

Faculty of Computer Science and Information Technology

# WEB-BASED LOST ITEM COMPLAINT SYSTEM WITH CHATBOT FOR DAHLIA RESIDENTIAL COLLEGE

Muhammad Ashraff bin Aman

Bachelor of Computer Science with Honours (Network Computing)

2023

# WEB-BASED LOST ITEM COMPLAINT SYSTEM WITH CHATBOT FOR DAHLIA RESIDENTIAL COLLEGE

#### MUHAMMAD ASHRAFF BIN AMAN

This project is submitted in partial fulfillment of the requirements for the degree of Bachelor of Computer Science with Honours (Network Computing)

> Faculty of Computer Science and Information Technology UNIVERSITI MALAYSIA SARAWAK

> > 2023

# SISTEM ADUAN BARANG HILANG BERASASKAN WEB DENGAN CHATBOT UNTUK KOLEJ KEDIAMAN DAHLIA

#### MUHAMMAD ASHRAFF BIN AMAN

Projek ini merupakan satu keperluan untuk

Ijazah Sarjana Muda Sains Komputer dengan Kepujian (Pengkomputeran Rangkaian)

Fakulti Sains Komputer dan Teknologi Maklumat UNIVERSITI MALAYSIA SARAWAK 2023

## UNIVERSITI MALAYSIA SARAWAK

	THES	SIS STATUS ENDO	RSEMENT FORM						
TITLE	. WEB-BA	WEB-BASED LOST ITEM COMPLAINT SYSTEM WITH CHATBOT							
		FOR DAHLIA RESIDENTIAL COLLEGE							
	ACAD	DEMIC SESSION: _	2022/2023						
		MUHAMMAD ASHRA	AFF BIN AMAN						
		(CAPITAL LET	TERS)						
		hall be kept at the Centre following terms and cond	e for Academic Information Services, Universi itions:						
2.		ned by Universiti Malaysia c Information Services is §	a Sarawak given full rights to produce copies for educationa						
3.	·		s given full rights to do digitization in order t						
		item program between Hig	given full rights to produce copies of this Thesi gher Learning Institutions [ or for the purpose of						
	CONFIDENTIAL	(Contains classified info ACT 1972)	rmation bounded by the OFFICIAL SECRET						
	RESTRICTED	(Contains restricted info where the research was	ormation as dictated by the body or organizatio conducted)						
$\checkmark$	UNRESTRICTED								
	2 A		Validated by						
(AUTH	OR'S SIGNATURE	E)	(SUPERVISOR'S SIGNATURE)						
Perman	ent Address								
No 16	s, Jalan Putra Bahag	ia 8/4D							
Putra	Heights								
T GUIG	Subang Jaya Selan	igor							
-									

\*\* Inests refers to PhD, Master, and Bachelor Degree
 \*\* For Confidential or Restricted materials, please attach relevant documents from relevant organizations / authorities

#### Declaration of originality

I hereby declare that this research together with all of its content is none other than that of my own work, with consideration of the exception of research based information and relative materials that were adapted and extracted from other resources, which have evidently been quoted or stated respectively.

Signed,

2A

.....

MUHAMMAD ASHRAFF BIN AMAN

Faculty of Computer Science and Information Technology 14/01/2022 Universiti Malaysia Sarawak.

#### ACKNOWLEDGEMENT

In the compilation of this Final Year Project (FYP) report, I have incurred debts of gratitude to many individuals, and I would like to address this appreciation to them. A lot of new things learned throughout the process of completion of this study were made.

First of all, a special thank you to my FYP's supervisor, Madam Azlina bt Ahmad Julaihi, for her guidance and encouraging suggestion along with the moral support while writing this project report. Thank you for your time, patience and advice to make sure this report is complete very well.

Next, I would like to give my greatest appreciation to my Final Year Project examiner, Dr. Tan Ping Ping in giving useful tips and guidelines in completing my Final Year Project.

Lastly, I would like to express my gratitude to my parents, siblings, and everyone that involved to encourage and prayed for my project successes.

#### ABSTRACT

The purpose of the project is to develop a web system called Web-Based Lost Item Complaint System with Chatbot that helps Dahlia Residential College to manage their complaints on lost item and give a more centralized platform to do complaints. Furthermore, the literature review on existing application is carried out to study the features, depiction and functionality implemented in the applications. An interview will be conducted to gather more information regarding the clients desired outcome of the project. Afterwards, the requirements are analyzed depicted into flowcharts, data flow diagram and entity relationship diagram. Moreover, Agile methodology is selected to ensure that the project is meticulously finish and evaluated by users. Furthermore, the implementation showcases the application use to design the system prototype along with the features and functionality. Implementations done are based on the data flow diagram and wireframes. The testing phase is where the functional testing that uses test cases and non-functional testing where the system is analysed through different factors such as performance, security and usability. Overall, the web-based prototype has its own achievements with a few limitations and constraints. The system is further discussed of its potential future deployment. The system aspires to bring benefits to Dahlia Residential College in providing a convenient system that can be accessed online to place their lost item complaints so that it can be address to the management swiftly.

