1r26g2jBoqy6WA8W6knql2VrFXRLYdf4z/view?usp=sharing

4. Link of scientific poster

   https://drive.google.com/file/d/1TxYpcQYtujNHB1HHtyBYOA3TdZwYFD1m/view?usp=drive_link

5. Link of Intellectual Property Rights Document

   https://drive.google.com/drive/folders/1Y-8Mt5yNhelMJcMaV3hfoE1ygYGnI6lP?usp=drive_link

6. Link of handover document scan

   https://docs.google.com/document/d/11de2Cfqs48pCFvVARiZ5L1RE2WwPKVgi/edit?usp=drive_link&ouid=102036259981371389511&rtpof=true&sd=true

7. Link of contest proposal (optional)

Make sure the link provided is set up to be accessible to the public.