

ZAKAT CALCULATOR APP
(MOBILE APPLICATION
SYSTEM)

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DECLARATION

I hereby that the work in this thesis is my own except for quotations and summaries which have been accordingly acknowledged.



6TH OF MARCH 2021

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ABSTRACT

In this era of technological advancement, the usage rate of zakat calculators is significantly evolving. It is uncommon for developers to also opt for one. The objective of this study is to provide a zakat application with an analysis graph in managing personal zakat information, to develop an application that can automatically calculate zakat, to improvise an application that records personal zakat information. The methodology used for developing this project is the waterfall model due to its flow as a system and its long term completion. Moreover, the waterfall model is simple and follows a specific flow which is why it is one of the most widely used methodologies. Following all six phases of the waterfall, the development was able to undergo smoothly, from the first phase of system engineering until the final but - going phase of maintenance. After the successful completion of the final product, the mobile application went through layers of testing to ensure the functionalities are working as intended including unit testing and user acceptance testing. The user acceptance testing was to check whether the features work as intended. Of course, this application is also not without its limitations and constraints in development. Limitations such as requiring internet access are bound to occur, as the nature of the application itself is a web application system that requires establishing a connection to the database. Constraints in development include the inability to support browsers, the risk of this application becoming deprecated over time, most of the limitations are due to the nature of the development tool used. However, these issues were already brought to attention and fixes are already planned in the next version release of the Zakat Calculator Application.

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CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

The Zakat Calculator App is a mobile app for users to calculate their zakat. According to the Zakat KL Wilayah and Investopedia article, zakat is an Islamic finance term referring to the form of alms-giving treated as a religious tax and one of the five pillars of Islam, it is a religious obligation in Islam for all Muslims who meet the necessary wealth criteria to donate a certain portion of their wealth each year to charitable causes. Muslims believe that giving money to the poor purifies annual earnings that are above and beyond what is needed to meet the basic needs of a person or a family. It is mandatory if two conditions which are nisab and the due date are met at the same time. Zakat is based on income and the value of a property. The common minimum amount for eligible individuals is 2.5% or 1/40 of the total Muslim savings and wealth. It is also often paid out at the end of the year, once any surplus wealth calculations have been made. The recipients are poor and needy, struggling Muslim converts, slaves, people in debt, soldiers fighting to protect the Muslim community, and those stranded on their journeys. The zakat collectors are also compensated for the work they do.

At this time and age, existing zakat calculators are limited to the calculation of zakat only, there are no additional features that manage zakat payment data. Besides, many people who calculate their zakat do not record the zakat payments they made during the year and the zakat payments in the previous year are not recorded. It's very hard for users to trace back. Also, many Muslims are unaware of the need to pay zakat, some of whom do not even know how to calculate zakat.

The objective of this project is to help automatically calculate zakat, record and manage zakat data by converting it to statistics. All of these objectives are to resolve the issues set out above.

For this application, it will only be used by a single type of user, specifically Muslims who want to work out their zakat portion. In particular, the app asks users to enter the year to obtain the minimum requirement for that year, and then to request the total income of the user as well as any contributions made. It will then compare the total amount of revenue minus contributions and expenses with the minimum requirement for nisab to determine whether the user meets the criteria for paying zakat. If the user meets the criteria, they have the option of paying the zakat monthly or annually to online zakat organisations. Keep in mind, however, that the payment system is not implemented in this application, but will link the user to a third party zakat payment organisation. They can then be recorded and added to a database where users can view them. The database is located in the zakat records section where the database can be converted to a chart for users to compare and set zakat targets in the future.

1.2 PROBLEM STATEMENT

1. Zakat applications lack features that assist the user in managing zakat calculation.
Existing zakat calculators are limited to calculating zakat only, there are no additional features that manage the zakat calculation data.

2. Muslims are not aware of how to calculate zakat.
Many Muslims do not pay attention to zakat despite its importance since calculating it is very technical and takes energy and time to compile all the wealth to calculate.

3. Zakat calculation details are not recorded properly.
Many people who calculate their zakat do not record the zakat calculations that they have made along the year and the previous year zakat payment is not recorded. It's hard for users to trace back.

1.3 PROJECT OBJECTIVES

1. To provide an application that can manage the zakat calculation information.
Users that have a zakat history linked to their zakat calculator can project the amount of zakat they want to pay in the future as well as convert them into a statistic such as a graph. Keeping track of the amount of zakat paid every year acts as an encouragement for the users to set goals on giving more zakat.

2. To provide an application that can automatically calculate zakat.
This is to provide a tool that can digitally calculate the zakat. People that want to calculate their zakat can easily enter their wealth and financial information to substitute them into a formula that calculates zakat automatically.

3. To improvise an application that records personal zakat information.
All the zakat that has been calculated will then be recorded and added to a database so users cannot forget their zakat calculation information.

1.4 SCOPE

1.4.1 Application Scope

- 1 The user can calculate their zakat by entering the necessary wealth and financial information.

To calculate zakat, the app mainly asks for the users to enter the year to obtain the nisab/minimum requirement of that year, then ask for the total income the user has as well as any contributions made. Then it will compare the total amount of income minus the deductions and expenses with the nisab/minimum requirement to determine if the user is eligible for paying zakat.

- 2 The user can view their zakat records and statistics.

Recorded zakat calculations and payment exists for the user to view their zakat history, the results recorded can be viewed in a table or a chart. That way the user can compare their zakat between different years, this also encourages the user to project about giving more zakat in the future.

1.4.2 Project Scope

- Proposal

To define the project idea and introduction of the Zakat calculator, explain the objectives of the project, provide the scope of the project, list the requirements and display a timeline and duration of the project.

- Product

Develop a mobile application named Zakat Calculator Apps that can digitally calculate zakat, collect data on the zakat payment information, manage the zakat information and convert them into statistics as well as provide information about zakat.

- Final Report

To produce a complete report that discusses on the project idea, how it works, the aim and objectives, reasons why the app should exist, how it differs from other similar apps, the methodology and techniques used, testing and results obtained during experiments, the summary, the experience, and the conclusion of the project.

- Presentation

A demonstration and presentation of the final product, to display the look and interface design, functions and purposes.

1.4.3 Target User

This project is intended for Muslims who pay zakat and also use android, the user will be able to:

1. Calculate their zakat by entering the necessary wealth and financial information.
2. View their zakat records and statistics.
3. Read information about zakat

1.4.4 Hardware Requirements

- **Processor:** Minimum of 1GHz
- **Memory (RAM):** Minimum of 2GB RAM
- **Monitor Resolution:** 1024 X 768
- **Hard Drive:** Minimum of 20GB
- **Internet Connection:** 4Mbps or higher
- **Computer:** DELL Lenovo Inspiron 13 5000
 - **Processor:** Celeron Dual Core
 - **Memory (RAM):** 8GB RAM
 - **Display Resolution:** 1920 x 1080 Pixels
 - **Hard Disk:** 128GB
- **Phone:** Samsung Galaxy J6

- **Processor:** Octa-core 1.6 GHz Cortex-A53
- **Memory (RAM):** 4GB RAM
- **Display Resolution:** 720 x 1480 Pixels
- **Internal Memory:** 64GB

1.4.5 Software Requirements

- Windows 10 recommended. Windows 7 minimum
An Operating System that supports a computer's basic functions, such as scheduling tasks and controlling peripherals.
- Livecode
A platform used for designing mobile applications. It is a tool to code and designs the interface of apps.
- SQLite
A database tool that is used for a wide range of purposes including data storing, e-commerce and logging applications.
- Android
Android is an operating system designed primarily for touchscreen mobile devices such as smartphones and tablets.

1.5 CONCLUSION

To conclude this proposal, it has been proven that this application is needed to help Muslims to perform the obligation of giving zakat. This is why the Zakat Calculator Application will be a simple application developed to simplify the process of zakat. The user can calculate the zakat and pay. In the zakat records, the user may view the statistics in a chart, view all zakat calculations and payments, keep track of zakat accumulations. Zakat Calculator Application will undoubtedly be helpful for Muslims and encourage them to give more zakat.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

This chapter includes a literature review of recent studies on the subject. The literature review shall be undertaken to gain an understanding of the research relevant to a topic or area of study. Conducting a literature review will help you develop your expertise in your profession (Western Sydney University Library 2016). Literature analysis is critical in finding the faults and limitations of the application for the developers to not make the same errors when designing the application. Instead, developers should concentrate on developing and filling the project holes. Some apps are made up of several different features that can help users measure their zakat. These applications are used as a guide for the future project and thus, by comparing to these applications, the project that will be built will become a stronger and updated version of the current ones.

2.2 MOBILE APPLICATION UX PRINCIPLES

The subchapter covers the article on the conversion optimization framework suited for mobile applications on smartphones. While it will explain the development of a brand new mobile application, the purpose is to optimize existing applications. It defines the main concepts and considerations for qualities in mobile applications. For example, the key things to keep in mind, when analyzing mobile applications, to determine how and when to enhance the user

experience, maximize performance for a better improved mobile application (Steven Griffiths 2015). The main UX principles for mobile apps is described in these five stages: adopt, use, transfer return, and usability hygiene.

2.2.1 Adopt

The goal at this stage is to eliminate all roadblocks for use-and to follow the mobile app. It brings users into the content/substance as quickly as possible so that they can use, analyze and experience its value; principles aimed at directing the user's initial interaction with the product, creating meaningful onboarding and effortless learning (Steven Griffiths 2015).

The principles categorized in the first stage for optimization:

- Splash screen - is a critical window to get them interested in the proposal.
- Tips and Help - it will direct users in their initial experience and acceptance. An onboard sequence can only be used if tips and help are insufficient. If used, only the highest priority learnings required by the user for first use should surface.
- Home Screen - can provide users with features to complete their priority tasks, and provide content that satisfies their needs and desires.
- Navigation - should be simple, task-oriented, logical and navigation position consistent across the board.
- Sign-up/Sign-in - make it quick, promote it with straightforward benefit statements, and offer the amount of reassurance that consumers demand from those who need a risk/benefit decision.
- Permission - only ask for permissions that allow the app to provide value to the user, ask at the right time in the sense of what the user is doing and provide a simple gain argument.

2.2.2 Use

The use discusses the optimization of the implementation and functionality of the app. The goal at this stage is to encourage users to use the app in the way they intend to. An excellent search facility can help users find what they want quickly and conveniently to fulfil their needs and drive conversion (Steven Griffiths 2015).

The principles categorized in this stage are:

- Search - help users find what they want fast and conveniently to fulfil their desires and drive conversion.
- Product and Service - where users make important conversion choices and allow users to easily transact, save for later, and exchange things on which they have to make decisions.
- Offline - allow users to migrate from their mobile app to their touchpoint whether digital or offline.

2.2.3 Transact

The goal at this point is to help users move through and checkout stage with minimal effort, with ample reassurance, and to convert without hesitation (Steven Griffiths 2015).

The principles listed in this stage relevant to the app theme are:

- Payment - maximize conversion at the purchase point by reassuring users and using easy feedback methods, such as: checking cards, payment solutions and express payment for first-time users; and pre-populating data for return users; etc.
- Confirmation - reassures the user of the completed transaction details

2.2.4 Return

The emphasis at this point is to be helpful, to interact and satisfy, to attract users or to promote the loyalty of users. Since mobile applications are the most suitable touchpoint for: repeat purchases and regular transactions; users who are still committed to the brand; mobile first-use cases (which do not happen without special smartphone capabilities); services using rich and personalized data; etc. Essentially, it costs less to maintain a user than to gain a new user (Steven Griffiths 2015).

The principles listed in this stage relevant to the app theme are:

- Account - for users to self-serve and track their accounts and purchases anywhere and wherever. It offers users access and the amount of comfort that only apps can afford.
- Content and Design - the app experience can be improved by developing a user interface that is incredibly stunning, minimal, rich, or powerful.
- Widget - the control element of the graphical user interface, the interaction element.
- Notification - messages that alert users to extremely important, timely and personal activities, material or messages.

2.2.5 Hygiene Usability

The basics that need to be discussed to maximize conversion, and prevent interrupting or pressuring users to worry about items that should be easy. It meets the demands of users who are getting more accustomed to high-quality applications, published by brands who spend time and resources in designing, testing and improving offerings, to offer accessible, robust, and often delightful user experiences (Steven Griffiths).

The principles categorized in this stage are:

- What to do - to follow fundamental points of advice for easy-to-use, pleasurable projects to pick, build and arrange elements and functions in the work.
- What not to do – to avoid mistakes made previously from bad UX smartphone applications and slim down the bad qualities.

2.3 PREVIOUS CASE STUDY

Before developing a project, an evaluation should be done to a few previous case study so that the developer can learn more about the case. Making a case study requires collecting different type of data from a different application that has the same function. By comparing the similarities and differences of the applications, the understanding of the goal of the project, the features and functionality become clearer. By doing so, the comparison will be made through the criteria of the UX principles.

2.3.1 Case Study 1 (Zakat Calculator Pro (APPSKOTTAGE))

Zakat Calculator Pro is a free app that calculates the zakat value. Zakat Calculator Pro can automatically retrieve nisab value based on the home currency, create and save multiple zakat calculations, add people/beneficiaries who are eligible to receive zakat, add payments to recipients to keep track of zakat payments, and a dashboard to provide an overview of the zakat funds available. Other features of the app include different categories such as cash, gold, silver, loans, investments, livestock, and more. It also provides useful information for each category and nisab value based on gold and silver.

The only downside to this app is in-app purchases for the ad-free pro version of the app, costing RM19.90 for a permanent service or RM4.90 for a monthly subscription. This version is not worth buying in light of the contrast between the quality of the app and the price; it is too expensive for what it is worth. With that in mind, the pro version mentions an ad-free experience, however, the app does not display any advertisements in the free version, and all of the features mentioned in the app description are available. There seems to be a lack of information about the additional features for the pro version.



Figure 2.1: Case Study 1 Splash Screen



Figure 2.2: Case Study 1 Home Screen

Upon successful installation and launch of the Zakat Calculator Pro, the Splash screen (Figure 2.1) displays clearly and quickly transitions to the home screen (Figure 2.2) showing the current status of the available zakat funds of the user. As can be seen in the figure above, the design is quite simple and basic. Unfortunately, there is no guide to the app that is needed because there is no information on the two boxes at the bottom of the page. Upon further review, the top box is the total zakat accumulated from all the calculations and the bottom box is the zakat funds paid for. The widget is a ring that represents the deduction of the total zakat and the funds paid. A feature that displays the available funds, such as the one above, is quite interesting to see. To obtain the total zakat, the user must calculate the zakat on the calculation page. The funding page is obtained from the recipients and the payment page.

Zakat Calculator	
Cash ⓘ	0 MYR ▾
Gold ⓘ	0 MYR ▾
Silver ⓘ	0 MYR ▾
Investments ⓘ	0 MYR ▾
Properties ⓘ	0 MYR ▾
Business ⓘ	0 MYR ▾
Others ⓘ	0 MYR ▾
Agriculture ⓘ	0 MYR ▾
Cattle ⓘ	0 MYR ▾
Precious Stones ⓘ	0 MYR ▾
Payables ⓘ	0 MYR ▾
Nisab ⓘ	20,988.67 MYR ⓘ
TOTAL ASSETS	0 MYR
ZAKAT DUE	0 MYR

Zakat Calculator	
Cash ⓘ	200,200 MYR ▾
In Hands	200 MYR
In Bank Accounts	200,000 MYR
Gold ⓘ	0 MYR ▾
Silver ⓘ	0 MYR ▾
Investments ⓘ	0 MYR ▾
Properties ⓘ	0 MYR ▾
Business ⓘ	0 MYR ▾
Others ⓘ	0 MYR ▾
Agriculture ⓘ	0 MYR ▾
Cattle ⓘ	0 MYR ▾
Nisab ⓘ	20,988.67 MYR ⓘ
TOTAL ASSETS	200,200 MYR
ZAKAT DUE	5,005 MYR

Figure 2.3: Case Study 1 Calculation

As seen in the figure above, the zakat is calculated in a much more direct and simpler way with all the zakat type calculations combined, the ‘ ⓘ’ buttons provide the information and describe the zakat categories.

According to the app (ⓘ button), the nisab can be obtained through the internet or manually inputted. There are issues with both these issues, the first being that the app does not specify where the nisab is being obtained thus not reliable without any source present, the second issue specifying where the nisab can be entered when interacting with the nisab section the only outcome is refreshing the nisab online. The possibility could be such a feature does not exist or it exists but it is not explained briefly where to obtain it. Either way, tips and help feature would solve this issue by directing the user to engage with the app properly and filling in any information that has not been elaborated. Moving on, the test will proceed by setting the cash to RM200,200. The zakat due is RM5,005 and is saved in the figure below.

