UNIVERSITI PUTRA MALAYSIA

AGRICULTURE • INNOVATION • LIFE

MyStation Mobile Application

NAME   : NIK MUHAMMAD ASYRAF BIN NIK ISMAIL
MATRIC NUMBER   : 206630
SUPERVISOR   : PROF. MADYA Ts. DR. MAS RINA BINTI MUSTAFFA

TABLE OF CONTENT

INTRODUCTION

➤ Train stations, especially in bustling urban areas, pose challenges for navigation due to their size and complexity.

➤ New users often encounter difficulties in navigating train stations efficiently.

➤ The project aims to address this by providing a user-friendly interface with reporting and feedback features, catering to both newcomers and seasoned commuters.

➤ Alongside reporting functions, the focus is on assisting users in quickly locating and accessing vital services within train stations.
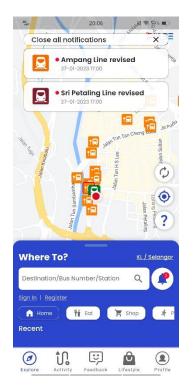
PROBLEM STATEMENT

Users encounter difficulties in locating crucial facilities leading to a suboptimal travel experience.
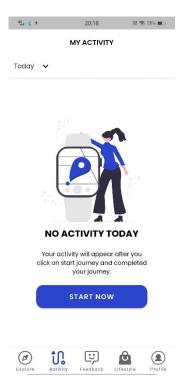
Released apps may lack robust user reporting and feedback functionalities, limiting the ability to address real-time issues and concerns faced by commuters.

The absence of a platform that integrates both essential station information and user-centric reporting features contributes to an overall lack of convenience and satisfaction for train station users.

EXISTING APP

OBJECTIVES

Enhance user decision-making by incorporating visual representations, including photos and detailed descriptions of facilities and services, to offer a preview of the station environment.

Implement robust user reporting and feedback functionalities, allowing commuters to contribute real-time information, share experiences, and address issues within the station environment.

Develop a comprehensive mobile application that not only serves as a repository of train station information but also fosters a sense of community to drive improvements in the quality of services.

PROJECT SCOPE

User Scope

- Frequent and infrequent commuters who use train stations as part of their daily commute or occasional travel.

System Scope

- The app is developed for Android platforms using the Flutter framework.

- The system prominently integrates user-centric features, such as user-reported feedback and real-time updates.

- The system places particular emphasis on the inclusion of photos, providing users with a visual representation

LITERATURE REVIEW

Existing Mobile Applications

Name	MyRapid PULSE	Malaysia MRT/LRT (Offline)	Moovit
References	Prasarana Malaysia Berhad (2020). MyRapid PULSE (Version 3.0.4) [Mobile application software]. Retrieved from https://play.google.com/store/apps/details?id=com.prasarana.pulse	PB Solutions. (2020). Malaysia MRT/LRT (Offline) (Version 4.3) [Mobile application software]. Retrieved from https://play.google.com/store/apps/details?id=pb.mrt.malaysiarailmap	Moovit (2012). Moovit: Bus & Train Schedules (Version 5.119.0.581) [Mobile application software]. Retrieved from https://play.google.com/store/apps/details?id=com.tranzmate
Advantages	• Provides step-by-step directions and trip planning. • Display estimated time arrival for better route planning.(Prasarana Malaysia Berhad, 2020)	• Ability to access information without an internet connection. • Offer offline access to MRT/LRT route. (PB Solutions, 2020)	• Offers real-time updates on train schedules and disruptions. • Provides step-by-step directions and trip planning. (Moovit, 2012)
Disadvantages	• The ability to provide feedback is technically not available to everyone. • Does not provide reliable real-time updates on delays and schedule changes for trains.	• No interactive features such as feedback functions. • Limited content and not practical.	• Station information may not be as detailed or comprehensive compared to other apps. • Usability is limited due to the invasive spam advertisements.