#### ABSTRAK

Tujuan projek ini adalah untuk membangunkan sistem web yang dipanggil Sistem Aduan Barang Hilang Berasaskan Web dengan Chatbot yang membantu Kolej Kediaman Dahlia menguruskan aduan mereka mengenai kehilangan barang serta memberi satu sistem khusus untuk membuat aduan. Selain itu, kajian kesusasteraan terhadap aplikasi sedia ada dijalankan untuk mengkaji ciri, gambaran dan fungsi yang dilaksanakan dalam aplikasi. Temu bual akan dibuat untuk mengumpul lebih banyak maklumat mengenai hasil projek yang dikehendaki pelanggan. Selepas itu, keperluan analisis yang digambarkan dalam carta alir, rajah hubungan entiti dan rajah aliran data. Tambahan pula, metodologi Agile dipilih untuk memastikan projek disiapkan dengan teliti dan dinilai oleh pengguna. Seterusnya, pembinaan sistem dapat dibuat melalui penggunaan aplikasi untuk merancang prototaip sistem bersama dengan ciri-ciri dan fungsi. Prototaip juga akan berdasarkan gambaran aliran data (data flow diagram) dan kerangka wayar (wireframes). Fasa pengujian merupakan fasa di mana pengujian berfungsi yang menggunakan kes-kes ujian dan pengujian bukan berfungsi di mana sistem dianalisis melalui faktor-faktor yang berbeza seperti prestasi, keselamatan, dan kebolehgunaan. Prototaip berasaskan web ini mempunyai pencapaian tersendiri dengan beberapa kekangan dan batasan. Sistem ini juga terus dibincangkan mengenai potensi sistem ini untuk jangka masa panjang. Sistem ini mampu memberikan manfaat kepada Kolej Dahlia dengan menyediakan sistem yang mudah digunakan dan boleh diakses dalam talian untuk mengemukakan aduan barang hilang supaya dapat segera ditangani oleh pihak pengurusan.

# TABLE OF CONTENTS

Declaration of originality	I
ACKNOWLEDGEMENT	II
ABSTRACT	
ABSTRAK	IV
TABLE OF CONTENTS	V
TABLE OF FIGURES	VIII
LIST OF TABLES	X
CHAPTER 1: INTRODUCTION	
1.1 Introduction	
1.2 Problem Statement	
1.3 Objectives	
1.4 Methodology	14
1.5 Scope	14
1.6 Significance of project	15
1.7 Project schedule	15
1.8 Project Outcome	15
1.9 Chapter Summary	15
CHAPTER 2: LITERATURE REVIEW	
2.1 Introduction	
2.2 Overview on Similar Systems	
2.2.1 RMP e-Reporting System	
2.2.2 UTAR Lost and Found Management System	
2.2.3 RepoApp	
2.3 Comparison of Current System	20
2.4 Summary	20
CHAPTER 3: REQUIREMENT ANALYSIS AND DESIGN	21
3.1 Introduction	21
3.2 Methodology	22
3.3 Application of chosen methodology	23
3.4 Requirement analysis	23
3.4.1 Functional Requirements	24
3.4.2 Non-Functional Requirements	24
3.4.3 Software Requirements	24
3.5. System Design	26
3.5.1 Flowchart	27

3.5.2 Data Flow Diagram	27
3.5.2.1 Context Level Diagram	28
3.5.2.2 Data Flow Diagram (DFD) Level 0	28
3.5.2.3 Data Flow Diagram (DFD) Level 1	29
3.5.3 Entity Relationship Diagram (ERD)	
3.5.4 Data Dictionary	32
3.5.5 Wireframes	
3.5.5.1 Login	
3.5.5.2 Main Page	
3.5.5.3 Complaint Form	35
3.5.5.4 Form Entries	
3.6 Conclusion	
CHAPTER 4: IMPLEMENTATION	
4.1 Introduction	
4.2 Installation and Configuration of system's component	
4.2.1 Laragon	37
4.2.2 HeidiSQL	
4.2.3 Visual Studio Code	
4.3 System Functions	
4.3.1 Registration	
4.3.2 Login	41
4.3.3 Manage personal account	42
4.3.4 Complaints	43
4.3.5 Lists	44
4.3.6 Chatbot	46
CHAPTER 5: TESTING	47
5.1 Introduction	47
5.2 Functional testing	47
5.2.1 Test Cases	48
5.3 Non-functional Testing	56
5.3.1 Performance Testing	56
5.3.2 Security Testing	56
5.3.3 Usability Testing	57
5.4 Summary	61
CHAPTER 6: CONCLUSION AND FUTURE WORK	62
6.1 Introduction	62