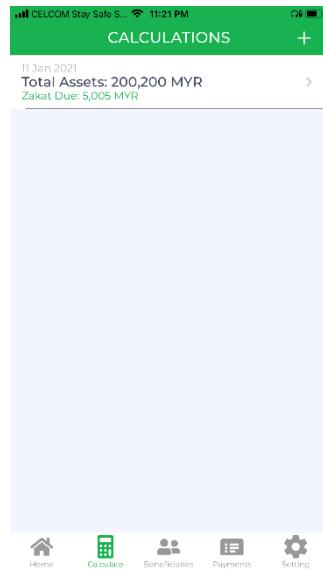


Figure 2.4: Case Study 1 Updated Home Screen

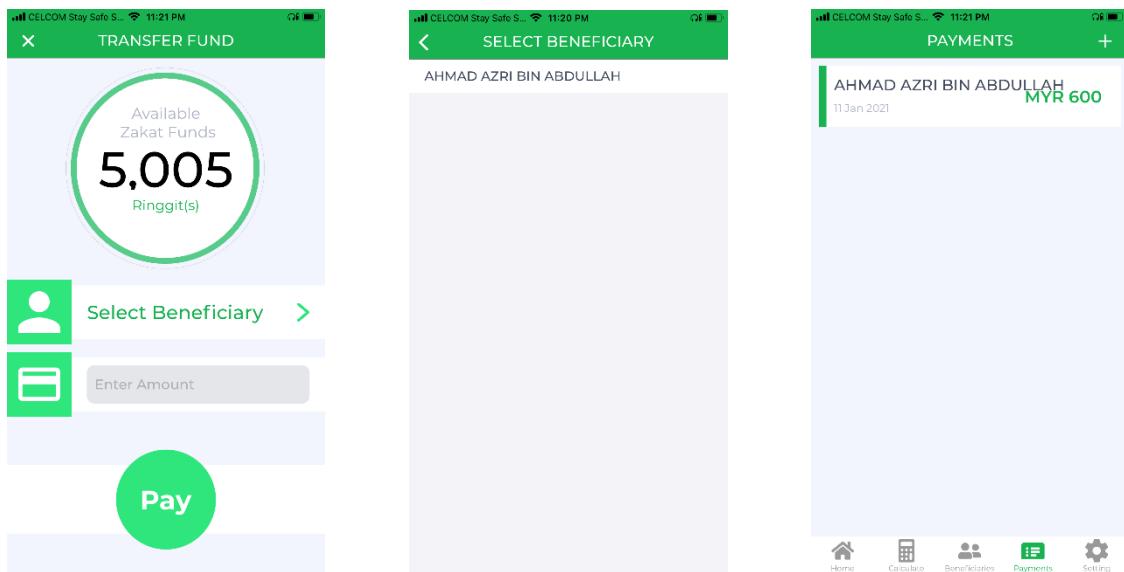


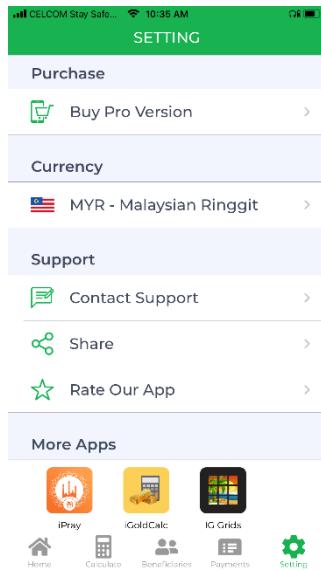
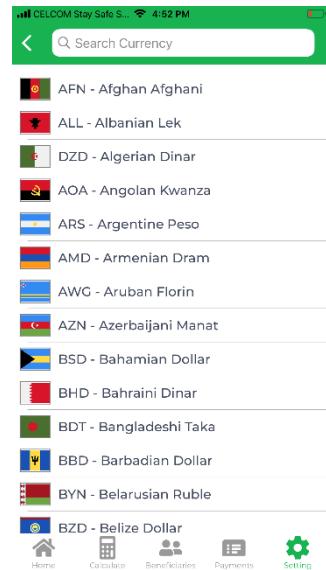
Figure 2.5: Case Study 1 Payment Funds

Here in the figure above elaborates the process of handling available zakat funds, displaying RM5005 to monitor how much the user has to pay. The user can select a beneficiary or person the user can transfer funds to, the beneficiary is added when the user enters the beneficiary data and can create a list of them.



Figure 2.6: Case Study 1 Updated Home Screen

In this case, the subject beneficiary is Ahmad Azri which has been added before the payment and the zakat paid for is RM600. The figure above will produce the result of the deduction of the total zakat funds and display the total assets and zakat in the top box and the recent zakat paid.

**Figure 2.7:** Case Study 1 Setting Page**Figure 2.8:** Case Study 1 Currency Page

The settings only feature change in currency and options to pay for the pro version. In figure 2.8, the currency settings provide a list of countries stating their currency, selecting one will then change it and affect the zakat calculation. Also adding a search feature to boil down to find the specific currency.

2.3.2 Case Study 2 (Zakat Pro for Muslims (Quanticapps Ltd))

The Zakat Pro software lets the user calculate zakat exactly and save the calculations from one year to the next. Along with the sleek and smooth design and its simple use, the Zakat Pro app will be the best tool to aid the user to calculate their zakat based on the financial situation. The Zakat Pro app gives unparalleled accuracy and allows the user to calculate the value of nisab automatically and in the currency of their home country. Calculation of zakat by different categories such as cash, gold and silver, real estate, investment, agriculture, and livestock.



Figure 2.9: Case Study 2 Splash Screen

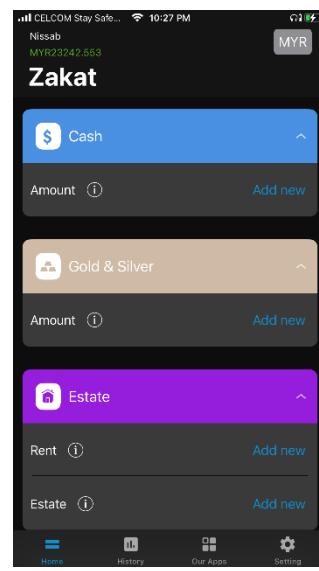


Figure 2.10: Case Study 2 Home Screen

After installing and launching successfully, the splash screen (figure 2.9) is present as expected and goes straight to the home screen (figure 2.10). Furthermore, the navigation bar provides the homepage, zakat history page, direct links to the developer's apps, and the settings. Nevertheless, the homepage is the calculation page, similar to the one in case study 1, the method of calculation is a basic sum of all zakat categories set in one total zakat fund and there is an information button placed next to its respective category. The app displays the icon suited to the category. But, it automatically sums the data and converts it to zakat form, there is no data regarding the total result and the zakat form of the total result. Apart from that, the currency option is set in the upper right-hand corner of the page while the currency option in case study 1 is on the settings page. Similar issues arise with the nisab feature where it is automatically obtained, the value is not referenced and thus cannot be reliable.

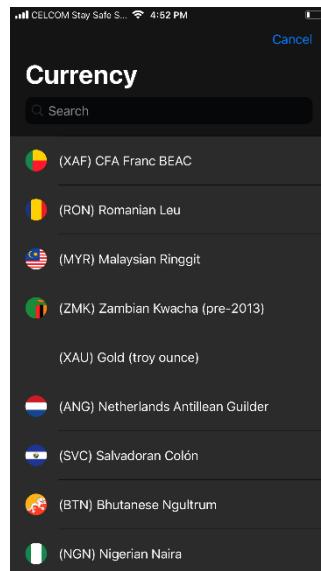


Figure 2.11: Case Study 2 Currency Page

The page has a list of all different currencies, it also has a search feature to pinpoint the specific currency. As stated in the first case study, selecting one will then change it and affect the zakat calculation. Overall, the feature is good for people using it internationally.

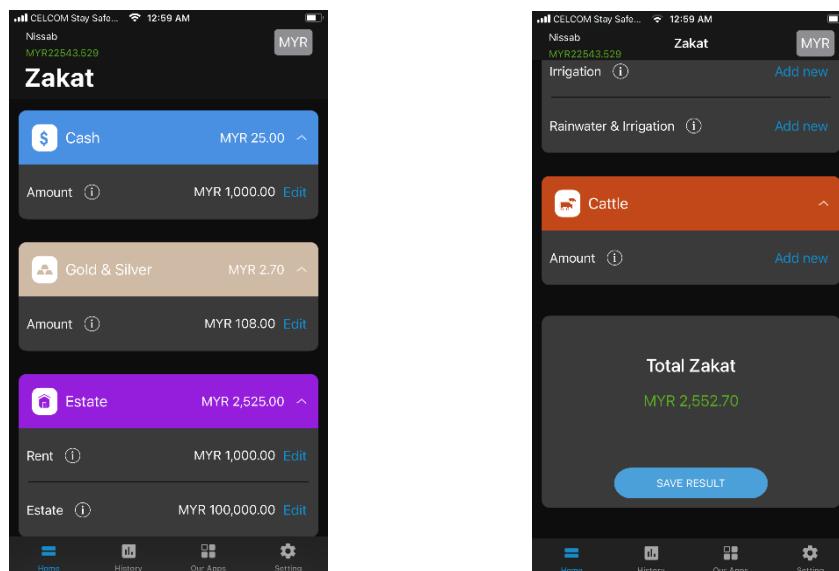


Figure 2.12: Case Study 2 Calculation

By entering the values in the zakat categories for testing purposes, the total zakat calculates in the second figure above is RM2,552.70. Now that the result has been displayed, it can be saved and transferred to the zakat history page.

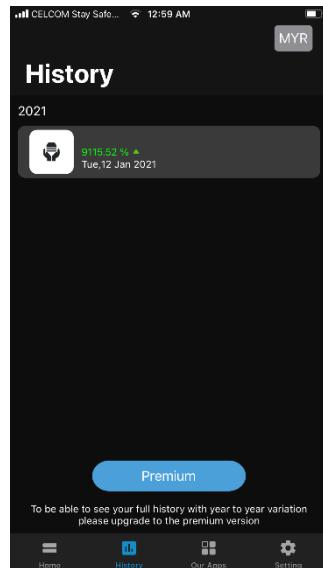


Figure 2.13: Case Study 2 Zakat History

The results from the calculation have been saved and sent according to the figure above. Although, the history does not show the result and the total zakat, rather it shows the percentage increase from the nisab value. This is very confusing for the user because the history is meant to show the zakat and not the percentage increase from the nisab. In this respect, the full information can be accessed by purchasing the premium version as stated in the figure.

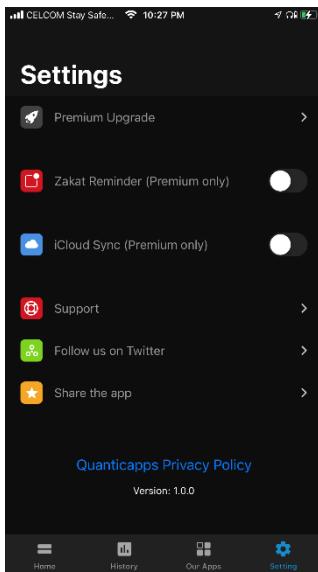


Figure 2.14: Case Study 2 Settings

The settings page is much more useful if used in the premium version as it can remind the user of their zakat calculations and it can backup and sync the zakat history on iCloud. However, that is not the case, the setting is not useful since it is restricted. The program asks the user for permission to access twitter once the user interacts with the ‘Follow us on Twitter’ button but not for the other two. The third navigation icon in the navigation bar is considered irrelevant to the app itself, promoting the previous app created by the developer for the user to see.

In terms of the visual aspects of the app, it is the best one by far. Similar to case study 1, some of its features are restricted and protected by premium purchase. The premium version allows advertisement removal, zakat history, and zakat reminder. The zakat history page cannot be accessed and will need a premium version in the form of RM16.90 to proceed. As said in the previous case, it is too expensive for what it is worth.

2.3.3 Case Study 3 (Zakat Calculator (Sign Soft))

Zakat Calculator is a free app that calculates zakat. Zakat Calculator can automatically fetch nisab value for display, provide important information about zakat and provide a list of Humanitarian Organisations to pay to. Although, it does not record and save zakat calculations.

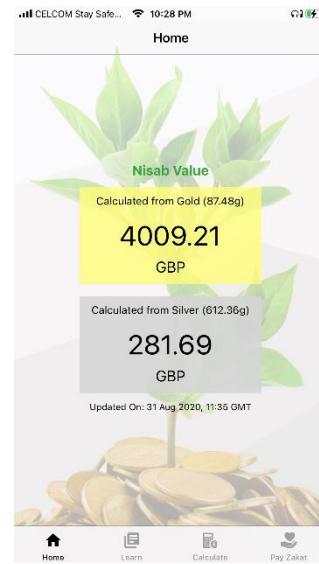
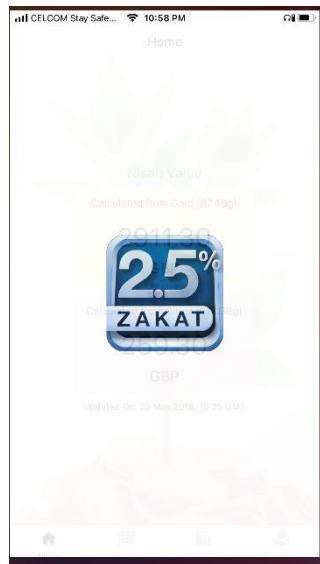


Figure 2.15: Case Study 3 Splash Screen

Figure 2.16: Case Study 3 Home Screen

Once installed and ready to go, the user is welcomed with a splash screen and directs to the home page showing the current nisab value for both gold and silver in grams and value. But, the values latest update was on the 31st of August 2020, the value changes constantly so the nisab value is inaccurate. Also, the nisab is not stated from any source so without proper resources the nisab is not right.

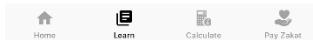
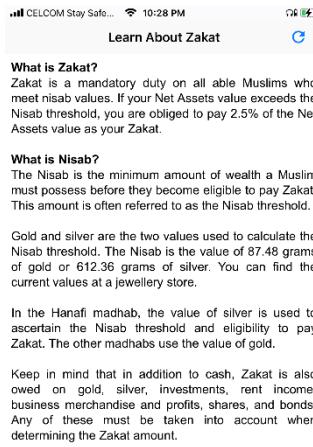


Figure 2.17: Case Study 3 Learn Page

The page in figure 2.17 reveals the learn page, it is an FAQ page to provide information about zakat and nisab. Yet, the information provided is insufficient and needs more. The developer should add more to answer questions such as “Who can receive my zakat?”, “I gave a lot of money to charity over the year. Does that count as zakat?”, etc. The button at the top left is present to refresh the page if any updates occur.

Figure 2.18: Case Study 3 Calculate Page

On this page, the calculating process look is quite different from the other two asking for the value to be entered such as net value, business cash, shares, etc. This is not a good design for the page as it is all cluttered and has no factor to indicate and split the category such as colour, icons, boxes, etc. If the user enters and calculates the zakat, the results will show on the page for confirmation. Nevertheless, there is no feature to record and save the results and send them to a database.



Figure 2.19: Case Study 3 Payment

The zakat payment page links the user to several organizations where the user can pay their zakat to. If the user were to select an option, the program sends the user outside to a browser of that option. No messages are asking for permission to do so.

In terms of the design of the application, the look for the learning page and the calculate page is not good. The app should keep the design simple and interface elements to a minimized state to help the user at ease. The calculate page should break the inputs into categories so that the page is more organized, it should also add colour or an icon to indicate the identity of the category. The page should anticipate the users need for the input in the form of an information button, not the label.

2.4 COMPARISON OF CASE STUDY

UX Principles		Previous Case Study		
		1	2	3
ADOPT	Splash Screen	The splash screen appears displaying the window and the logo of the application.		
	Tips and Help	Provides an information button next to the zakat category as well as the nisab, displaying the definition and facts.	Provides an information button next to the zakat category, displaying the definition and facts.	Provides an FAQ section set in the navigation bar which provides information about the definition of zakat and nisab.
	Home Screen	Reveals a widget of the total zakat funds available to the user, displaying the total assets calculated in the app and the zakat paid from the zakat.	Sends the user to the calculation section as the home screen.	Displays the current nisab value calculated for gold and silver, providing the value and the gram weight.
	Navigation	Provides the home page, calculate page, beneficiaries page, payment page, and settings. All pages being relevant and labelled to understand.	Provides the home page, a history page, our app page, and the settings page. In terms of relevancy, promoting the previous app as a section in the	Provides the home page, calculate page, FAQ page, and payment page. All pages being relevant and labelled to understand.

			navigation bar is not needed. The rest is a key section in the app.	
	Permission	Sends message asking for permission to rate the app after interacting with the 'Rate us' button	Asks for permission to the 'Follow us on Twitter' button and touch ID for premium purchase is present.	No permission principle whatsoever even though it is necessary for some features.
USE	Search	Provides one to search for currency	Provides one to search for currency	Has no search function
	Offline	Obtains recent nisab value before offline conditions. No feature of manually entering nisab. Other than that, all features can be operated offline.	Obtains recent nisab value before offline conditions. No feature of manually entering nisab. The 'Our apps' page cannot be accessed without the internet.	Obtains recent nisab value before offline conditions and no feature of manually entering nisab. Paying zakat section cannot be accessible offline as well.
TRANSACT	Payment	Has in-app purchases for the pro version of the app.	Has in-app purchases for the premium version of the app.	Has no in-app purchases inside.
	Confirmation	Provides an apple confirmation	Provides an apple confirmation	Sets the result of the calculation in

		system to confirm that the user wants to pay. The options are face id, fingerprint id, or password id.	system to confirm that the user wants to pay. The options are face id, fingerprint id, or password id.	front of the screen for the user to see.
RETURN	Content and Design	The design of the app is kept at a basic level, displaying a consistent colour pallet of green and white. The user's needs are met with the information provided with the info button.	The app's colour pallet of black and blue is vibrant and engaging. The input and interactive page is kept at a minimum, the input is broken into different parts and is consistent with the theme of the app.	The input form in the calculate page is cluttered, the input is not grouped up for classification, there are no colours that engage with the user.
	Widget	It has a widget set in the home section displaying the available zakat funds. Also sets widget for the zakat category which can expand if you interact with it, stating the amount for different purposes.	Sets widget for the zakat category which can expand if you interact with it, stating the amount for different purposes.	Provides a widget for displaying the nisab for gold and silver in grams and GBP.

		different purposes.		
	Notification	Has no options to set notifications on.	Provides notification settings however only accessible in the premium version.	Has no options to set notifications on.
HYGIENE USABILITY	What to do	<ul style="list-style-type: none"> Text is easy to read and the content is not cramped in one space. transitions between screens are quick to respond. 	<ul style="list-style-type: none"> Text is easy to read and the content is not cramped in one space. Tasks are broken down into different categories transitions between screens are quick to respond. 	<ul style="list-style-type: none"> The labels are above the field or are in scrolling form. transitions between screens are quick to respond.
	What not to do	<ul style="list-style-type: none"> The nisab should have a manual option. The app should ask for permission to enter a browser outside the app. The tips and help could be expanded to 	<ul style="list-style-type: none"> The nisab should have a manual option. The app should ask for permission to enter a browser outside the app. The content on the page is cluttered up. 	<ul style="list-style-type: none"> The app's payment sections link the user to the browser outside the app. The content on the page is cluttered up.

		explain the beneficiaries and payment as well as the calculation	<ul style="list-style-type: none"> • The tips and help could be expanded to explain nisab, the history list, etc. 	<ul style="list-style-type: none"> • Text is not easy to read and the spacing is very small.
MISSING PRINCIPLE	Sign in/up	All three case study applications don not have a sign-in feature, however, the sign up is one of the main criteria for security.		
	Account	The principle is an extension to the signup principle, where the user can manage their account by changing password or name, etc.		