AGRICULTURE • INNOVATION • LIFE

Related Journal Article

| Article name	Tip Express: An Android School Navigation Application	Added Value Of A Customized Transit App For Metropolitan Bus Trip	Citizenapp: Yet Another Social Media Platform For Public Facility Monitoring In Sidoarjp
Author	Reynaldo E. Castillo, Paula Jean M. Castro, Maria Christina R. Aragon, Henry C. Macugay (2018)	Carlos Romeroa, Andrés Monzónb, Andrea Alonsoc, Raky Julioa (2020)	Jagad Yudha Awali, Irwan Alnarus Kautsar, Arif Senja Fitrani (2022)
Knowledge based	Shortest path algorithm	Real-time information process	Reports submission
Approach	Piconet & Bluetooth	The customized transit app: HARMONY	QR Code
Objective	Develop a mobile application that generates the path transfer from one building to another (Castillo, Castro, Aragon, & Macugay, 2018)	Customized transit app providing users information (Romero, Monzón, Alonso, & Julio, 2020)	Create an integrated smart city mobile app that can be used to report damage to public facilities using the QR Code. (Awali, Kautsar, & Fitrani, 2022)
Advantages	Able to navigate by following a path	Manage to deliver static information about routes and timetables and reducing wait time at the stop	Successfully able to collect reports from users and gain user's satisfaction
Challenges	A lot of piconets needed for a station	Data reliability is undervalued	The need to generate QR code at every facilities in the stations

METHODOLOGY
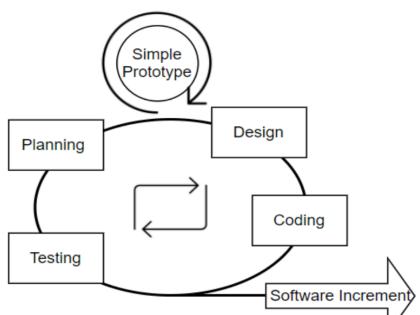
1

Planning

- ❖ Define problem statements and objective
- ❖ Gather user requirements and system requirements.

2

Design

- ❖ Sketch the interfaces
- ❖ Create wireframes, mockups, or prototypes

4

Testing

- ❖ Design testing, development testing and user acceptance testing

The framework's emphasis on providing clients with high-quality software while expediting the development process has made it well-known in agile approaches (Singh, 2021).

3

Coding

- ❖ Frontend development
- ❖ Backend development

The app should feature a robust reporting and feedback system.

Users should be able to navigate the app easily and find the desired information quickly.

Users should have access to photos and detailed descriptions of facilities and services within the train station.

SYSTEM REQUIREMENTS

Functional Requirements
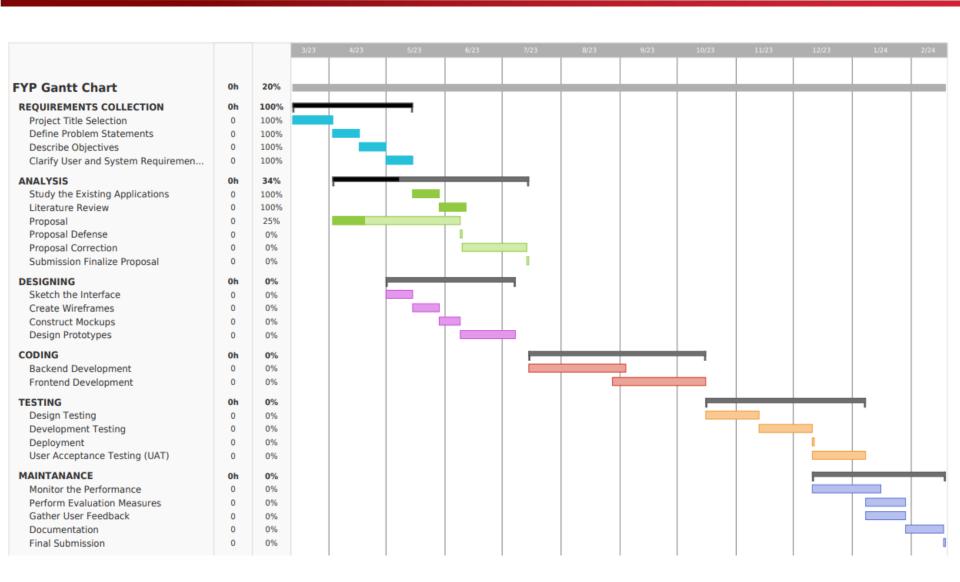
1) The app should provide a rich interface for accessing station information.