	6.2 Achievements	.63
	6.3 Limitations and Constraints	.64
	6.4 Future works	.64
	6.5 Summary	65
Re	ferences	.66
Ар	pendices	.68

## **TABLE OF FIGURES**

Figure 1.1 Accident & Innocent Report Form	12
Figure 1.2 Customer Complaint Form	12
Figure 2.1 RMP e-Reporting System	17
Figure 2.2 Lost Report Form	18
Figure 2.3 Item Found Section	18
Figure 2.4 Search Feature	19
Figure 2.5 Lost Item List	19
Figure 3.1 Agile Methodology	21
Figure 3.2 Kanban	22
Figure 3.3 Web-Based Lost Item Complaint System Flowchart	27
Figure 3.4 Context Level Diagram	
Figure 3.5 DFD Level 0	
Figure 3.6 DFD Level 1 (User Registration)	29
Figure 3.7 DFD Level 1 (User Login)	29
Figure 3.8 DFD Level 2 (Create/Edit/Update Complaint Form)	
Figure 3.9 DFD Level 2 (Generate Report)	
Figure 3.10 Entity Relationship Diagram	31
Figure 3.11 Login page	33
Figure 3.12 Main Page	34
Figure 3.13 Complaint Form	35
Figure 3.14 Form Entries	
Figure 4.1 Laragon	37
Figure 4.2 HeidiSQL	
Figure 4.3 VS Code	
Figure 4.4 Screenshot of the Registration page	40
Figure 4.5 Screenshot of Mailtrap (Email Delivery Platform)	40
Figure 4.6 Screenshot of Login page	41
Figure 4.7 Screenshot of User details	42
Figure 4.8 Screenshot of Login details	42
Figure 4.9 Screenshot of Complaints form page	43
Figure 4.10 Screenshot of User complaint list page	44
Figure 4.11 Screenshot of Admin complaint list page	44
Figure 4.12 Screenshot of Admin complaint edit page	45

Figure 4.13 Screenshot of PDF form view	45
Figure 4.14 Screenshot of chatbot widget at the bottom right corner	46
Figure 4.15 Screenshot of chatbot user interface	46
Figure 5.1 Dahlia Residential Block	57
Figure 5.2 Efficiency and straightforward	58
Figure 5.3 Input	58
Figure 5.4 Usability	59
Figure 5.5 Visual	59
Figure 5.6 User-friendly	60
Figure 5.7 Chatbot	60
Figure 5.8 Recommendation	61

## LIST OF TABLES

Table 1: Comparison of features between systems	
Table 2: Software Requirements	25
Table 3: Programming Language	
Table 4: Data Dictionary	
Table 5: Test Functions	
Table 6: Test case for Registration	49
Table 7: Test case for Login	
Table 8: Test case for Complaint Form Submission	51
Table 9: Test case for List	
Table 10: Test case for Chatbot	53
Table 11: Test case for Manage personal account	54
Table 12: Test case for Admin List	55
Table 13: List of Objectives and Achievements	63

#### **CHAPTER 1: INTRODUCTION**

#### **1.1 Introduction**

Web-based applications used to lack in functionality. Even so, with the advance of technology, internet and reliability have improved the potential purpose of web-based systems. Nowadays, everything that used to be physically written with paper now can be made on the web with just a click of a link. Universities and school are some places that often use web-based system to manage registrations, students' personal information and study progress.

For students who want to stay in campus, they get to register with their chosen residential colleges by going through respective web-based systems. This minimizes the registration process in the management office without students going through long queues just to fill in forms. Furthermore, it can be done anywhere, and the information can be reached to the residential management office instantly.

For this system, it handles complaints on lost items by Dahlia residents. The system also equipped with a chatbot that can respond to any crucial inquiries at any time. Currently, Dahlia Residential College has its own ways in dealing the matter. According to the Dahlia office staff, students can file a lost item complaint at the Dahlia Office by filling up two forms which is the Customer Complaint Form and the Accident/Incident Report Form. The forms will be hand in to the Dahlia management for further investigation. The forms must be filled up on the spot and are not allowed to be brought outside the office.