Figure 2.1: Comparison Table

2.5 DISCUSSION

The three individual mobile applications have been thoroughly researched and studied, including all the features it has to offer. This research has also been correlated with the requirements of users through questionnaires. Each application may serve its most basic purpose as a Zakat calculator, but it also has several pros and cons.

Zakat Calculator Pro has a simple and basic design that creates an invisible feel and helps users to focus on performing tasks in the app. The colour palette remains consistent throughout the app. Out of the three case studies, this app manages the zakat of the user to the fullest. Save records of the zakat calculations made, the recipients to be paid and the zakat paid. However, the app needs some getting used to since there are no elements or specific features to guide the user to perform the tasks correctly.

SignSoft's Zakat Calculator is straight forward with calculating zakat. However, it does not save the calculations. The nisab board is quite outdated with the nisab value last updated in August 2020 and there is no other method to obtain it manually. Nevertheless, the interface design is intermediate, the entire application except the home screen consists of only one colour. There are no icons or panels to organize the interface. However, it does provide a learning page for people to understand zakat as well as a payment section that links to online zakat organisations

Zakat Pro's functionality. The overall design is clean and smooth, it retains a similar design and the colour palette is fitted well and stays consistent. Everything from the Home screen to history is easily navigable for the average user. Other than its good design and accessibility, it is full of useful features including reminders, zakat history, iCloud, and more to help the user manage their zakat. The only downside is that all the features mentioned are premium protected.

2.6 CONCLUSION

Referring to the comparison table set out in Figure 2.1, a decision may be taken based on what each of the three applications provides. Following a detailed analysis of each of these applications, it has been shown that each application has its pros and cons. Thanks to the case studies, it is easy to distinguish between the best of the three and to take the functionality and design inspiration from those applications to incorporate them into the Zakat Calculator App.

CHAPTER 3

METHODOLOGY

3.1 INTRODUCTION

This chapter will cover the methodology used to develop the Zakat Calculator Application. Several innovations in programming environments have been made using several methodologies to ensure perfect preparation. It is a programming methodology that helps to organise and arrange codes in a more defined manner, including the study, design and execution of programmes. Each planning approach calls for different criteria for the achievement of the project objective, which is why there are several different methodologies for different ways of achieving the project objective. For example, the agile methodology can change due to the demands and solutions of the implementation process and the waterfall methodology do not involve requirement change. The best option to use in this case is the waterfall methodology for the zakat calculator app.

3.2 WATERFALL METHODOLOGY

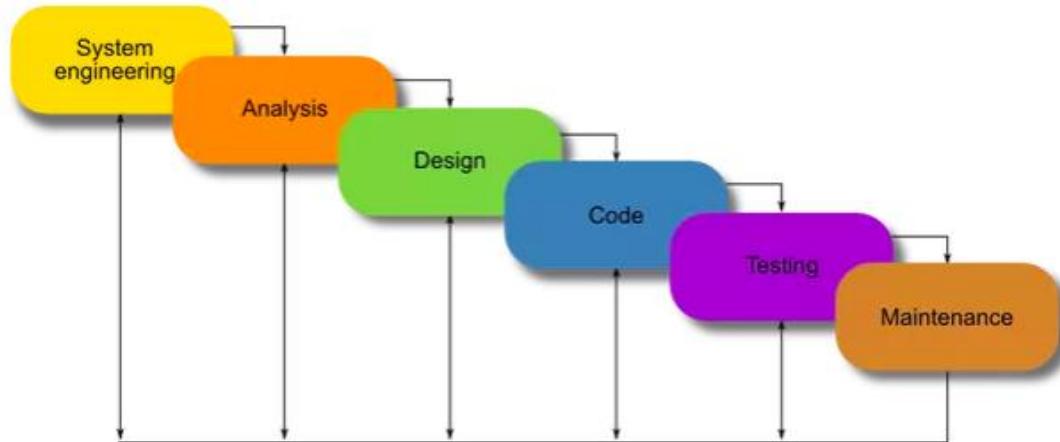


Figure 3.1: Waterfall Methodology

For the System Development Life Cycle (SDLC) of the Zakat Calculator Software, the use of the waterfall principle is selected as a technique to aid in the development process. While it is out of touch with the Agile approach for designing broad implementations, the waterfall methodology often has certain benefits, such as forcing organised organisation, therefore forces the project to be built following the phases of the waterfall. The reason why this approach was chosen primarily because of this advantage, as it is found that the waterfall model still disciplines during the growth processes of the app to keep the project going forward.

Apart from the organisational framework, the waterfall methodology is often tailored to milestone-focused innovations due to the linear framework for the waterfall project. This helps to work within a milestone and a timeline for a final year project and to schedule the project and stages carefully.

3.2.1 Phase 1: System Engineering

In the first phase of the waterfall methodology, I form the needs of all the elements of the system. Because the Zakat Calculator Application is dependent on several larger applications, frameworks and code, this phase is necessary so that all the necessities of commencing this project is taken care of.

In the process of creating the Zakat Calculator Application, the system requirements were formed as the result of system engineering, by looking for what is needed to achieve the completion of this project.

3.2.2 Phase 2: Analysis

The analysis phase is a phase where the system is further analyzed. Data is gathered from clients or users to determine and generate the user requirements of the project. This phase is important, and if executed properly it may be able to lead the client to explore possibilities.

The data collecting technique used for this project is the questionnaire technique specifically through Google Forms where a set of questions will be shared with the public to obtain collect individual answers from it. The questionnaire consists of three parts: demographic information, the identification of current problems, and the requirement for the newly proposed application. All parts of the questionnaire are critical for identifying the user requirement.

Below are the graphs to represent the user requirement form:

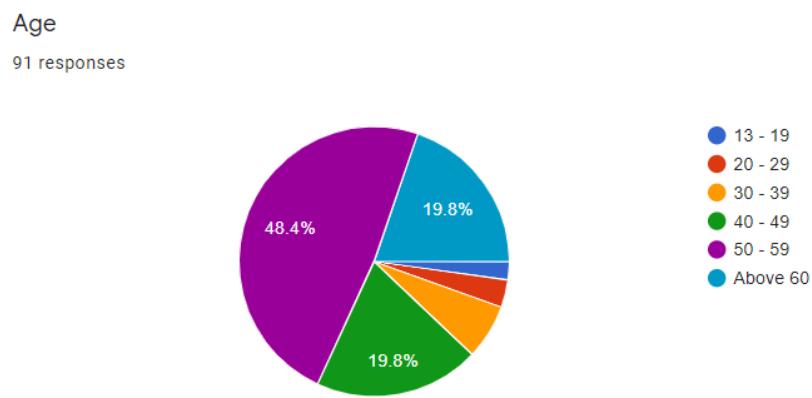


Figure 3.2: Pie Chart 1

The first question in the survey is about the age of the user. Based on the chart above, the majority of the respondents are from the age of 50 to 59 with the percentage of user is 48.4% while the respondents for both ages of 40 to 49 and above 60 lead behind with

both percentages being 19.8%.

I do not know how to calculate my zakat.

91 responses

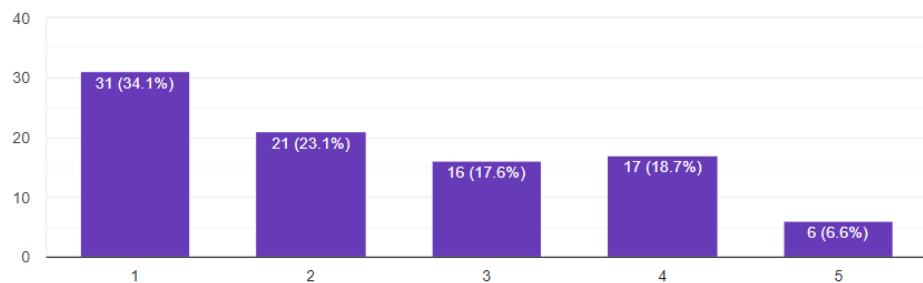


Figure 3.3: Bar Chart 1

The second question in the survey is about whether Muslims know how to calculate their zakat. Based on the chart above, the majority of the respondents are strongly disagreeing with the percentage of 34.1% while the least strongly agree with a percentage of 6.6%.

I have issues with calculating my zakat.

91 responses

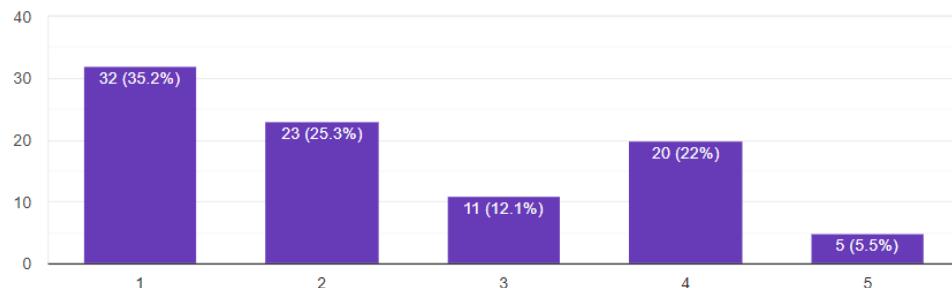


Figure 3.4: Bar Chart 2

The third question in the survey is about whether Muslims have issues calculate their zakat. Based on the chart above, the majority of the respondents are strongly disagreeing with a percentage of 35.2% while the least strongly agree with a percentage of 5.5%.

I manually record all my zakat annually.

91 responses

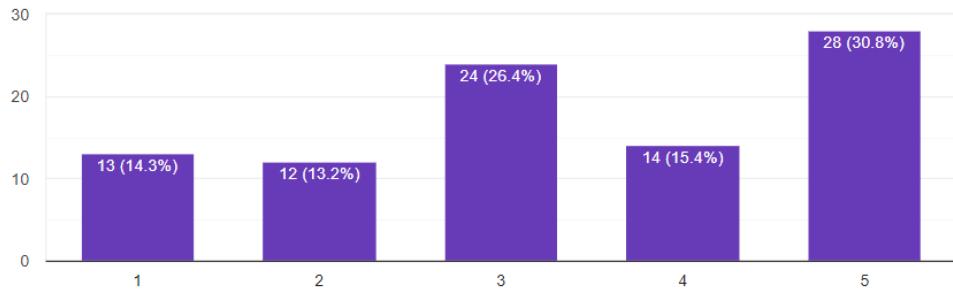


Figure 3.5: Bar Chart 3

The fourth question in the survey is to find Muslims who manually record their zakat. Based on the chart above, the majority of the respondents are strongly agreeing with a percentage of 30.8% while the least strongly disagree with a percentage of 14.3%.

I always forget my zakat calculation information.

91 responses

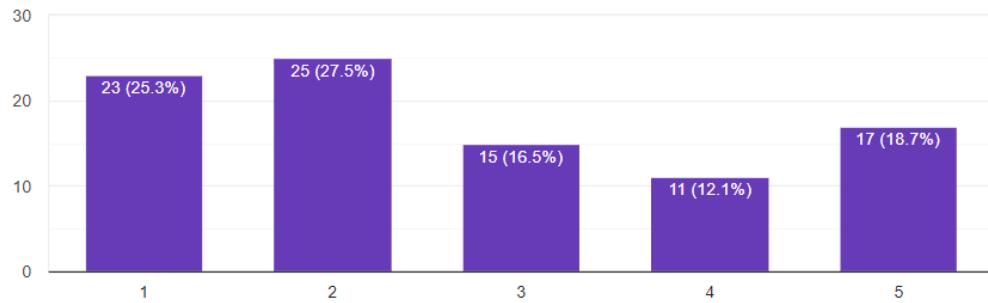


Figure 3.6: Bar Chart 4

The fifth question in the survey is about whether Muslims forget their zakat information. Based on the chart above, the majority of the respondents are disagreeing with a percentage of 27.5% while the least agree with a percentage of 12.1%.

I compile all my zakat calculations either physically or digitally.

91 responses

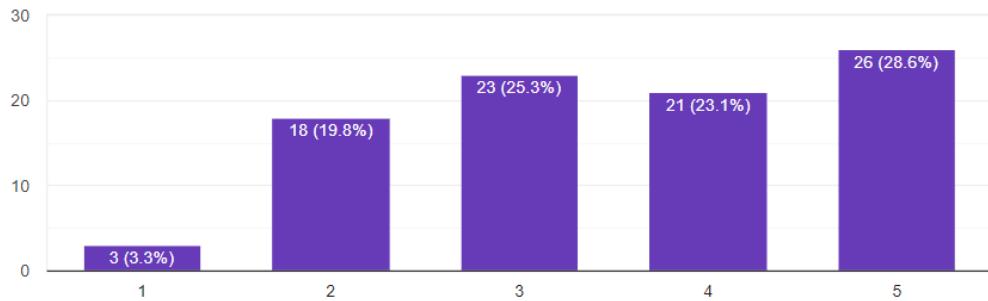


Figure 3.7: Bar Chart 5

The sixth question in the survey is about whether Muslims compile their zakat information. Based on the chart above, the majority of the respondents are strongly agreeing with a percentage of 28.6% while the least strongly disagree with a percentage of 3.3%.

I manage my zakat through zakat application.

91 responses

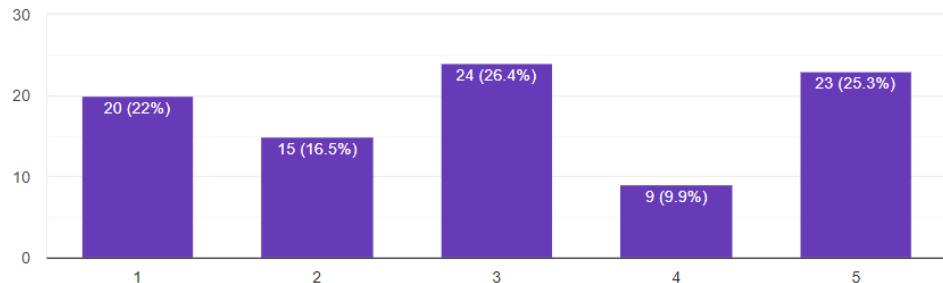


Figure 3.8: Bar Chart 6

The seventh question in the survey is about whether Muslims manage their zakat information. Based on the chart above, the majority of the respondents are neutral with a percentage of 26.4% while the least agree with a percentage of 9.9%.

Have you ever used a zakat calculator application before?

91 responses

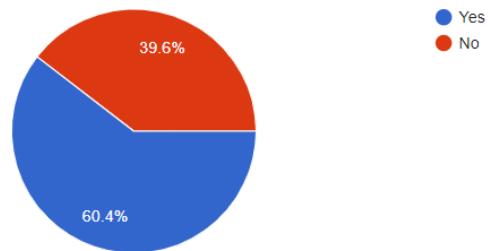


Figure 3.9: Pie Chart 2

The eighth question in the survey is about whether Muslims ever used a zakat calculator before. Based on the chart above, the majority of the respondents have used a zakat calculator application with a percentage of 60.4% while the rest have not with a percentage of 39.6%.

Do you have an efficient way to manage zakat on your own?

91 responses

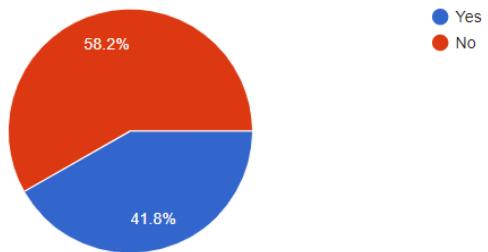


Figure 3.10: Pie Chart 3

The eighth question in the survey is about if the respondents have an efficient way to manage their zakat calculations. Based on the chart above, the majority of the respondents do not have an efficient way with a percentage of 58.2% while the rest do with a percentage of 41.8%.

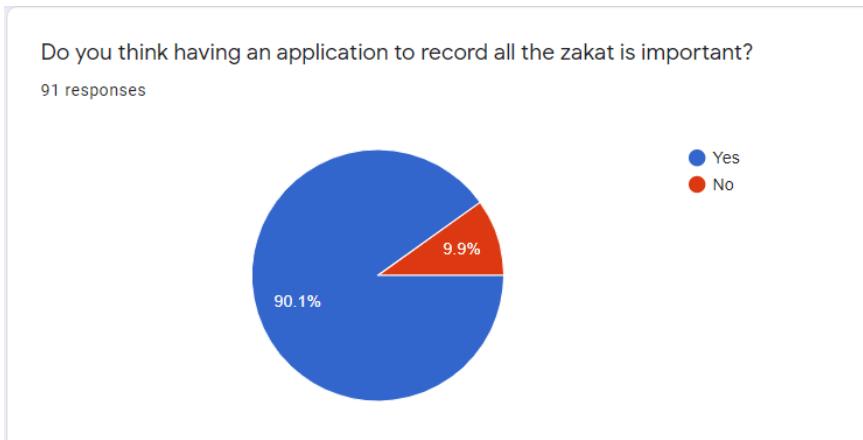


Figure 3.11: Pie Chart 4

The eighth question in the survey is about if the respondents think that having an application record all personal zakat information is important. Based on the chart above, the majority of the respondents believe it is important with a percentage of 90.1% while the rest do not with a percentage of 9.9%.