1) The app should integrate with data sources to fetch and display station details, including maps, photos, and descriptions.

1) The app should provide real-time updates on station information, such as changes in user reports or feedbacks.

Non-Functional Requirements

1) The app should be responsive and provide fast loading times to ensure a smooth user experience.

1) The app should have an intuitive and user-friendly interface, making it easy for users to navigate and find the desired information.

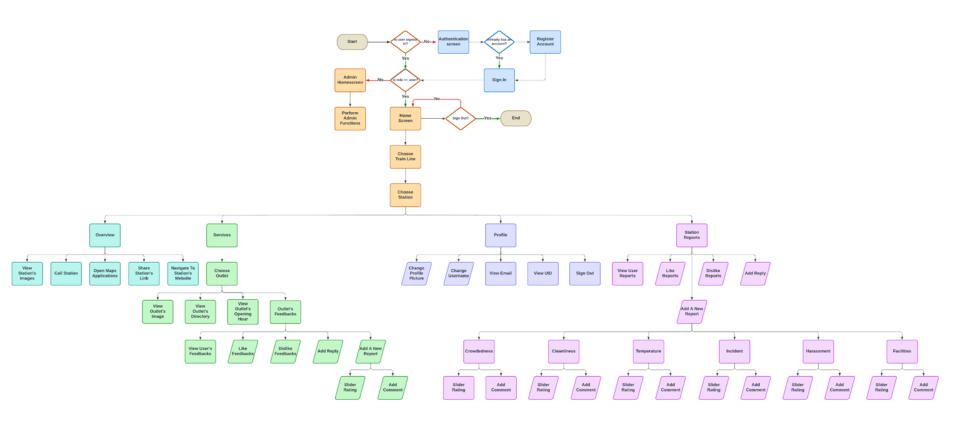1) The app should be compatible with Android mobile platforms and different screen sizes and resolutions.

UPM
UNIVERSITI PUTRA MALAYSIA

AGRICULTURE • INNOVATION • LIFE

	0h	20%	3/23	4/23	5/23	6/23	7/23	8/23	9/23	10/23	11/23	12/23	1/24	2/24
FYP Gantt Chart	**0h**	**20%**												
REQUIREMENTS COLLECTION	**0h**	**100%**												
Project Title Selection	0	100%												
Define Problem Statements	0	100%												
Describe Objectives	0	100%												
Clarify User and System Requiremen...	0	100%												
ANALYSIS	**0h**	**34%**												
Study the Existing Applications	0	100%												
Literature Review	0	100%												
Proposal	0	25%												
Proposal Defense	0	0%												
Proposal Correction	0	0%												
Submission Finalize Proposal	0	0%												
DESIGNING	**0h**	**0%**												
Sketch the Interface	0	0%												
Create Wireframes	0	0%												
Construct Mockups	0	0%												
Design Prototypes	0	0%												
CODING	**0h**	**0%**												
Backend Development	0	0%												
Frontend Development	0	0%												
TESTING	**0h**	**0%**												
Design Testing	0	0%												
Development Testing	0	0%												
Deployment	0	0%												
User Acceptance Testing (UAT)	0	0%												
MAINTANANCE	**0h**	**0%**												
Monitor the Performance	0	0%												
Perform Evaluation Measures	0	0%												
Gather User Feedback	0	0%												
Documentation	0	0%												
Final Submission	0	0%												