The aim is to introduce a new procedure not just for the office staff but for college residents to fully utilize a platform that is reliable and user-friendly.

UNIMAS	UNIMAS HOLDINGS SON	BHD. store to	Document No.	UPL-PM-FAM-De		
HOLDINGS	ACCIDENT & INCIDENT	Resident No.         1         00           VENT REPORT FORM         Effective Date         1         00.00.3030           Page         1         14*3				
Full Name (in BLOCK	MICRONS - N	PORIDPLODAL				
AND Passent An. Middle Norther		Maint Said Nordae ( 8 mail Ademont) Protoce Nordae (				
College   Histel   Poer	Netter:					
Date of Acceleringfredu		Time are / p				
Was anyone injured? Please state who and	what type of injury. If the injury required	Wat there any iteratly Please state what have	virg troken or mean st/ming was broken.	ngi 🗌 Yan 🛄 tao Ini minisi Ng		
heapitalization, 68 in 5	40a+1.					
Magie provide a chair o	benalizatieformations) about the aucidem	Incident and attach veh	even supporting th	numarity, if any		
	SCOOL MANDAM		PRICABLE			
Taxes of Physics / Am	pital 1	Time Admitted	an/pm	n Ward Na		
Traine of Physican / Alay Physican / Houghtal Addr	pital 1	Time Admitted	MARKANA Bevigen tal Context Name			
	pital 1	Time Admitted	an/pm			
	944	Time Admitted Physician / Hospi - VERPICATION	an/pm			
	944	Time Admitted Physician / Hospi	an/pm			
Physician / Hospital Addr	944	Time Admitted Physician / Hospi - VERPICATION	an/pm			
Physician / Hospital Adde	944	Time Admitted Physician / Hospi - VERPICATION	an/pm			
Physician / Hospital Addr	944	Time Admitted Physician / Heispi - VEDERCATION Received by	an/pm			

Figure 1.1 Accident & Innocent Report Form

1.0	UNIMAS HOLDINGS SDN. BHD. (1994)	C) Decament No.	1 UH-PM-FAM-DA
HOLDING	S CUSTOMER COMPLAINT FORM		: 01,G9,2050
	VECTION ( - COMPLAIN SETAL(S)   TO BE FILLER		IT LOAN
Fold Reasons (In Maria) Planeter SCR Million	epplicable	Please Specifics	
Linear Linear Street Linear St	Manio No Rulating ( Brock No. ) Apartment No.   Shall No.1	Standbilling) -	
Type of Damagent		Terror C	W6-8
Peans describe the	Plunding/Sink  Watte Water	Converse Peace Specify	
Complainant :			
Companier	Received by 1	UNIMAS Hordings Represe	ntatives :
Name			
Shie :	Dete		
	MICHON 2 - COMPLAINT WALLDATION ( TO B	nber 1601 CCF/ 2210	7-541
Complaint Validation (	Detail Investigation(a) ( Finding(a) ( Proposed (actification(a	EPILLAV (PHIL)	
Date :	Time :		
Date :		By :	
	Time : Electroni I - Acronik BLANI ( AREN ( 10 BC ( Third party Contractor :		
	SECTION 1 - ACTION PLANUTANEN LTD RE		
	HETION I - ACTION PLAN: TAKEN [10 In: ] Dead party Contractor :	FILL BY LIHEB (	-
Connective plan by Urica	SECTION 3 - ACTION BLAN: TAKEN ( TO BE ) Third party Contractor : Time :	FLL OV UHID Y	
Connective plan by Urica	HICTION I - ACTION IP.AN. TAKIN   TO BE   Tweed pany Contractor :     Twee :     SECTION - SUDDE INSTRUCTION - 100000	FLL OV UHID Y	
Corrective plan by UrGa	HICTION I - ACTION IP.AN. TAKIN   TO BE   Tweed pany Contractor :     Twee :     SECTION - SUDDE INSTRUCTION - 100000	FLL OV UHID Y	
Connective plan by UI453 Date Work inspection   Re-impe	HICTION I - ACTION RAAV TANKIN (10) RF   Third party Contractor ; Time ; STCTOM- = NOTE AUTOCITION (10) BL ( Result) ( ) Server ;	FLL OV UHID Y	_
Corrective plan by UrGa	HICTION I - ACTION IP.AN. TAKIN   TO BE   Tweed pany Contractor :     Twee :     SECTION - SUDDE INSTRUCTION - 100000	FLL OV UHID Y	
Connective plan by UHC3 Date : Work implection   Re-imple	HECTOR A - ACTOR RAM: TAKIN (10 M Their perty Contractor ; Their : FECTOR - work Rediction ( 10 m) Con ( Rework) ( Senue ; Time ; Time ;	PAC (V CHOB) By : ALL IIV CHOB ) By :	
Connective plan by UI453 Date Work inspection   Re-impe	HICTION I - ACTION RAAV TAKEN   TO BE   Third party Contractor ; Time : SECTION - HIGH AND CONTRACTOR   TO BE RECTOR   Reward()   Satur ; Time ;	PALE (PV (2410)) By : BLL (PV (2410)) By :	(j): Representative (std)
Connective plan by UHC3 Date : Work implection   Re-imple	HECTOR A - ACTOR RAM: TAKIN (10 M Their perty Contractor ; Their : FECTOR - work Rediction ( 10 m) Con ( Rework) ( Senue ; Time ; Time ;	PALE (PV (2410)) By : BLL (PV (2410)) By :	ga Representative 3424 :