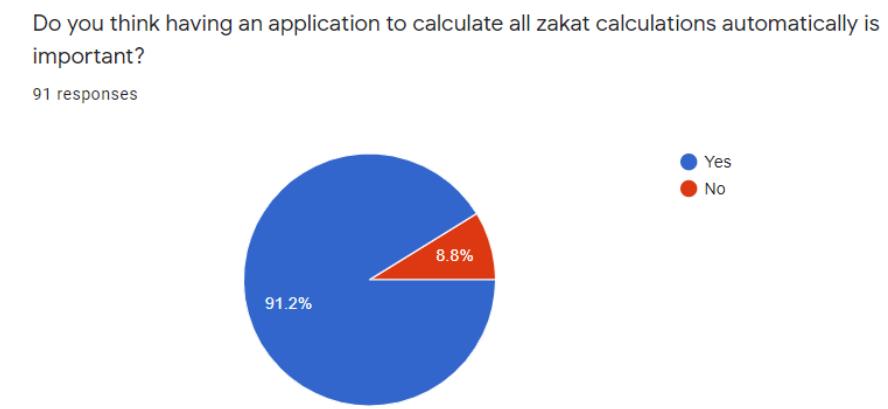
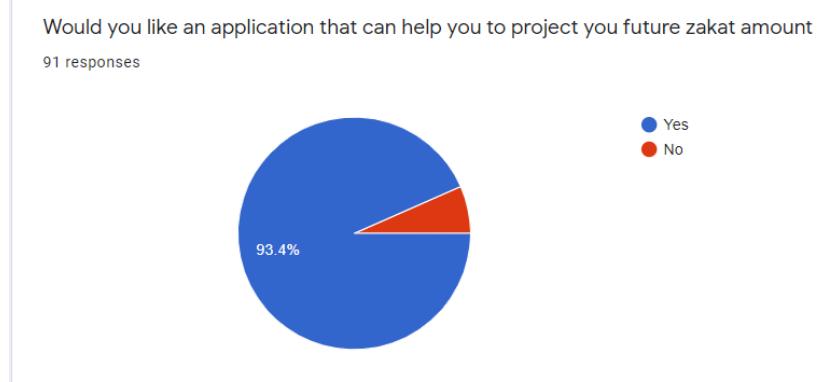
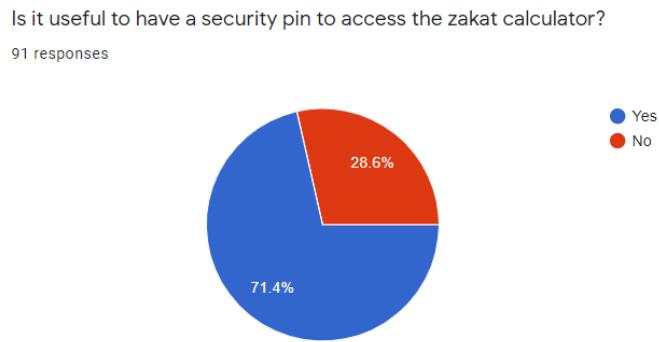


Figure 3.12: Pie Chart 5

The eighth question in the survey is about if the respondents think that having an application automatically calculate zakat information is important. Based on the chart above, the majority of the respondents believe it is important with a percentage of 91.2% while the rest do not with a percentage of 8.8%.

**Figure 3.13:** Pie Chart 6

The eighth question in the survey is about if the respondents would like an application that can help to project future zakat amount. Based on the chart above, the majority of the respondents would like the application with a percentage of 93.4% while the rest do not with a percentage of 6.6%.

**Figure 3.14:** Pie Chart 7

The eighth question in the survey is about if the security pin is useful for zakat calculator. Based on the chart above, the majority of the respondents believe it is useful with a percentage of 71.4% while the rest do not with a percentage of 28.6%.

3.2.3 Phase 3: Design

This phase covers the design of the app and the visual idea around the project. The requirement in the first phase is evaluated in this phase to help with preparing the design and specifying the hardware and software requirements. During the initial stages of designing the interface, a plan for a basic design concept of the program and implementing the features is made before adding details and finalizing the design.

3.2.4 Phase 4: Coding

This phase is about the implementation of the workings behind the product of the project and covers the code and programming language used in the project. The programming languages used are the LiveCode programming language and SQL.

First, the LiveCode programming language is object-based, meaning the codes are attached to individual objects such as buttons, fields, graphics, etc. This makes the implementation process easier than object-oriented programming because it allows code to be reused in other objects as well.

Secondly, the database management aspect uses SQLite, an open-source relational database management system to add, access and manage contents of the Zakat Calculator Application database due to its quick processing and flexibility. SQLite uses the Structured Query Language (SQL) to execute commands. The code connected between both languages is centralized through functions where the SQL command is contained in a string and sent to the database file through LiveCode.

3.2.5 Phase 5: Testing

Also known as the verification phase, the testing phase focuses on the testing of the program.

The first test is an alpha test where the developer tests the application to ensure that the product works fine, a testing checklist will be made to test the functions of the application for documentation.

The second test is a beta test where the application and demo video will be released to the public for users to test out the application to ensure that the application meets its requirements that were done in the beginning. Users are given another survey after they have reviewed the application to gather information about the functionality of the application and user satisfaction.

3.2.6 Phase 6: Maintenance

This phase covers the maintenance of the program. This is specifically if bugs are found or complaints are made about a certain feature. This is to ensure that the users are satisfied and to improve the product of the application.

3.3 SYSTEM DIAGRAM

3.3.1 Use Case Diagram

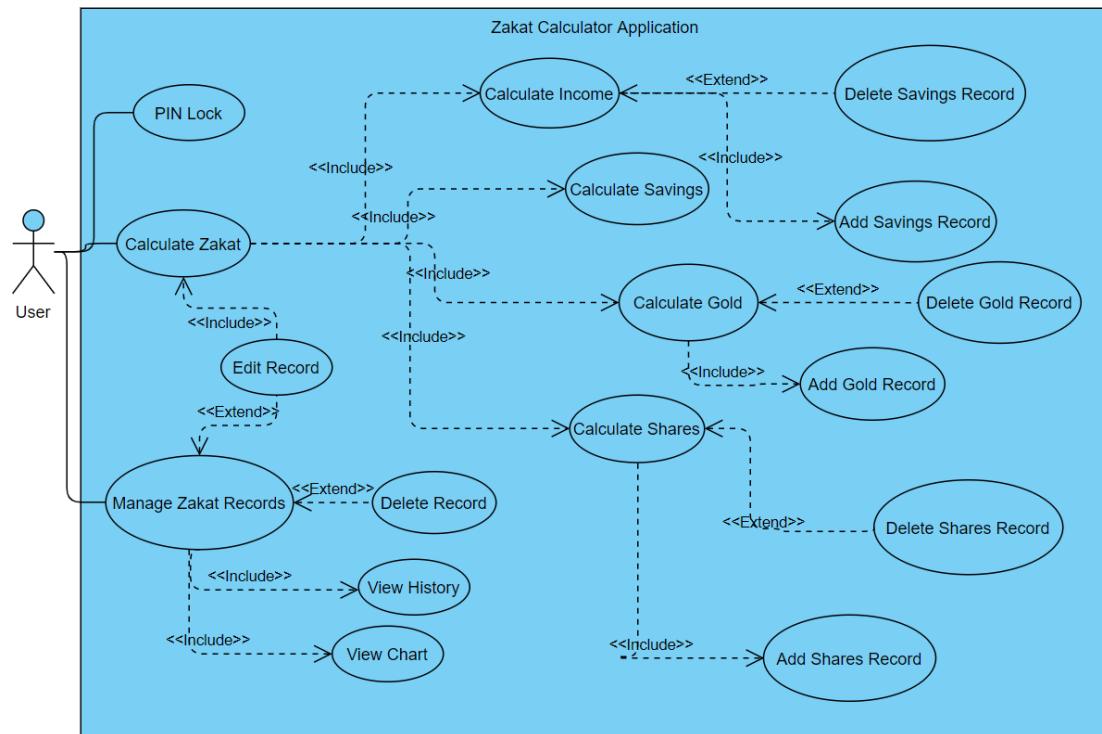


Figure 3.15: Use-case diagram

3.3.2 Entity Relation Diagram

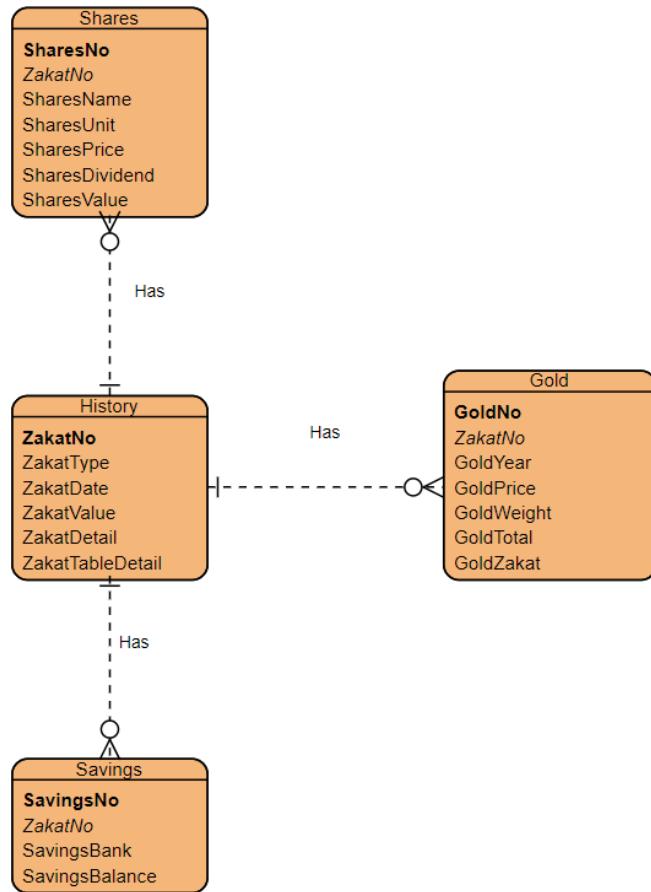


Figure 3.16: Entity relationship diagram

3.3.3 Flowchart Diagram

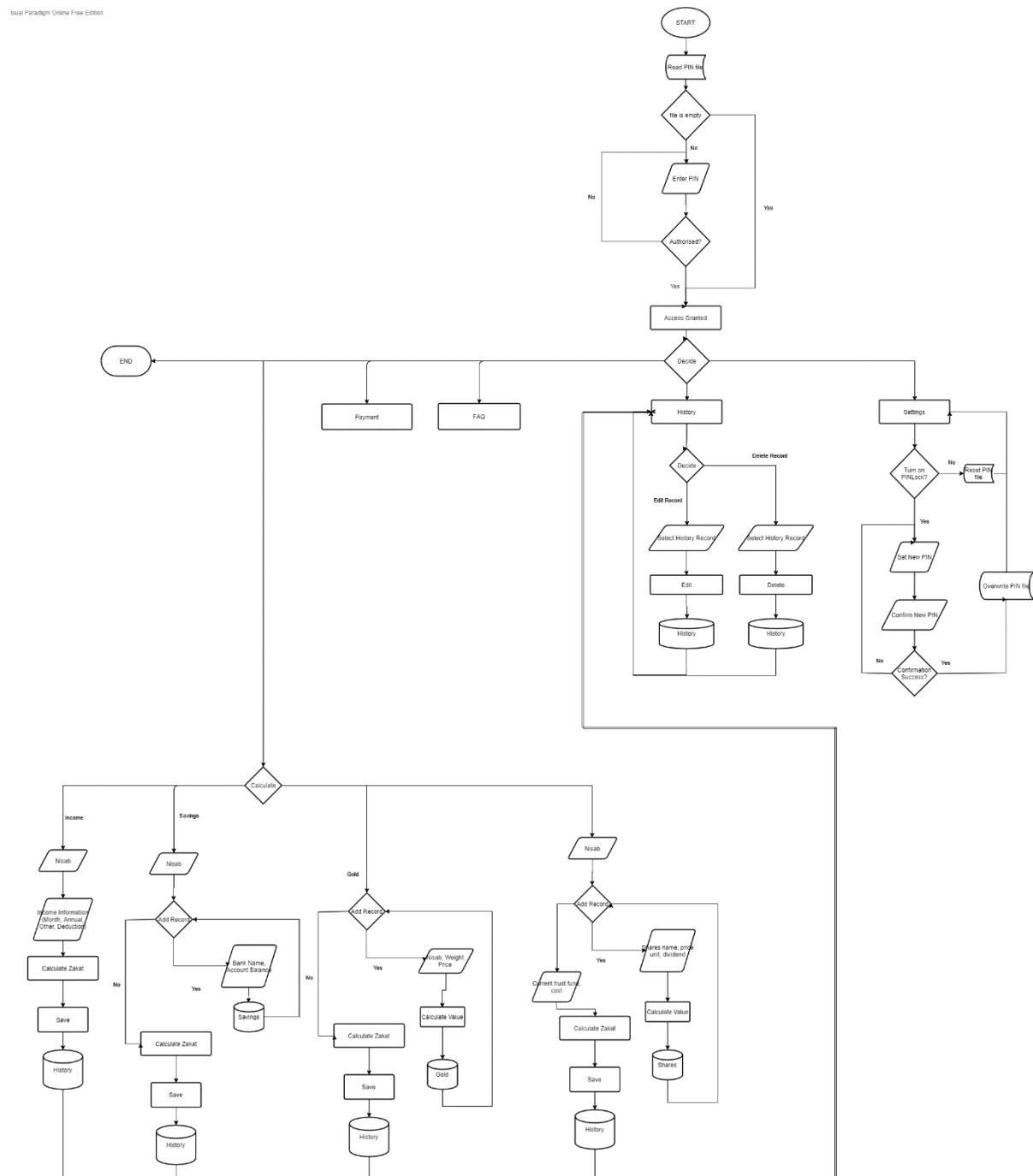


Figure 3.17: Flowchart diagram

3.3.4 Data Dictionary

Field Name	Data Type	Field Size	Constraint	Description	Example
ZakatNo	varchar	255	Primary	Unique key	25
ZakatType	varchar	255	Null	The type of zakat calculation	Income
Zakat_Date	numeric	-	Null	The year of zakat made	2021
ZakatValue	numeric	-	Null	The zakat made	530.2
ZakatDetail	varchar	1000	Null	The string of information saved for editing	20299, 1600, 19200,
ZakatTableDetail	varchar	1000	Null	The string of numbers that indicate the table number for tables (savings, gold, shares)	1,3,4,5

Table 3.1: Data Dictionary ‘history’

Field Name	Data Type	Field Size	Constraint	Description	Example
SavingsNo	varchar	255	Primary	Unique key	25
SavingsBank	varchar	255	Null	The bank name	CIMB
SavingsBalance	numeric	-	Null	The account balance	3028

Table 3.2: Data Dictionary ‘savings’

Field Name	Data Type	Field Size	Constraint	Description	Example
GoldNo	varchar	255	Primary	Unique key	25
GoldYear	numeric	-	Null	The year the gold was from	2018
GoldPrice	numeric	-	Null	The gold price per gram	234
GoldWeight	numeric	-	Null	The gold weight in grams	98
GoldTotal	numeric	-	Null	The result of the price and the	2146
GoldZakat	numeric	-	Null	The zakat calculated from total	535

Table 3.3: Data Dictionary ‘gold’

Field Name	Data Type	Field Size	Constraint	Description	Example
SharesNo	varchar	255	Primary	Unique key	25
SharesName	varchar	255	Null	The name of the shares	TSB
SharesUnit	numeric	-	Null	The unit of the shares	2000
SharesPrice	numeric	-	Null	The price per unit	9.9
SharesDividend	numeric	-	Null	The dividend of the share	420
SharesValue	numeric	-	Null	The value of the share	2579

Table 3.4: Data Dictionary ‘shares’

3.4 INTERFACE DESIGN

3.4.1 Input Design

The input design is where the information taken from the user to be operated on by the application.

3.4.1.1 Zakat Calculations

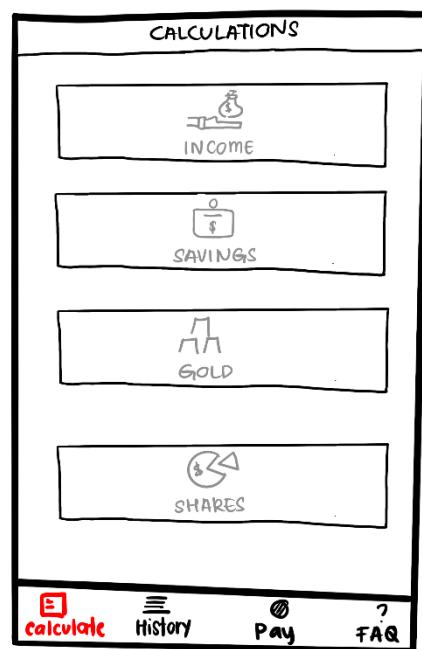


Figure 3.18: Zakat Calculations

In figure 3.2, the page asks the user to select a type of zakat that they intend to use to calculate their zakat. These options include income, savings, gold and shares.

3.4.1.2 Zakat Income

Figure 3.19: Zakat Income

In figure 3.3, the most common and basic form for calculating zakat is zakat for income. The page requires you to enter the Nisab and the year applied to it. Depending on the income type chosen, you can enter the monthly income or the yearly income. The next is the other outside income and the contributions.

3.4.1.3 Zakat Savings

Zakat Savings

Nisab (i) year Nisab

ADD SAVING ZAKAT

Bank Name Account Balance Add

Zakat savings table

Total	RM	<input type="text"/>
-------	----	----------------------

TOTAL ZAKAT SAVINGS

Total worth of Zakat RM	<input type="text"/>
Total zakat RM	<input type="text"/>

reset

Figure 3.20: Zakat Savings

In figure 3.4, similar to the income page, the page asks for the Nisab and the year applied to it as well as the bank name and the account balance for adding records.

3.4.1.4 Zakat Gold

Zakat Gold

Uruf (i) year gram

Gold Price

ADD GOLD ZAKAT

Weight	<input type="text"/>
Type	<input checked="" type="checkbox"/>
Price	<input type="text"/>
Total	<input type="text"/>

Gold zakat table

Weight	<input type="text"/>
Price	<input type="text"/>

TOTAL ZAKAT GOLD

worn gold	RM	<input type="text"/>
Stored gold	RM	<input type="text"/>
Total zakat	RM	<input type="text"/>

Reset

Figure 3.21: Zakat Gold

In figure 3.5, the page asks for the Uruf, the year applied to it and the gold price. Next is adding zakat to the records which require the weight and type.