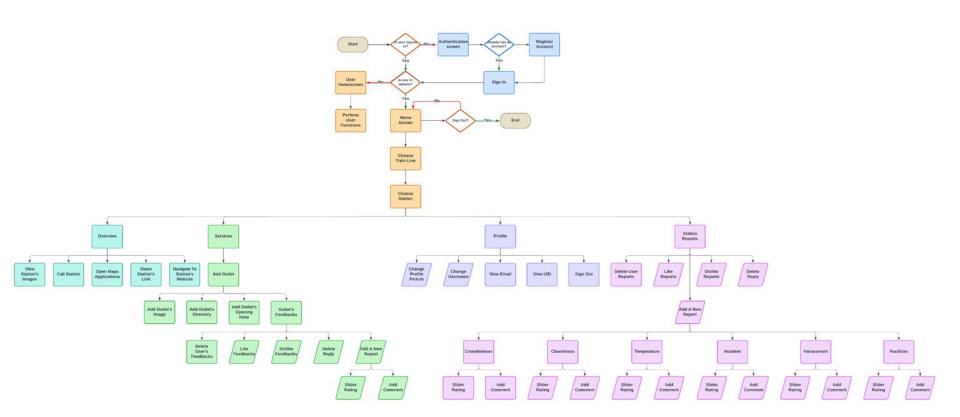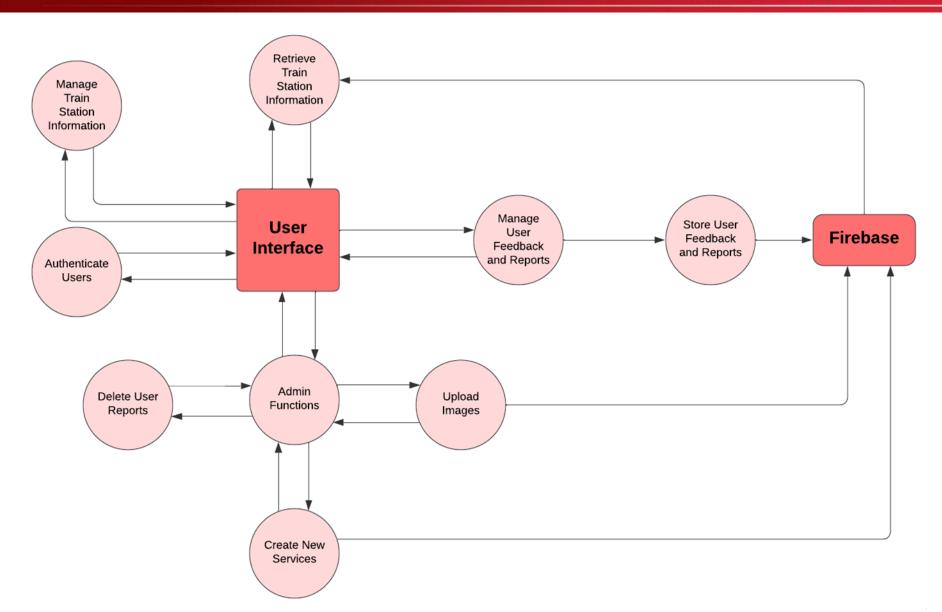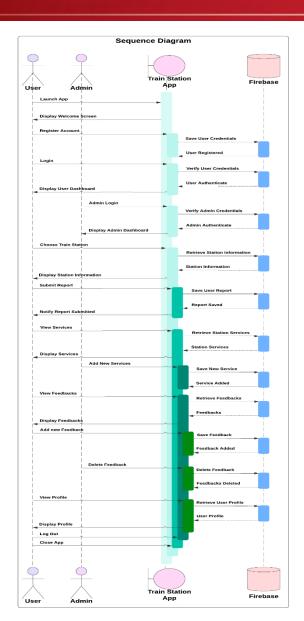| Software Tools	Android Studio
Languages	Flutter using Dart
Features	User registration and authentication, station information display and real-time updates.
Server	Firebase

FLOWCHART

User Site

FLOWCHART

Admin Site

DATA FLOW DIAGRAM
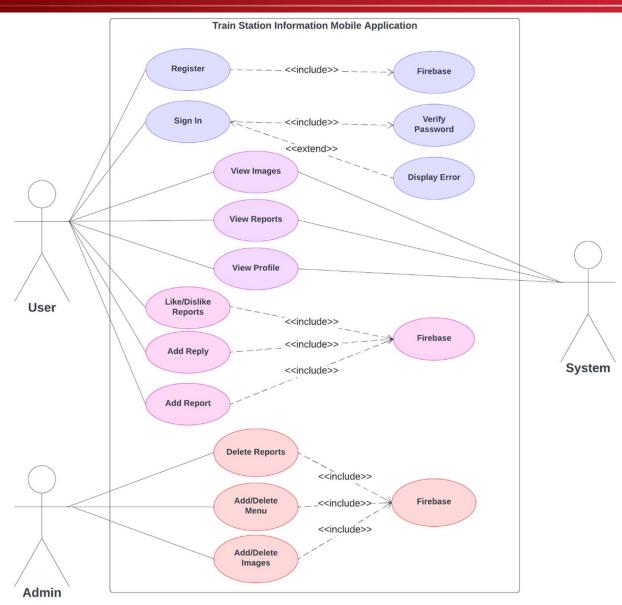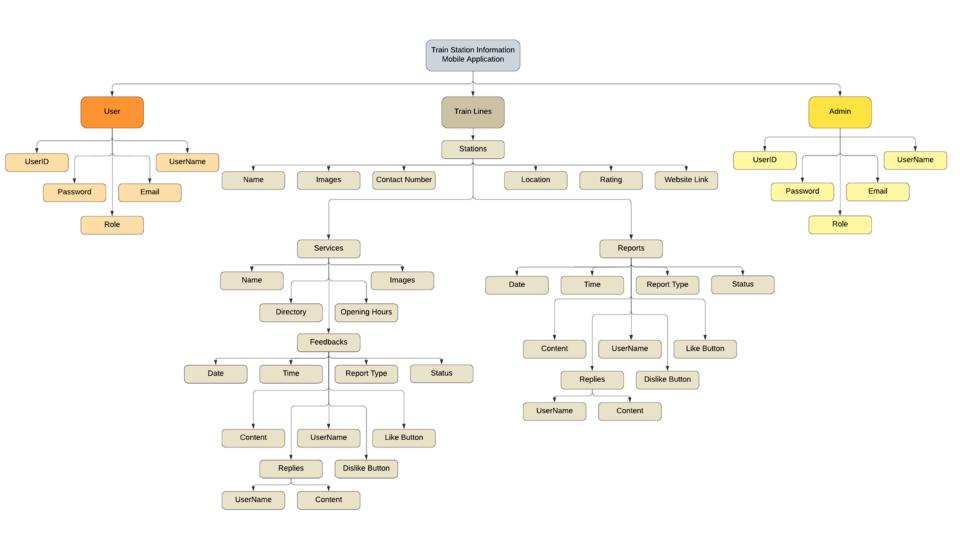
USE CASE DIAGRAM
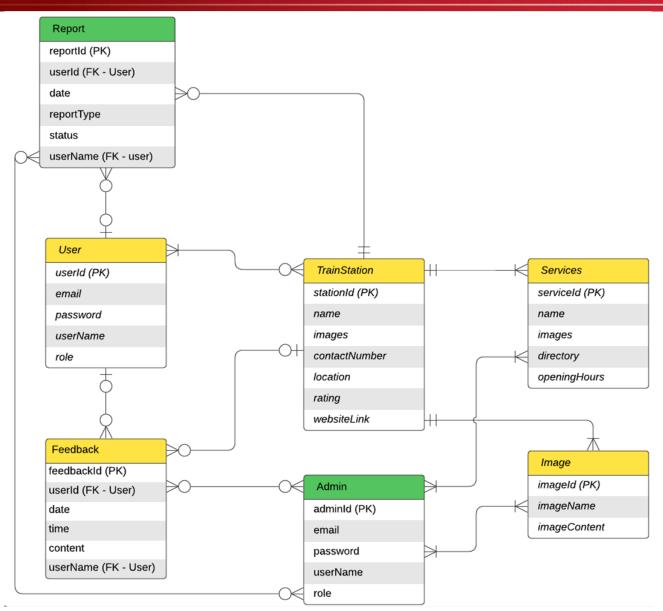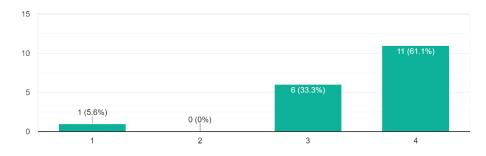
DATA STRUCTURE DIAGRAM