3.4.1.5 Zakat Shares

Total	[km]
Current Trust Account Balance	[km]
Related Costs	[km]
Amount Eligible in Zakat	[km]
Total Zakat	[km]

Figure 3.22: Zakat Shares

In figure 3.6, similar to the income and savings page, the page asks for the Nisab and the year applied to it as well as the shares type. For adding records, the page asks for the name, unit, price and dividend of the shares.

3.4.1.6 Zakat Nisab

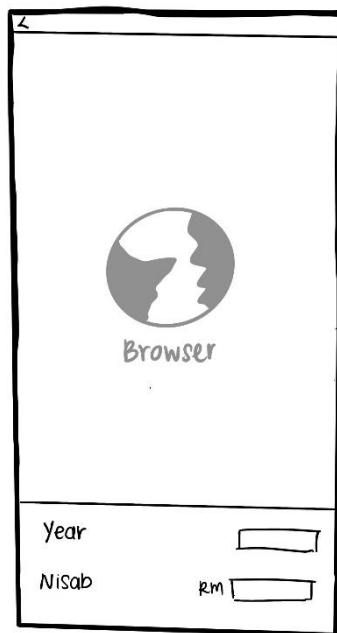


Figure 3.23: Zakat Nisab

In figure 3.7, the page is specifically for the users who do not know the nisab. The user can enter the year and the Nisab by following the table in the form of a website browser.

3.4.2 Output Design

The output design is where the information taken from the user will be converted and transferred back to the user. In this case, the user originated information is used to calculate and display the result of said information.

3.4.2.1 Zakat Income

Zakat Income

Nisab ① year nisab

INCOME INFO

Income type
Monthly Income RM
Yearly Income RM
Other Income RM

TOTAL INCOME ZAKAT

Total Income worthy of Zakat RM
Contribution RM
Zakat Contribution Deduction RM
Total Annual Zakat RM
monthly Zakat amount RM

RESET SAVE

Figure 3.24: Zakat Income

In figure 3.8, the output will automatically be displayed after all input has been entered. Depending on the income type, the other option will display, for example, if the monthly income has been entered, the yearly income will multiply that by 12 and display the result and vice versa. Next, the total income worthy of zakat is the sum of the income and the other income. Zakat contribution deduction is the total income minus the contributions made. The total annual zakat will multiply the zakat contribution deducted or the total income of zakat if no contributions have been made by 2.5. The monthly zakat amount will display the result of the total annual zakat divided by 12.

3.4.2.2 Zakat Savings

Figure 3.25: Zakat Saving

In figure 13.2.2, the output displayed on the page is the zakat savings table and the total sum from the zakat savings table which will display a list of bank names and account balance entered by the user. The total worth of zakat is taken from the total sum and the total zakat will display the result of the total worth multiplied by 2.5.

3.4.2.3 Zakat Gold



Figure 3.26: Zakat Gold

In figure 3.10, the page will display the total from the add gold zakat section where it will calculate the weight and the price of the gold added. Once done, the gold zakat table will display the weight, type, price and total of the gold. The total zakat gold sections will display the sum of gold, worn gold will display the sum of records classified as worn gold and the stored gold will display the sum of records classified as stored gold. The total zakat will display the sum of all gold.

3.4.2.4 Zakat Shares

The form is a wireframe of a mobile application. At the top is a header with a back arrow and the title 'Zakat Shares'. Below this is a 'Nisab' section with two dropdowns labeled 'year' and 'Nisab'. Next is a 'Shares Type' dropdown set to 'IV'. Below these is a table for 'ADD ZAKAT SHARE' with columns 'Name', 'Unit', 'Price', 'Dividend', and 'Value'. A green 'ADD' button is centered below the table. Below this is a section titled 'Zakat Shares Table' containing a summary table:

Total	kml
Current Trust Account Balance	kml
Related Costs	kml
Amount Eligible in Zakat	kml
Total Zakat	kml

At the bottom are 'Reset' and 'SAVE' buttons.

Figure 3.27: Zakat Shares

In figure 3.11, the page output displays the zakat shares table which has the name, unit, price, dividend, and value of shares added. Then it will display the total sum of the value from the table. The amount eligible in zakat will display the result of calculations from the total, current trust account balance and related cost. The total zakat will take the amount eligible and multiply that by 2.5.

3.4.2.5 Zakat History

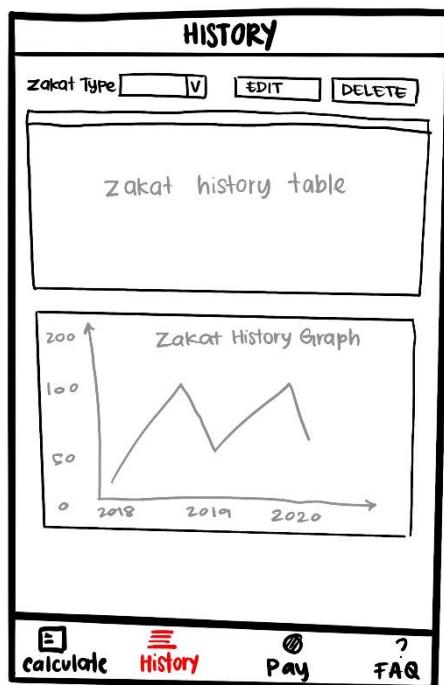


Figure 3.28: Zakat History

In figure 3.12, the page output displays the zakat history table where all the records of zakat are saved, it displays the amount eligible, the total zakat for it and the zakat type. The records can also be viewed in the form of a graph based on the zakat type, it will show the progress of the records.

3.4.2 Zakat Pay

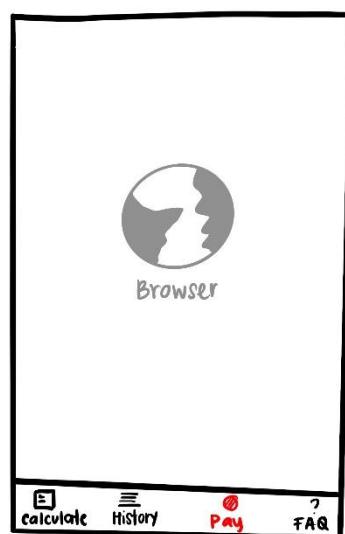


Figure 3.29: Zakat Pay

In figure 3.13, the page only displays a web browser linked to a platform to pay zakat.

3.4.2.7 Zakat FAQ

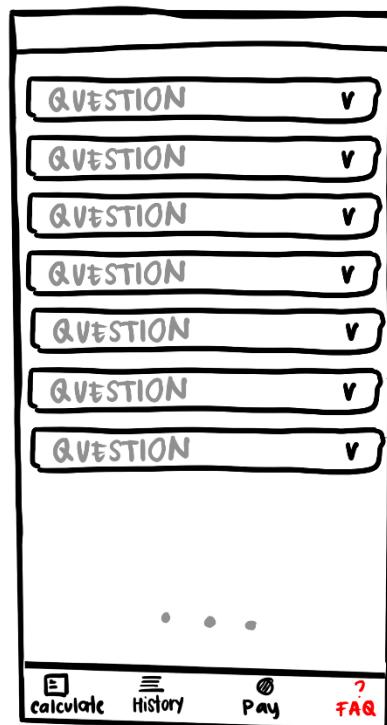


Figure 3.30: Zakat FAQ

In figure 3.14, the page only displays a series of questions that can be expanded if interacted with to show the answer.

3.4.3 Final Design

The subtopic covers the official design of the Zakat Calculation Application.

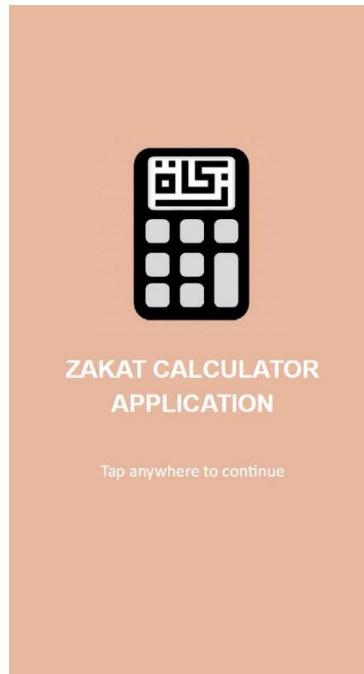


Figure 3.31: Splash screen

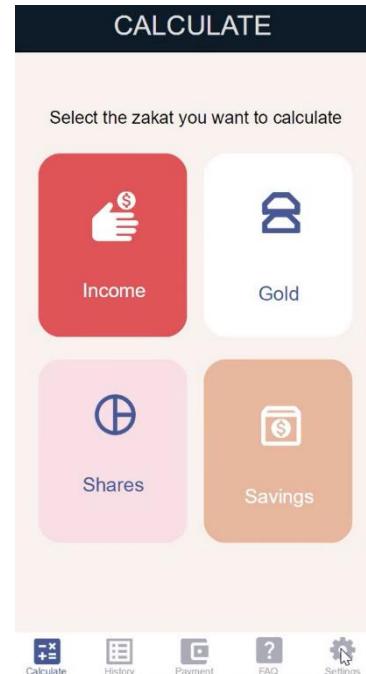


Figure 3.32: Calculate Page

Tahun	NISAB (RM)	Nilai Emas (RM) / gram
2021	20,299.00	238.81
2020	15,762.00	185.44
2019	13,968.00	164.33
2018	14,772.00	173.99
2017	14,083.00	165.68
2016	12,335.00	145.12
2015	11,308.00	133.00
2014	12,223.00	147.00
2013	14,066.00	164.33
2012	13,113.00	154.27
2011	10,300.00	121.18

Figure 3.33: Nisab Page

Tahun	NISAB (RM)	Nilai Emas (RM) / gram
2021	20,299.00	238.81
2020	15,762.00	185.44
2019	13,968.00	164.33
2018	14,772.00	173.99
2017	14,083.00	165.68
2016	12,335.00	145.12
2015	11,308.00	133.00
2014	12,223.00	147.00
2013	14,066.00	164.33
2012	13,113.00	154.27

Figure 3.34: Nisab Gold Page

Income

Enter the Nisab

Income Type: Monthly (selected)

Monthly Income	0
Annual Income	0
Other Income	0

Total Income: 0

Deduction: 0

Zakat Information:

- Eligibility: Worthy
- Annual Zakat: 517.5 >

SAVE

Figure 3.35: Income Page

Savings

Enter the Nisab

Savings Records

Bank Name	Account Balance
[Empty]	[Empty]

+ Delete

Total Balance: 0

RESET OK

Zakat Information:

- Eligibility: Worthy
- Total Zakat: 543.13

SAVE

Figure 3.36: Savings Page

Gold

Gold Records

2021

Add Gold Delete

Year	Price	Weight	Total	Zakat
[Empty]	[Empty]	[Empty]	[Empty]	[Empty]
[Empty]	[Empty]	[Empty]	[Empty]	[Empty]
[Empty]	[Empty]	[Empty]	[Empty]	[Empty]
[Empty]	[Empty]	[Empty]	[Empty]	[Empty]

Total Balance: 0

RESET OK

Zakat Information:

- Eligibility: Worthy
- Total Zakat: 537.32

SAVE

Figure 3.37: Gold Page

Create Gold Record

Enter the Nisab

price/gram weight

RM [Empty] g [Empty]

Total: 0

RESET OK

Zakat Information:

- Eligibility: Worthy
- Total Zakat: 537.32

+

Figure 3.38: Gold Records Page

The Shares page allows users to enter the Nisab and manage shares. It includes fields for Name, Unit, Price, Div, and Value, along with summary totals for Total, Current Trust Balance, Related Costs, and Cumulative Total. Buttons for RESET and OK are present, along with a SAVE button at the bottom.

Figure 3.39: Shares Page

The Create Shares Record page is used to add new share records. It requires input for Name, Unit, Price, and Dividend, and displays a Total value of 0. Buttons for RESET and a green plus sign are available.

Figure 3.40: Shares Records Page

The History Table page displays a table of income and zakat data. The table has columns for Type, Date, and Zakat. The data shows three entries: Income in 2021 (512.52), Income in 2020 (409.2), and Income in 2019 (373.75). Navigation icons for Calculate, History, Payment, FAQ, and Settings are at the bottom.

Type	Date	Zakat
Income	2021	512.52
Income	2020	409.2
Income	2019	373.75

Figure 3.41: History Table Page

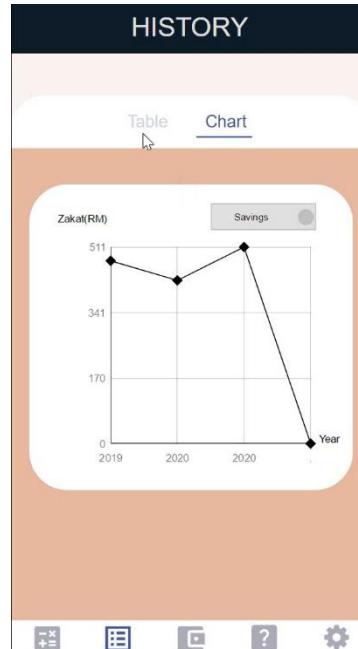


Figure 3.42: History Graph Page

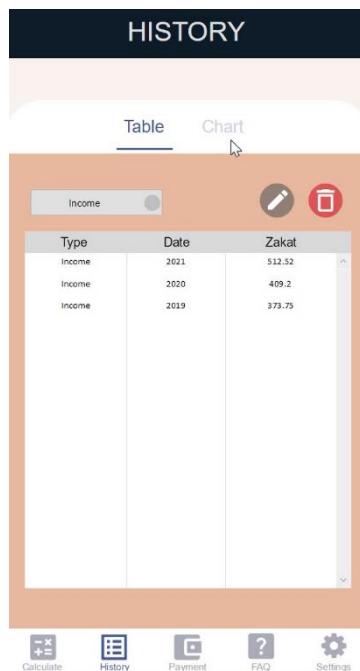


Figure 3.43: FAQ Page

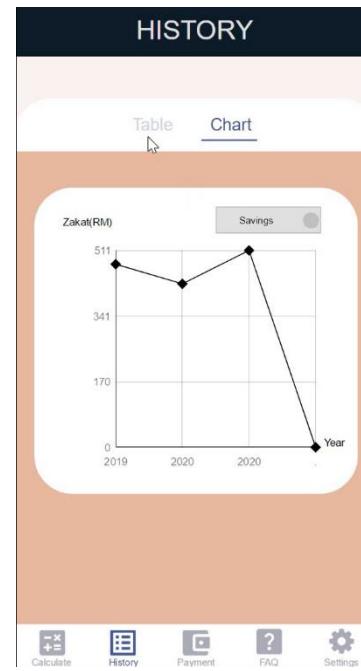


Figure 3.44: Answer Page

The screenshot shows a mobile application interface titled "CALCULATE". At the top, there is a logo for "LAMINA ZAKAT SELANGOR" and a back arrow icon. Below the title is a step indicator "4. Resit Bayaran Zakat >".

Masukkan Maklumat Pembayaran

Nama Penuh:

Nama penuh pengeluar zakat (seperti Kad Pengenalan).
⊗*Ruangan ini wajib diisi.*

Jenis Pengenalan: Pilih Jenis Pengenalan Anda
⊗*Ruangan ini wajib diisi.*

Nombor Pengenalan:

Contoh Mykad: 700223109999 atau Passport: A17041223 atau No Syarikat: 122805048U

At the bottom are five navigation icons: Calculate, History, Payment, FAQ, and Settings.

Figure 3.45: Payment Page

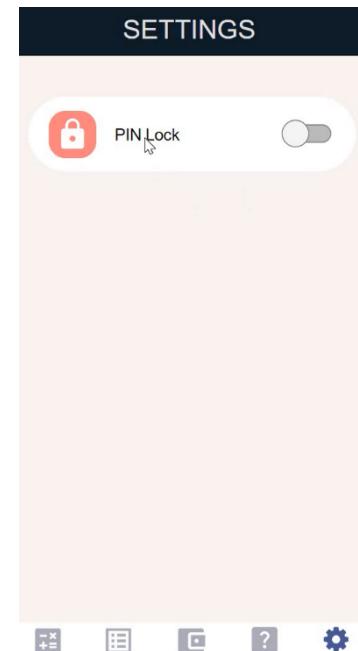


Figure 3.46: Settings Page

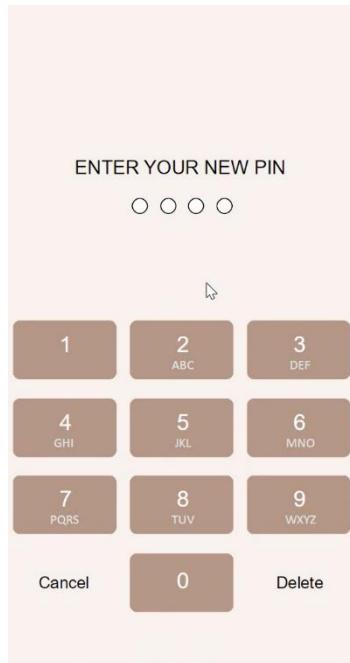


Figure 3.47: PIN Set Page

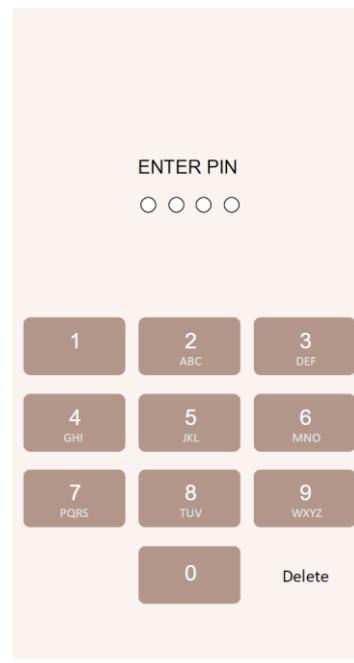


Figure 3.48: PIN Lock Page

3.5 CONCLUSION

To conclude this chapter, the contents discussed was about the waterfall methodology. The Zakat Calculator Application follows the waterfall methodology to pan out the stages of development due to its suitability and its flow as a system. All six phases of the waterfall were discussed including activities in each stage. Other than that, the product was visually portrayed in four different system diagrams.