ENTITY RELATIONSHIP DIAGRAM
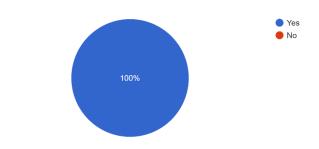
EVALUATION (STUDENT)

Did all the features and functionalities work as expected?
18 responses

- Yes 88.9%
- No 11.1%

How well does the app's functionality compare to your initial expectations?
18 responses

- 1: 0 (0%)
- 2: 0 (0%)
- 3: 7 (38.9%)
- 4: 11 (61.1%)

If no, please specify which features had issues.
2 responses

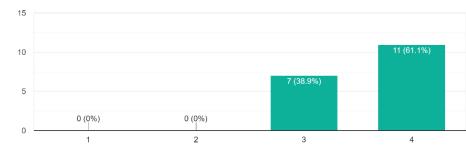Not all button functional but understandable as the project is quite difficult to execute

some of the button cant be click, need to improve the key in words section

How successful were you in completing the tasks you intended to do within the app?
18 responses

- 1: 0 (0%)
- 2: 0 (0%)
- 3: 6 (33.3%)
- 4: 12 (66.7%)
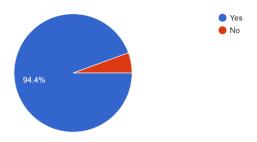
Please rate the functionality of the MyStation app based on the following features:

Legend: Not Functional, Somewhat Functional, Functional, Very Functional

- Station Information: Functional 5, Very Functional 13
- Real-time Updates: Somewhat Functional 2, Functional 6, Very Functional 10
- User Reports and Feedbacks: Functional 5, Very Functional 13

UPM
UIPM

AGRICULTURE • INNOVATION • LIFE

Are there any features or functionality that you found particularly useful or innovative?

18 responses

The information for all station in one app which can be accessible to users

The reporting section where other user sees the overall report

Whoever can report and give their opinion about the station situation and environment

No

Yes. The report features

complaint/report function

yes

the services near the station is very useful

The report page

Rating of the each service

directory of shops and toilet etc

Makesure all the buttons are function

the report part is useful

Services available at the station

the real time updates

The report features

maybe more info for every station

Feature that gives notification about the train arrival, that would be great

Are there any specific features you would like to see added or improved?

18 responses

no

The train time

No. Everything's okayy

No

Maybe can add navigation assist so that there will be guidance for someone who is not familiar with any transportation app

already nice

a more fresh UI, and add more stations

Faster loading time

Would be nice if we can just touch our phones on the scanner to pay for train tickets

Would be nice if we can just touch our phones on the scanner to pay for train tickets

-

add a user custom feedback

I think its a good apps

Feedbacks for other inquiries

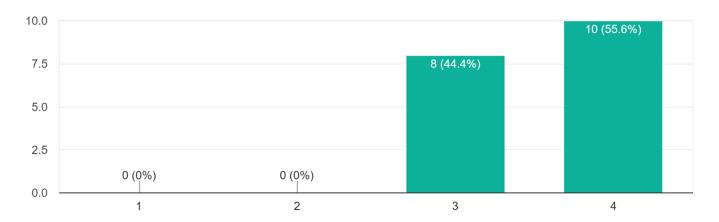train arrival time

No for now

maybe gps?

The loading image of the station images should be improve
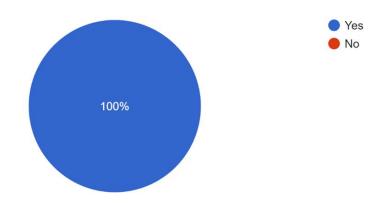
EVALUATION (STUDENT)

How well did the app meet your needs?