CHAPTER 4

FINDINGS AND RESULT

4.1 INTRODUCTION

This chapter will provide the results obtained from the final product to be analysed and evaluated, the mobile application, as well as a demo video, is deployed into a live environment to gather the results of the final product. These results include feedback by the client, testing and evaluation of the system. The chapter will also analyse the results of the mobile application system to add to the conclusion in the next chapter.

4.2 MOBILE APPLICATION EVALUATION AND TESTING

The purpose of conducting a mobile application evaluation testing is to challenge the final product of the Zakat Calculator Application. Rigorous testing methods will be performed on the system to ensure every aspect of the application is functioning according to the user requirements. The process throughout the testing is aimed to intentionally “break” the system by testing every possible possibilities and occurrence that may cause the system to malfunction or not work as intended to.

4.2.1 Unit Testing

Following the unit testing conducted during the development, also known as alpha testing, the unit testing is performed by the developer after the development of the Zakat Calculator Application is complete to ensure that there were no mishaps or issues overlooked during the development.

To perform the after-development unit testing, a set of scenarios have been prepared to ensure every aspect of the system is thoroughly tested.

Scenario 1.0: Zakat Calculation

No	Module Testing	Input Data	Debugging	Expected Output	Result
1.	User obtains nisab	User insert data: I. Nisab: 20299	Data cannot proceed if the user does not fill in data. No error if the user fills all the data	Success	PASS
		User insert data: I. Nisab: Null	Data cannot proceed if the variables are not numbers	“Error, ‘please enter the nisab!’”	PASS
2.	The user obtains nisab for gold	User insert data: I. Nisab: 20299 II. Price: 238.81	Data cannot proceed if the user does not fill in data. No error if the user fills all	Success	PASS

			the data		
		User insert data: I. Nisab: Null II. Price: Null	Data cannot proceed if the variables are not numbers	“Error, ‘please enter the nisab and price!’”	PASS
3.	User calculates Income zakat	User insert data: I. Month/Annual Income: 1500 II. Other Income: 3000 III. Deduction: 300	Data cannot proceed if the user not fill in one of the data. No error if the user fills all the data	Saved	PASS
		User insert data: I. Month/Annual Income: Null II. Other Income: Null III. Deduction: Null	Data cannot proceed if the variables are not numbers	“Error, ‘please enter the correct value!’”	PASS
4.	User calculates savings zakat	User insert data: I. Bank Name: CIMB II. Account Balance: 1286	Data cannot proceed if the user not fill in one of the data. No error if the user fills all the data	Saved	PASS
		User insert data: I. Bank Name: Null	Data cannot proceed if the records	“Error, ‘please add a record!’”	PASS

		II. Account Balance: Null	are not added		
5.	User calculates gold zakat	User insert data: I. Weight: 90	Data cannot proceed if the user not fill in one of the data. No error if the user fills all the data	Saved	PASS
		User insert data: I. Weight: Null	Data cannot proceed if the records are not added	“Error, ‘please enter the correct value!’”	PASS
6.	User calculates shares zakat	User insert data: I. Name: TSB II. Unit: 1000 III. Price: 9.9 IV. Dividend: 420 V. Trust Balance: 3300 VI. Cost: 200	Data cannot proceed if the user not fill in one of the data. No error if the user fills all the data	Saved	PASS
		User insert data: I. Name: Null II. Unit: Null III. Price: Null IV. Dividend: Null V. Trust Balance: Null VI. Cost: Null	Data cannot proceed if the records are not added	“Error, ‘please add a record!’”	PASS

9.	Delete Record	User insert record	No error	Successful	PASS
10	Edit Record	User insert record	No error	History Edited	PASS

Table 4.1: Unit Testing Scenario 1**Scenario 2.0:** Zakat History

No	Module Testing	Input Data	Debugging	Expected Output	Result
7.	User PIN	User insert PIN	No error because the user insert the correct PIN	Successful	PASS
		User insert PIN	Error because user insert the incorrect PIN	PIN Invalid, please try again	PASS
8.	User Set PIN Lock	User able to set PIN Lock I. PIN: 1234 II. Confirm PIN: 1234	No error	Set PIN successful	PASS
		User able to PIN Lock I. PIN: 1234 II. Confirm PIN: 2379	Error if the user does not match the confirm PIN with the	Set PIN unsuccessful	PASS

			new PIN		
--	--	--	---------	--	--

Table 4.2: Unit Testing Scenario 2

4.2.2 User Acceptance Testing

User Acceptance Testing, also known as beta testing, is a type of testing where the target users are the testers of the system. Before the final product can be passed on, the system must also undergo testing by the actual clients to verify the needs of the system are met and in compliance with their set of user requirements. Only after the user acceptance testing is performed and confirmed to meet the user's requirements can the final product be passed on to the client and deployed in a live environment.

A copy of the final product of the mobile application and the demo video was released in the user's environments and the test was conducted using their methods. The User Acceptance Testing analysis is based on the google form given asking users to see if the features of the application operate as intended, provide their decision and comments regarding the application.

The results of the google form are displayed in the charts below:

Zakat calculation is made easier.

31 responses

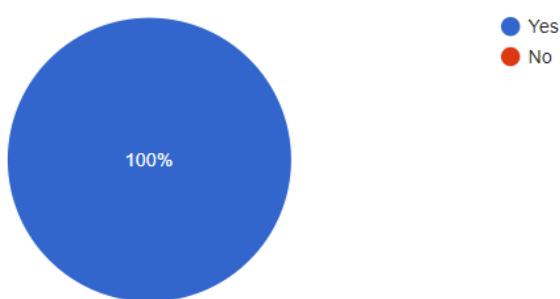


Figure 4.1: Pie Chart 8

The first requirement is that zakat calculation is easy. From this chart, all respondents from the survey said yes.

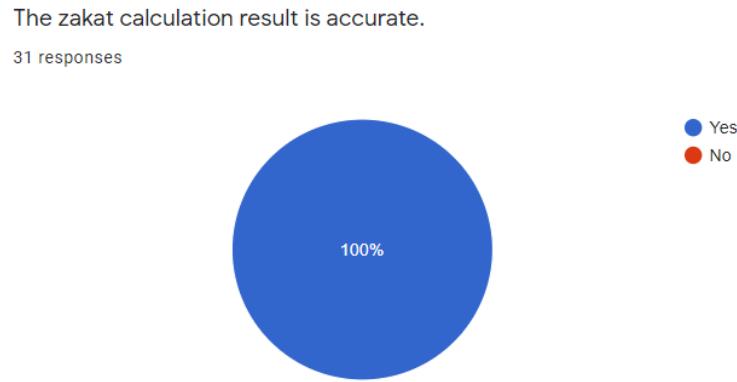


Figure 4.2: Pie Chart 9

The second requirement is that the zakat calculation result is accurate. From this chart, all respondents from the survey said yes.

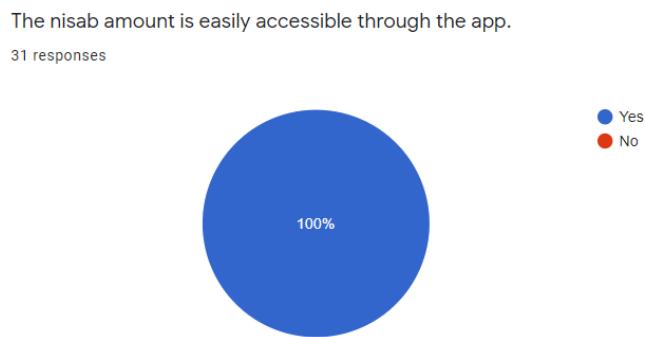


Figure 4.3: Pie Chart 10

The third requirement is that the nisab amount is easily accessible through the app. From this chart, all respondents from the survey said yes.

The delete button works and the edited zakat calculation result is accurate .

31 responses

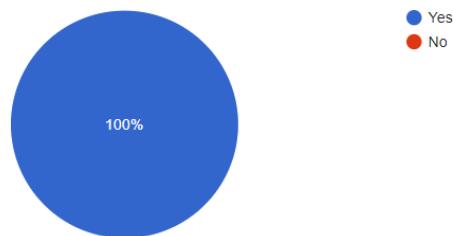


Figure 4.4: Pie Chart 11

The fourth requirement is that the delete button works and the edited zakat calculation result is accurate. From this chart, all respondents from the survey said yes.

The zakat calculations can be sorted and converted into a graph according to the selected zakat type.

31 responses

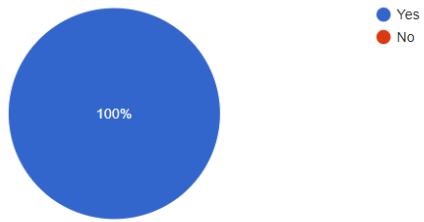


Figure 4.5: Pie Chart 12

The fifth requirement is that the zakat calculations can be sorted and converted into a graph according to the selected zakat type. From this chart, all respondents from the survey said yes.

The table data and line graph of the zakat calculations is accurate.
31 responses

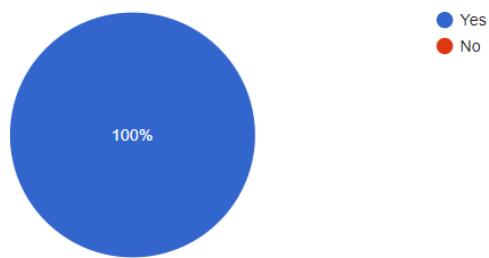


Figure 4.6: Pie Chart 13

The sixth requirement is that the table data and a line graph of the zakat calculations are accurate. From this chart, all respondents from the survey said yes.

Keeping track of the zakat history is easy.
31 responses

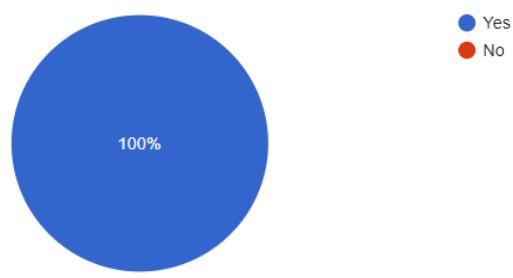


Figure 4.7: Pie Chart 14

The seventh requirement is that keeping track of the zakat history is easy. From this chart, all respondents from the survey said yes.

Payment page can be seen and can function.

31 responses

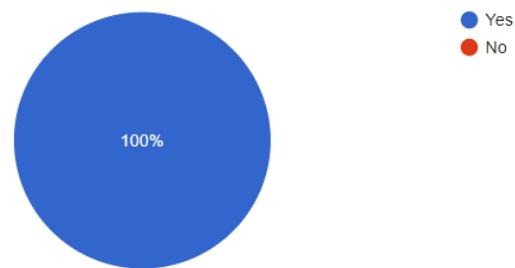


Figure 4.8: Pie Chart 15

The eighth requirement is that the payment page can be seen and can function. From this chart, all respondents from the survey said yes.

The security aspects of the system are functioning well.

31 responses

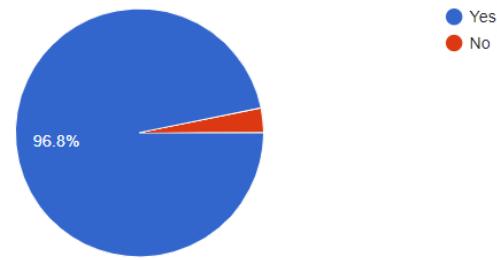


Figure 4.9: Pie Chart 16

The ninth requirement is that the payment page can be seen and can function. From this chart, one respondent said no while the rest said yes.

The overall design of the application suits the user's preference.
31 responses

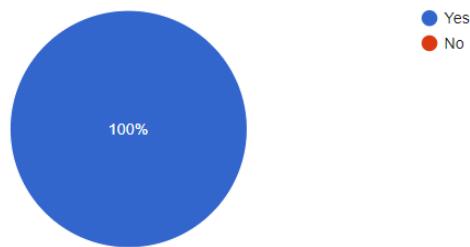


Figure 4.10: Pie Chart 17

The tenth requirement is that the overall design of the application suits the user's preference. From this chart, all the respondents said yes.

4.3 DISCUSSION

Based on the forms of testing undergone and analysed throughout this chapter, Zakat Calculator Application has proven to be functional in every aspect as proven by the unit testing phase. The unit testing phase has shown that the system is not easily prone to break, or malfunction and all the features of the system are working as intended.

As for the User Acceptance Testing which was intended to find out whether the user is satisfied with the final product, it is safe to say that based on the feedback received the application is properly functioning well and meets the user's requirements. As such, the system is proven to be ready for deployment in a live environment.

4.4 CONCLUSION

The analysis and results discussed in this chapter cover the forms of testing conducted on the Zakat Calculator Application including unit testing which was done by the developer of the system and the User Acceptance Testing, which was tested by the client. It was ultimately proven, based on the results of testing, analysis and discussion earlier that the application can function well as planned and can fulfil the initial user requirements of its user.

CHAPTER 5

CONCLUSION

5.1 INTRODUCTION

The final chapter covers a summary of this project. the thesis will finally be concluded including input for any future ideas or plans for Zakat Calculator Application. Chapter five will mainly discuss the matter of development constraints, recommendations, and future versions of the product.

5.2 CONSTRAINTS AND LIMITATIONS

It is not unusual for applications to have limitations and constraints, especially during their first release. Every application regardless of its platform requires comments and feedback over time to further improve its features. Zakat Calculator Application is not an exception, which is why the constraints and limitations of this mobile application system are to be discussed.

The first limitation of this application is the nisab feature implementation: The user must manually enter the nisab value and can refer to the table provided below the form. The manual method of obtaining nisab causes typo errors and takes time to do, the table used is a browser that is linked to a zakat website which means it requires the internet to display it. All of the constraints mentioned are due to the LiveCode development tool. For an automatic feature to

be implemented, the tool is too basic and does not support such a data-sharing method from the internet to the app, even if it does it is far too complex to code. Despite the limitations, the feature should still be present as an option through an automatic method that should be added as well.

The next limitation in the discussion is that the app cannot scroll except for widgets. As seen from the interface design in chapter 3, all the pages are stationary which means that there is no room for content to be added in a single page, the way to go around that issue is to extend to another page. This limitation is due to the nature of LiveCode, the tool does not allow the interface to scroll which is also why the nisab feature was implemented.

Next, there are only four types of zakat calculations present in the application so users who want to calculate the zakat for their land or their business cannot do so due to the limitation of the zakat calculations.

Another limitation that the application has is that is only available on android so users who want to calculate their zakat on their iPhone cannot use the app due to its unavailability.

5.3 FUTURE WORKS

Zakat Calculator Application already has plans for its future versions to further enhance the product. Some of the new functionalities brought to attention and will possibly make into the next versions are as follows.

1. User Interface

- As mentioned in the limitation, it is a goal to improve the user interface to make it easier, smoother, and more pleasant to use which include better fonts, smooth animations, elegant graphs and charts, etc. This would require a different development tool due to LiveCode interface limitations.

2. Automatic Nisab Retrieval

- This solves the limitations of manual retrieval as it reduces error typos, space, and time. The retrieval would either involve the internet for the current nisab or have a list of nisab be installed through updates. Both would take a lot of determination to implement the feature and would require a different development tool.

3. More zakat calculation types

- The Zakat Calculation Application should not be limited to only four types of zakat, the calculation should be expanded to livestock, land, business, etc.

4. Expand to IOS

- The application would be available for zakat payers who use iPhones. Doing so would also require a different development tool.

5. Zakat Reminder

- Zakat payers can be notified about their zakat calculations. LiveCode notification codes are too complicated to be implemented in the application, using a better mobile application development tool would be better to use.

5.4 CONCLUSION

In this era of technological advancement, the usage rate of zakat calculators among organisations are significantly evolving. It is uncommon for developers to also opt for one. The objective of this study is to provide a zakat application with an analysis graph in managing personal zakat information, to develop an application that can automatically calculate zakat, to improvise an application that records personal zakat information. The methodology used for developing this project is the waterfall model due to its flow as a system and its long term completion. Moreover, the waterfall model is simple and follows a specific flow which is why it is one of the most widely used methodologies. Following all six phases of the waterfall, the development was able to undergo smoothly, from the first phase of system engineering until the final but - going phase of maintenance. After the successful completion of the final product, the mobile application went through layers of testing to ensure the functionalities are working as intended including unit testing and user acceptance testing. The user acceptance testing was to check whether the features work as intended. Of course, this application is also not without its limitations and constraints in development. Limitations such as requiring internet access are bound to occur, as the nature of the application itself is a mobile application system that requires establishing a connection to the payment and tables. Constraints in development include the inability to support browsers, the risk of this application becoming deprecated over time, most of the limitations are due to the nature of the development tool used. However, these issues were already brought to attention and fixes are already planned in the next version release of the Zakat Calculator Application.

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APPENDIX

Appendix A: Questionnaire

Questionnaire 1: User Requirement

Section 1 of 3

Calculator Application

Dear respondents,

My name is Ahmad Naufal bin Tun Thamanian and I am a final year student of CC101 studying for a Diploma in Computer Science at Kolej Universiti Poly-Tech Mara (KUPTM), Cheras, Kuala Lumpur. I am currently conducting a survey. The purpose of this survey is to understand the user requirements for the mobile application that I am developing.

If you pay zakat, you would be my best candidate to be the respondent of this survey. I would be grateful if you could spend 10-15 minutes to complete the survey. There are no right or wrong answers and your responses to all the question should be entirely based on your own experience. Rest assured that all the information provided will be kept confidential. Completion of the survey will be taken as proof of consent to participate in this study.

If you need further clarification concerning the matter, please do not hesitate to contact me via my email address: tunnaufal@gmail.com

Your participation and support are very much appreciated. Thank you so much for your time.

Sincerely yours,
Ahmad Naufal

Age *

- 13 - 19
- 20 - 29
- 30 - 39
- 40 - 49
- 50 - 59
- Above 60

Section 2 of 3

Zakat User Preference

This section serves to identify problems faced by the community in managing zakat.
Answer all question below

I do not know how to calculate my zakat.

*

1 2 3 4 5

Strongly Disagree

Strongly Agree

I have issues with calculating my zakat.

*

1 2 3 4 5

Strongly Disagree

Strongly Agree

I manually record all my zakat annually.

*

1 2 3 4 5

Strongly Disagree

Strongly Agree

I always forget my zakat calculation information.

*

1 2 3 4 5

Strongly Disagree

Strongly Agree

I compile all my zakat calculations either physically or digitally.

*

1 2 3 4 5

Strongly Disagree

Strongly Agree

I manage my zakat through zakat application.

*

1 2 3 4 5

Strongly Disagree

Strongly Agree

Questionnaire 2: User Acceptance Testing

User App Testing Checklist

Dear respondents,

My name is Ahmad Naufal bin Tun Thamanian and I am a final year student of CC101 studying for a Diploma in Computer Science at Kolej Universiti Poly-Tech Mara (KUPTM), Cheras, Kuala Lumpur. I was assigned to conduct a user application testing related to zakat calculator application among people who pay zakat to complete my final year project. If you could spend 10-15 minutes to complete the survey, it would mean the world to me.

Before you fill in this google form, please install the application given or watch the Youtube video where it displays the Demo of the Zakat Calculation Application:

<https://youtu.be/BYntCLHYSxU>

After watching the video, give your honest opinion about the demo in the survey. There are no right or wrong answers and your responses to all the question should be entirely based on your own experience. Rest assured that all the information provided will be kept confidential. Completion of the survey will be taken as proof of consent to participate in this study.

Your participation and support are very much appreciated. Thank you so much for your time.

Sincerely yours,
Ahmad Naufal

Zakat calculation is made easier.

- Yes
- No

The zakat calculation result is accurate.

- Yes
- No

The nisab amount is easily accessible through the app.

- Yes
- No

The delete button works and the edited zakat calculation result is accurate .

- Yes
- No

The zakat calculations can be sorted and converted into a graph according to the selected zakat type.

- Yes
 No

The table data and line graph of the zakat calculations is accurate.

- Yes
 No

Keeping track of the zakat history is easy.

- Yes
 No

Payment page can be seen and can function.

- Yes
 No

The security aspects of the system are functioning well.

- Yes
 No

The overall design of the application suits the user's preference.

- Yes
 No

What are your opinions of the app? (Optional)

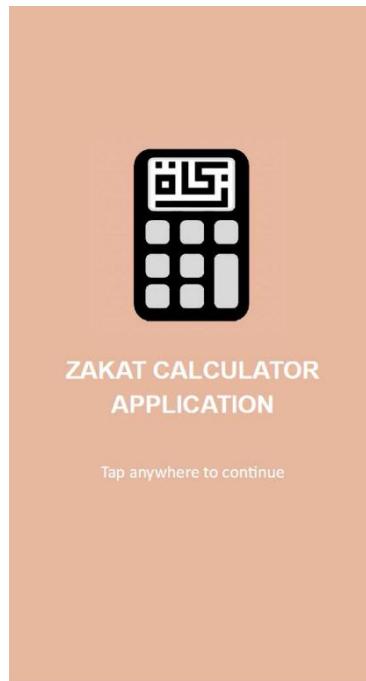
Long-answer text

What other features would you like to see in the app? (Optional)

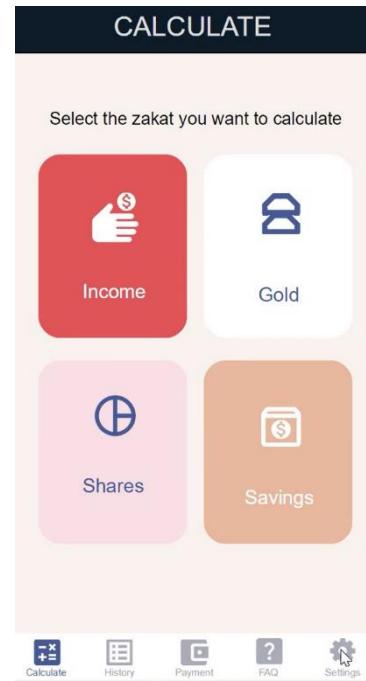
Short-answer text

Appendix B: User Manual

1. Homepage



Splash screen



Calculate Page

- In Figure 7.3, tap anywhere on the screen to be directed to the homepage.
- Tap the panel of the zakat calculation you want to select.

2. Calculate Income

Income Page (Empty)

This screenshot shows the 'Income' page of the app. At the top, there is a back arrow and the word 'Income'. Below that is a text input field labeled 'Enter the Nisab' with a plus sign icon. Underneath are three categories: 'Monthly Income' (input field), 'Annual Income' (input field), and 'Other Income' (input field). A 'Total Income' label with a value of '0' is shown. Below these is a 'Deduction' input field. At the bottom are two buttons: 'RESET' (pink) and 'OK' (green).

Nisab Page

This screenshot shows the 'Nisab' page. It has a back arrow, a date selector showing '2021', and a 'Nisab' input field containing 'RM 20299' with an 'OK' button next to it. Below this is the 'ARKIB NISAB TAHUNAN' logo. On the right, there is a small social media snippet with 'Like', 'Share', and '30 people like this. Sign Up to see what your friends are saying'.

- The App will direct you to the income page.
- Tap the arrow icon and enter the nisab and year.

Income Page (Filled)

This screenshot shows the 'Income' page with filled input fields. The 'Year' and 'Nisab' fields at the top now show '20299'. The 'Monthly Income' field contains '1500', 'Annual Income' contains '18000', and 'Other Income' contains '3000'. The 'Total Income' label shows '21000'. The 'Deduction' field contains '600'. The 'SAVE' button at the bottom is highlighted in yellow.

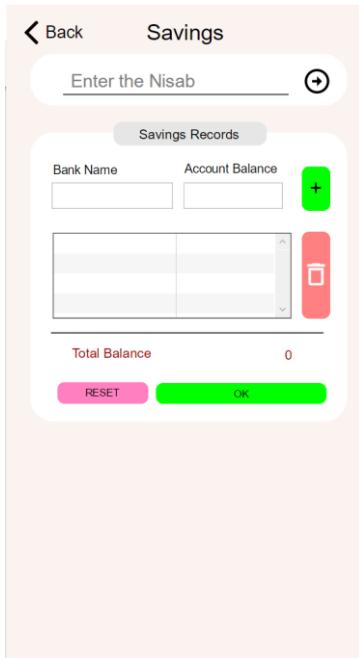
Zakat History (Income)

This screenshot shows the 'HISTORY' screen. It has a title 'HISTORY' and tabs for 'Table' and 'Graph'. Below is a table with columns 'Type', 'Date', and 'Zakat'. One row shows 'Income' for '2021' with a value of '510'. At the bottom are navigation icons for 'Calculate', 'History', 'Payment', 'FAQ', and 'Settings'.

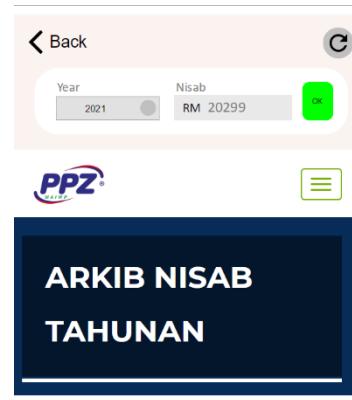
Type	Date	Zakat
Income	2021	510

- Enter user income details (monthly/annual income, other income, deduction) and tap ‘OK’, the app will calculate the eligibility and the zakat.
- Tap the save the zakat, the calculations will be recorded and saved to the zakat history.

3. Calculate Savings



Savings Page (Empty)

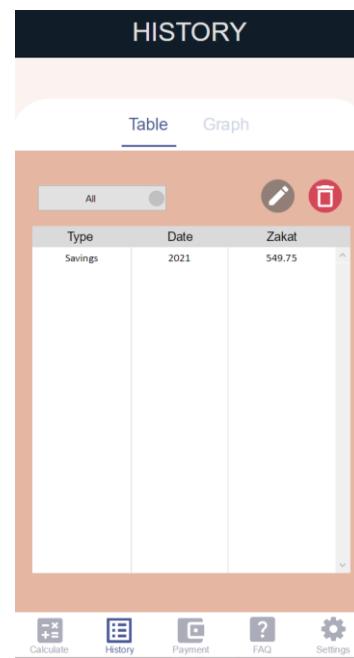
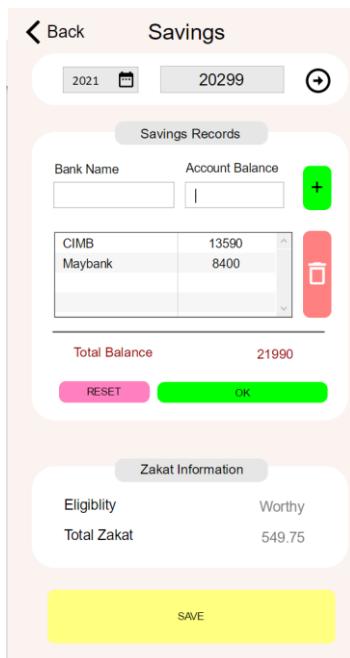


ARKIB NISAB EMAS

Tahun	Nisab	Emas	Hari	Emas
	(RM)			
2021	20,299.00			
2020	15,762.00			185.44

Nisab Page

- The App will direct you to the savings page.
- Tap the arrow icon and enter the nisab and year.

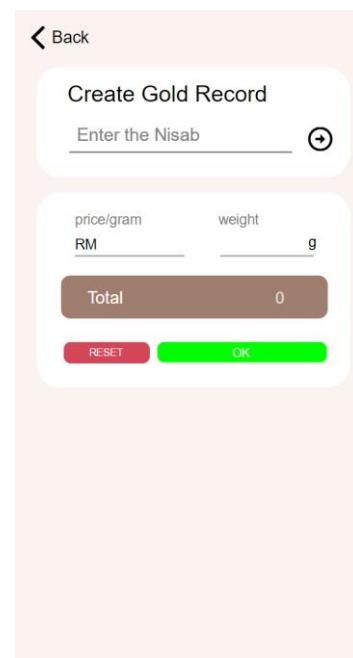
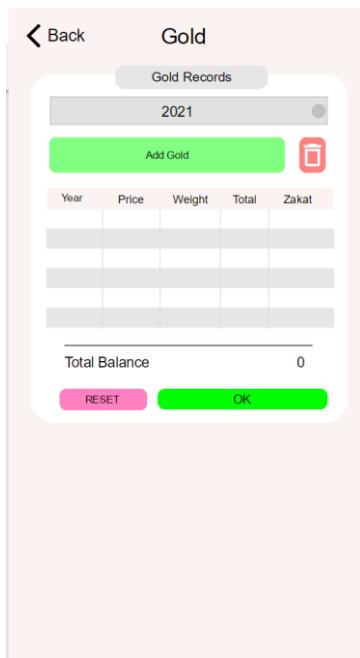


Savings Page (Filled)

Zakat History (Savings)

- Enter user savings details (bank name, account balance) and tap 'OK', the app will calculate the eligibility and the zakat.
- Tap the save the zakat, the calculations will be recorded and saved to the zakat history.

4. Calculate Gold



Gold Page (Empty)

Gold Record Page (Empty)

- The app will direct you to the gold page.
- The page is directed for adding gold record.



Nisab Gold Page

Gold Record Page (Empty)

- Tap the arrow icon and enter the nisab, price, and year.
- Enter user gold details (price and weight) and tap ‘OK’, the app will calculate the eligibility and the zakat.

Gold

Year	Price	Weight	Total	Zakat
2021	238.81	98	23403.38	585.08
2019	164.33	85	13968.05	349.2
<hr/>				
			Total Balance	37371.43
			RESET	OK

Zakat Information

Eligibility	Worthy
Total Zakat	934.28
SAVE	

HISTORY

Table Graph

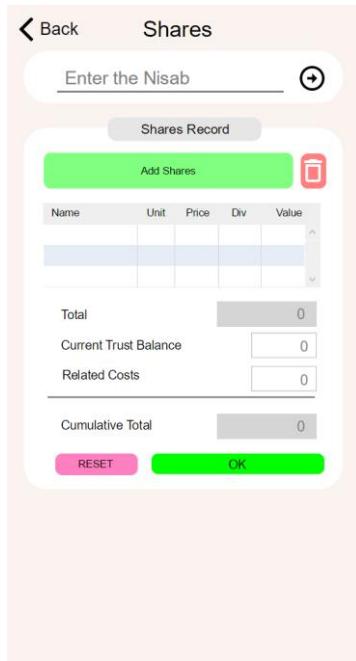
Type	Date	Zakat
Gold	2021	934.28

Gold Page (Filled)

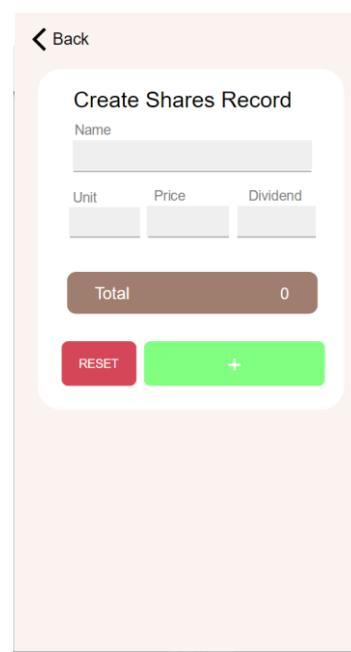
Zakat History (Gold)

- Tap the save the zakat, the calculations will be recorded and saved to the zakat history.

5. Calculate Shares



Shares Page (Empty)

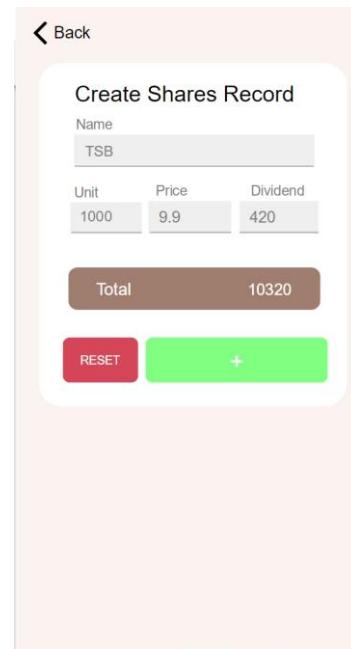


Shares Record Page (Empty)

- The app will direct you to the shares page.
- The page is directed for adding shares record.



Nisab Page



Shares Record Page (Filled)

- Tap the arrow icon and enter the nisab.
- Enter user shares details (name, unit, price, dividend) and tap ‘OK’, the app will calculate the value.

The screenshot shows the 'Shares' page with the following data:

Name	Unit	Price	Div	Value
TSB	1000	9.9	420	10320
Telecom Malaysia	2000	6.52	320	13960
Total				23680
Current Trust Balance				3000
Related Costs				2000
Cumulative Total				24680

Buttons: RESET, OK, SAVE

Shares Page (Filled)

The screenshot shows the 'HISTORY' page with the following data:

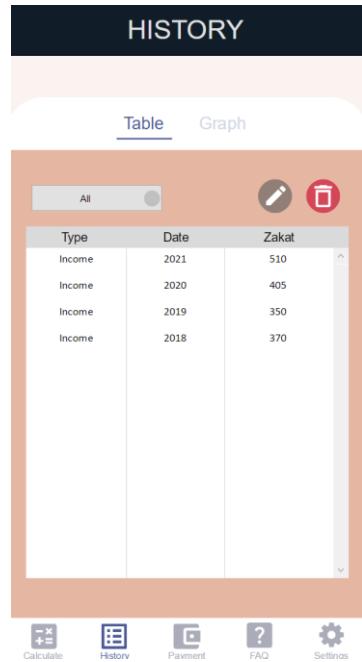
Type	Date	Zakat
Shares	2021	617

Buttons: Calculate, History, Payment, FAQ, Settings

Zakat History (Shares)

- Enter user shares details (cost and trust balance) and tap ‘OK’, the app will calculate the eligibility and the zakat.
- Tap the save the zakat, the calculations will be recorded and saved to the zakat history.

6. Zakat History (Delete)

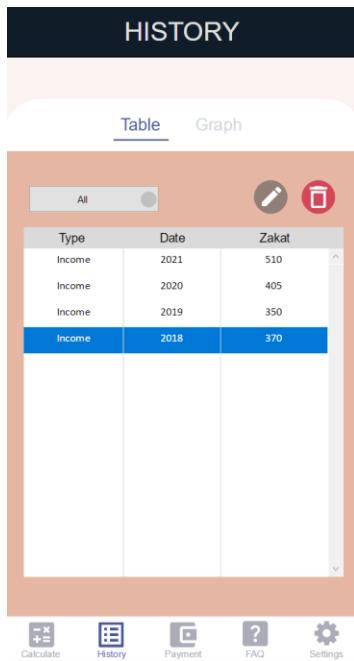


Zakat History Page (Table)

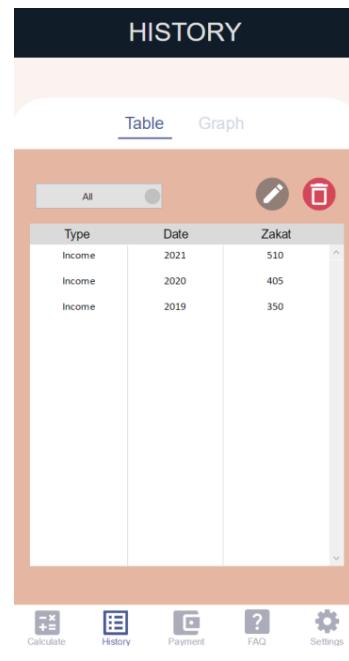


Zakat History Page (Graph)

- This is an example of what the history page will look like with its content for both the table and the graph



History Page (Highlight)



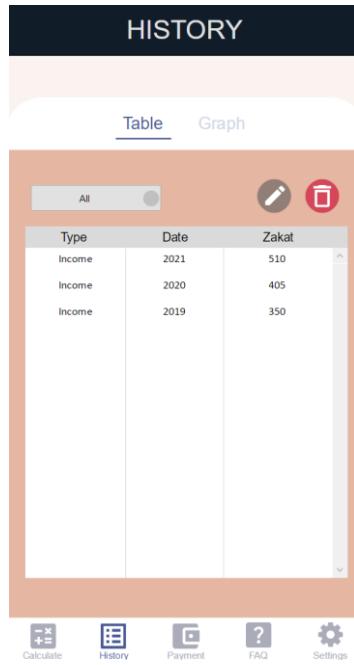
History Page (Deleted)



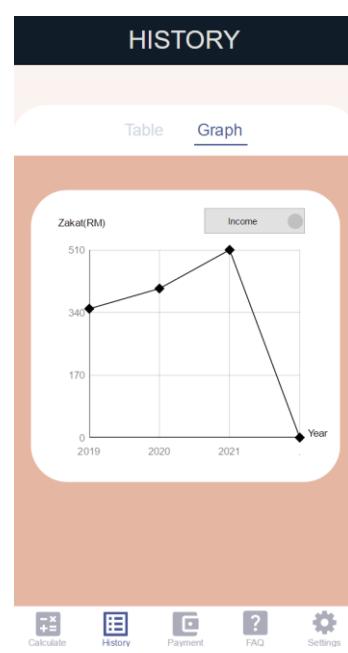
History Page (Graph)

- To delete, tap the record you want to delete and the record will be highlighted. Then tap the trashcan icon. The record will be deleted. The graph will be converted to represent the updated table.