18 responses

Would you recommend this app to others?

18 responses

Yes
No

100%

LIMITATIONS

The app currently lacks extensive details about train arrival and departure times

The addition of user manual for those unfamiliar with transportation apps

The app is currently limited to the Android platform, excluding users of other operating systems.

FUTURE WORKS

Enhanced Train Time Information

- Future versions of the app could focus on providing more detailed and real-time train schedule information

Improved Navigation Assistance

- Consider enhancing the app's navigation features to provide more assistance, especially for users who are not familiar with transportation apps.

Cross-Platform Compatibility

- Explore the development of versions compatible with iOS to broaden the app's accessibility and cater to users on different operating systems.

CONCLUSION

Objective Achievement

The MyStation Train Station Information Mobile Application successfully achieved its objectives, offering a comprehensive platform for users to access information, navigate facilities, and contribute to community-driven improvements.

Visual Representation

Emphasis on visual representations, real-time updates, and user feedback has resulted in a user-friendly application that fosters collaboration among commuters.

Firebase Integration

Efficient data management is ensured through the implementation of Firebase as the cloud database, contributing to a seamless user experience.

PERSONAL REFLECTIONS

The project has been a journey of challenges and growth, deepening my understanding of mobile application development and user-centric design.

The integration of visual elements and real-time feedback mechanisms has underscored the significance of empathy and iterative design in creating user-centric applications.

The project has honed my technical skills, from utilizing Dart in Android Studio to effectively managing a cloud database.

REFERENCES

➤ Awali, J. Y., Kautsar, I. A., & Fitrani, A. S. (2022, July 8). Citizenapp: Yet Another Social Media Platform for Public Facility Monitoring in Sidoarjo. *Jurnal Teknoinfo*, *16*(2), 408. https://doi.org/10.33365/jti.v16i2.1985

➤ Castillo, R. E., Castro, P. J. M., Aragon, M. C. R., & Macugay, H. C. (2018). Tip Express: An Android School Navigation Application. *International Journal of Computer and Communication Engineering*, *7*(3), 98–106. https://doi.org/10.17706/ijcce.2018.7.3.98-106

➤ Losada-Rojas, L. L., Gkartzonikas, C., Pyrialakou, V. D., & Gkritza, K. (2019, January). Exploring intercity passengers' attitudes and loyalty to intercity passenger rail: Evidence from an on-board survey. *Transport Policy*, *73*, 71–83. https://doi.org/10.1016/j.tranpol.2018.10.011

➤ Moovit (2012). Moovit: Bus & Train Schedules (Version 5.119.0.581) [Mobile application software]. Retrieved from https://play.google.com/store/apps/details?id=com.tranzmate

➤ Prasarana Malaysia Berhad (2020). MyRapid PULSE (Version 3.0.4) [Mobile application software]. Retrieved from https://play.google.com/store/apps/details?id=com.prasarana.pulse

REFERENCES

➤ PB Solutions. (2020). Malaysia MRT/LRT (Offline) (Version 4.3) [Mobile application software]. Retrieved from https://play.google.com/store/apps/details?id=pb.mrt.malaysiarailmap

➤ Ramesh, R., Divya, G., Jayan, A., Maju, S. V., & Varghese, R. (2019, July). Offline Mobile Application for Train Time Prediction. In *2019 International Conference on Communication and Electronics Systems (ICCES)* (pp. 1159-1163). IEEE.

➤ Romero, C., Monzón, A., Alonso, A., & Julio, R. (2020). Added value of a customized transit app for metropolitan bus trips. *Transportation Research Procedia*, *47*, 513–520. https://doi.org/10.1016/j.trpro.2020.03.126

➤ Singh, K. (2021). Agile Methodology for Product Development: A Conceptual Study. , 10, 209-215. https://doi.org/10.35940/IJRTE.A5899.0510121.

TERIMA KASIH/*THANK YOU*

www.upm.edu.my