7. Zakat History (Edit)

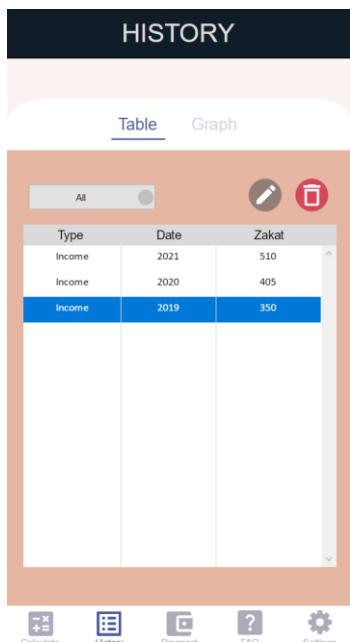


Zakat History Page (Table)

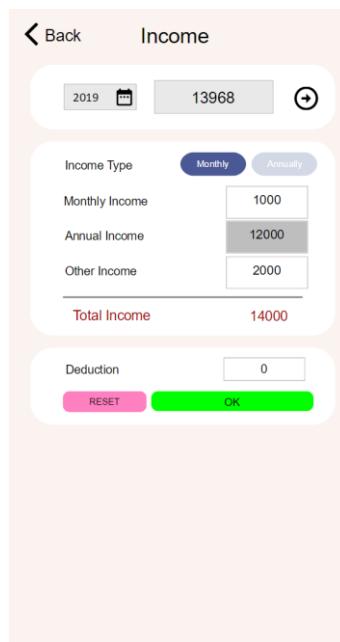


Zakat History Page (Graph)

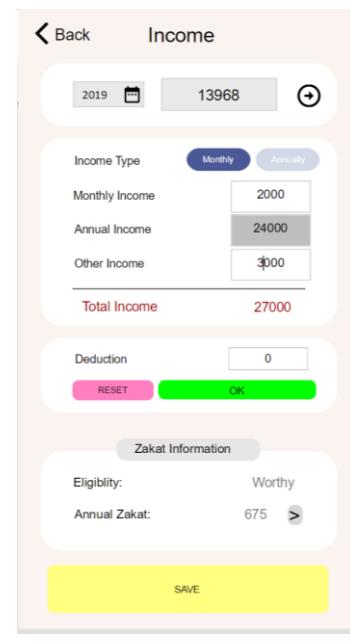
- This is an example of what the history page will look like with its content for both the table and the graph



History Page (Highlight)

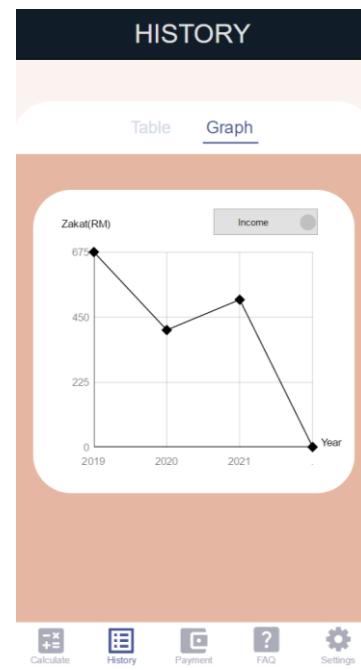
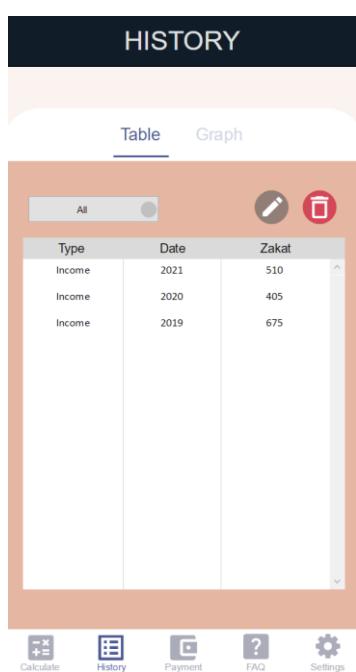


History Page (Edit)



History Page (Edited)

- To edit, tap the record you want to edit and the record will be highlighted. Then tap the pencil icon. You will be directed to the income page where the contents of the saved calculations are present. You can recalculate your zakat and tap the save button.



Zakat History Page (Table)

Zakat History Page (Graph)

- The record will be edited. The graph will be converted to represent the updated table.

8. FAQ



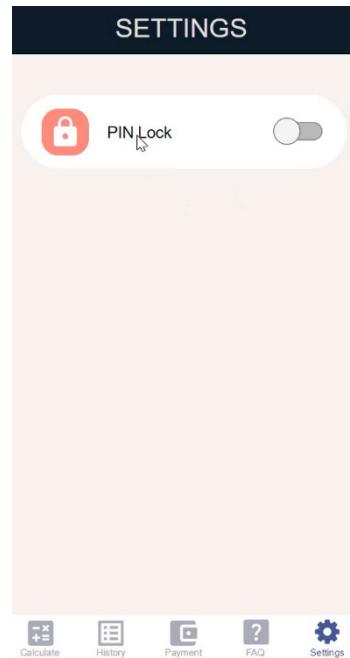
FAQ Page

This image shows a detailed answer to a question from the FAQ page. At the top left is a back arrow labeled "Back" and at the top right is the word "FAQ". The main content area has a light pink background. It contains a question in a blue-bordered box: "My wealth decreased below the nisab for a few months during the year. Do I still pay zakat?". Below the question is a larger text block in black: "As long as you are in possession of wealth above the nisab threshold at the beginning and end of the zakat year, then zakat will be due, even if your wealth dipped below the nisab for some or most of the year." A vertical scroll bar is visible on the right side of the content area.

Answer Page

- For the FAQ page, tap the arrow icon to see the answer for the question connected to it. You will be directed to the answer page.

9. Settings



Settings Page

- For the settings page, tap the switch button to set the PIN. You will be directed to the PIN set page.

ENTER YOUR NEW PIN

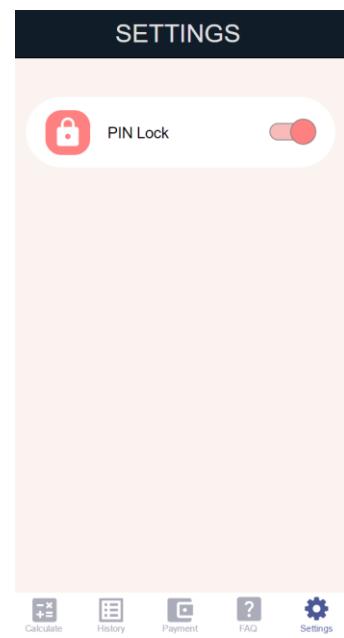
○ ○ ○ ○

1 2 3
4 5 6
7 8 9
Cancel 0 Delete

CONFIRM YOUR PIN

○ ○ ○ ○

1 2 3
4 5 6
7 8 9
Cancel 0 Delete

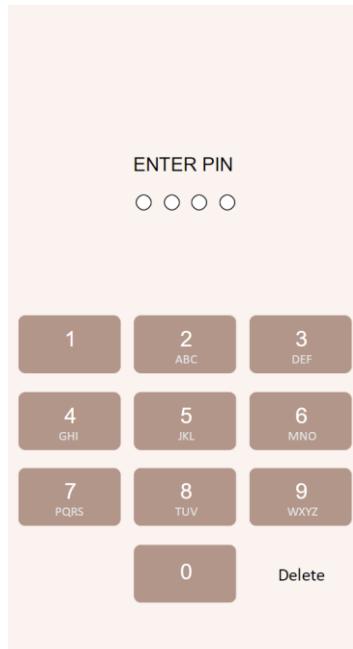


PIN Set Page

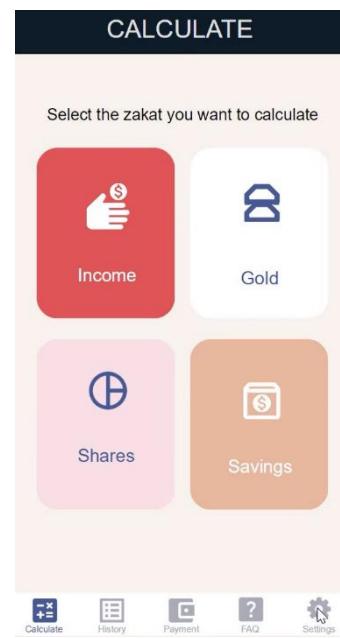
PIN Set Page (Confirm)

Settings Page (PIN set)

- Enter your new pin, once it has been entered, the app will instruct you to enter the same PIN again to confirm the PIN. Once done, the switch button will be highlighted to represent that the PIN is activated.



FAQ Page



Answer Page

- If you open the app, the app will display the splash screen, it will then direct you to enter the PIN. It will not let you enter if you enter the wrong PIN. If the PIN is correct, the homepage will be displayed.

10. Payment

The screenshot shows a mobile application interface for calculating Zakat. At the top, there's a logo for 'ZAKAT SELANGOR' and a 'CALCULATE' button. Below it, a step indicator '4. Resit Bayaran Zakat' is shown with a right-pointing arrow. The main section is titled 'Masukkan Maklumat Pembayaran' (Enter Payment Information). It contains three input fields: 'Nama Penuh' (Full Name), 'Jenis Pengenalan' (Identification Type), and 'Nombor Pengenalan' (Identification Number). Each field has a note below it: 'Nama penuh pengeluar zakat (seperti Kad Pengenalan)' for the name field, 'Pilih Jenis Pengenalan Anda' for the identification type, and 'Contoh Mykad: 700223109999 atau Passport: A17041223 atau No Syarikat: 122605048U' for the identification number. At the bottom of the form are five icons: 'Calculate' (calculator), 'History' (list), 'Payment' (credit card), 'FAQ' (question mark), and 'Settings' (gear).

Payment Page

- For the payment, you will be directed to a browser that displays the website for letting you pay your zakat online.

Appendix C: Turnitin Result

FYP Zakat Calculator App

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Appendix D: Progress Report

**KOLEJ UNIVERSITI POLY-TECH MARA KUALA LUMPUR
PROJECT
TSE3214**

Project Title : Zakat Calculator Application
Student Name : Ahmad Naufal bin Tun Thamanian
Matrix Number: AM1901005157
Supervisor : Anis Juanita Binti Mohd Zainudin

Progress Report 01

During the last two weeks, on the 7th of December, I have started on the proposal writing of the application and the foundation of the interface, here are the things that I have done so far:

1. Prepared the materials for app development and report
2. Written a draft of the proposal
3. Sent the draft to the supervisor for reviewing and improvement
4. Updated the written proposal based on feedback

Above are the tasks I have managed to complete so far. For the next following weeks, I have planned to prepare the written report for Chapter 2 which contains the literature review of the app and the study case

Prepared by,



(Ahmad Naufal bin Tun Thamanian)
AM1901005157
(16/02/2021)

Checked by,



(Anis Juanita Binti Zainudin)
Project Supervisor
(06/03/2021)

KOLEJ UNIVERSITI POLY-TECH MARA KUALA LUMPUR
PROJECT
TSE3214

Project Title : Zakat Calculator Application
Student Name : Ahmad Naufal bin Tun Thamanian
Matrix Number: AM1901005157
Supervisor : Anis Juanita Binti Mohd Zainudin

Progress Report 02

For the next two weeks after the first progress report, on the 29th of December, I have commenced the written report on chapter two of the project, here are the things that I have done so far:

1. Identified and prepared the apps for study case review
2. Provided sketches and designs for the proposed app
3. Written a draft for chapter 2 of the written report
3. Sent the draft to the supervisor for reviewing and improvement
4. Updated the written proposal based on feedback
5. Developing the input section of the mobile application

Above are the tasks I have managed to complete so far. For the next following weeks, I have planned to develop the database section for storage of the data and the editing features of the database as well as progress to chapter 3 on the written review

Prepared by,



(Ahmad Naufal bin Tun Thamanian)
AM1901005157
(16/02/2021)

Checked by,



(Anis Juanita Binti Zainudin)
Project Supervisor
(6/03/2021)

KOLEJ UNIVERSITI POLY-TECH MARA KUALA LUMPUR**PROJECT****TSE3214**

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Progress Report 03

For the next two weeks after the first progress report, on the 8th of February, I have commenced the written report on chapter three of the project, here are the things that I have done so far:

1. Presented the application software to the supervisor
2. Developing the security of the application (the pin lock)
3. Provided sketches and designs for the diagrams of chapter 3
4. Written a small draft for chapter 3 of the written report

Above are the tasks I have managed to complete so far. For the next following weeks, I have planned to set up the application for publishing, creating a survey for the app testing, expanding the report for chapter 4 and chapter 5, creating slides and scripts for the upcoming presentation for week 14

Prepared by,



(Ahmad Naufal bin Tun Thamanian)
AM1901005157
(16/02/2021)

Checked by,



(Anis Juanita Binti Mohd Zainudin)
Project Supervisor
(06/03/2021)



FACULTY OF COMPUTING & MULTIMEDIA (FCOM)

COMPUTING PROJECT
(TSE3214 / FYP3014)

LOG BOOK

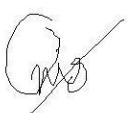
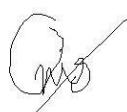
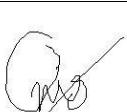
STUDENT'S NAME : AHMAD NAUFAL BIN TUN THAMANIAN

ID NO. : AM1901005157

SUPERVISOR : ANIS JUANITA BT MOHD ZAINUDIN

PROJECT TITLE : ZAKAT CALCULATOR APPLICATION

Week	Date	Agenda	Next Agenda	Signature (Supervisor / Coordinator)
23/11/2020 – 27/11/2020	1 Date: 24/11/2020	Preview Seminar - Brainstorming, Introduction to the course and Title selection	Propsal Draft Project Registration Form	
30/11/2020 – 4/12/2020	2 Date: 4/12/2020	Proposal Draft – Introducuon, Problem Statement, Objectives, Scope, Timeline Project Registration Form – Summary of the project idea	Proposal Writing	
7/12/2020 – 11/12/2020	3 Date: 11/12/2020	Proposal Writing – Rewriting proposal based on draft	Interface Blueprinting	
14/12/2020 – 18/12/2020	4 Date: 16/12/2020	Interface Blueprinting – Designing the foundation interface of the application	Interface Blueprinting Project Report Chapter 1	
21/12/2020 – 25/12/2020	5 Date: 25/12/2020	Project Report Chapter 1 –Writing Chapter 1 based on proposal Interface Blueprinting – Improving the feature design and interface of the application	Project Report Chapter 2	
28/12/2020 – 1/1/2021	6 Date: 29/12/2020	Project Report Chapter 2 -Finding Study Cases, Gathering Information	Project App Development Project Report Chapter 2	
4/1/2021 – 8/1/2021	7 Date: 8/12/2021	Project App Development – Developing the input section of the application (Calculation) Project Report Chapter 2	Project App Development Project Report Chapter 2 Project Report Chapter 3	

			<ul style="list-style-type: none"> – Reporting UX Principles, Describing Study Cases, Creating comparison between study case, 		
9/1/2021 – 17/1/2021	Mid Term Break				
18/1/2021 – 22/1/2021	8	Date: 22/1/2021	<ul style="list-style-type: none"> Project Report Chapter 2 <ul style="list-style-type: none"> – Refining chapter Project Report Chapter 3 <ul style="list-style-type: none"> – Creating diagrams of the application (ERD, Use Case, Flowchart) Project App Development <ul style="list-style-type: none"> – Developing the input section of the application 	Project App Development	
25/1/2021 – 29/1/2021	9	Date: 29/1/2021	<ul style="list-style-type: none"> Project App Development <ul style="list-style-type: none"> – Developing the Database Section of the application 	Project App Development	
1/2/2021 – 5/2/2021	10	Date: 2/2/2021	<ul style="list-style-type: none"> Project App Development <ul style="list-style-type: none"> – Developing the Editing Section of the application 	Project App Development	
8/2/2021 – 12/2/2021	11	Date: 12/2/2021	<ul style="list-style-type: none"> Project App Development <ul style="list-style-type: none"> – Developing the Editing and the Security Section of the application 	Project App Development	
15/2/2021 – 19/2/2021	12	Date: 12/2/2021	<ul style="list-style-type: none"> Project App Development <ul style="list-style-type: none"> – Polishing the application and preparing for testing 	<ul style="list-style-type: none"> Testing Presentation Slides 	
22/2/2021 – 26/2/2021	13	Date: 12/2/2021	<ul style="list-style-type: none"> Testing – Gathering respondent forms for the test Presentation Slides – Preparing slides for the final presentation 	<ul style="list-style-type: none"> Project Report Chapter 4 Project Report Chapter 5 	

1/3/2021 – 7/3/2021	14	Date: 6/3/2021	Project Report Chapter 4 – Finishing up the test results Project Report Chapter 5 – Finishing up Submission of Final Report	Submission of hardbound report to coordinator	
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