Figure 1.2 Customer Complaint Form

#### **1.2 Problem Statement**

There are some problems that students encounter when filing a lost item complaint such as:

- The Dahlia office follows its own operational hours which makes students unable to report at crucial times.
- The forms collected in the office may not be organized and further paperwork needs to be done.
- Information collected from the form can sometimes be unclear due to human errors, hence further clarification needs to be address.

The Dahlia office currently accepts complaints through physical means therefore students are unable to report their missing belongings during non-office hours. The forms need to go through a lot of process before any actions could be permissible. In an office where paperwork is unavoidable, it may lead to forms to be unintended or mixed up with other papers. A clear lost item complaint system should resolve the matter. In addition to that, unreadable writing, and the inability to give more specific details about the missing item could disrupt the investigation due to lack of information.

#### **1.3 Objectives**

The objectives of this project are as follows:

- To design and develop a web-based system that enable students to file a complaint in a more systematic way at all times.
- To integrate a chatbot system to answer Frequently Asked Questions (FAQ's) by students.
- To generate a lost item report which can be documented by the Dahlia College Management Office.

#### 1.4 Methodology

There are common development methodology approaches such as waterfall, prototyping, iterative and incremental development, spiral development, rapid application development, extreme programming, and agile methodology. This project will adopt the agile methodology as it is more suitable for this project which uses both iterative and incremental development at the same time. It involves with collaboration with stakeholders with different stages that requires improvement along the way. Once the project commences, the cycle will go through a process of planning, executing and evaluating. Currently, one of the facilities officers from UNIMAS Holdings Sdn Bhd, Justin Baba has been contacted so that the project will get continuous ideas through meetings and discussions to ensure suitable system for Dahlia College.

The implementation of agile methodology will guarantee better product quality through feedbacks by stakeholders. Moreover, the flexibility in which stakeholders provide their own stage inputs and adaptivity will endorse more changes in between project schedules. Working system can be presented to project's stakeholders at certain stages which leads to improved project visibility that ensures stakeholder quality and progress.

#### 1.5 Scope

The scope of this project consists of two groups which is Admin (Dahlia College Management Administrator) and User (Dahlia Residents) where the admin receives lost item complaints from the system and have multiple actions whether to generate the complaint into pdf, update status, inspect form, etc. The users have the option to add and fill the forms with necessary information and can see the status whether the form is received and viewed by the admin. The users can also edit if there are any changes needed to be made or item has been found so that the admin will be alerted with the situation. Chatbots can be interacted by users for further inquiries from students.

#### **1.6 Significance of project**

The proposed web-based system is a beneficial platform for both parties as it can be access anywhere and can be monitored at any given moment. The idea to improve the current procedure of filing a lost item complaint into a more digitalized method is a great shift in taking advantage of the current internet technologies that bring reliability and convenience to all.

Moreover, less usage of paper is encouraged in this current time where all documents can be saved in the database instead of files that can take up space in an office room. Not only does it can conserve energy, but it can also save office money too.

#### **1.7 Project schedule**

The progress for all the 3 chapters in final year project (FYP) will be compiled to form FYP1 and will be submitted on the 25<sup>th</sup> January 2023 in the first semester of 2022/2023. The following semester will showcase the continuation of the first FYP and it will be more focused on the development side.

#### **1.8 Project Outcome**

At the end of this project, this project is expected to provide a lost item complaint webbased system which includes a chatbot for Dahlia College where it is managed by the Dahlia office management. This includes full access to the admin role and functionality and database. While unfortunate Dahlia students who have lost their items can have the convenience to use the system wherever they want and submit the full complaint to the office management for further actions.

#### **1.9 Chapter Summary**

The highlights for the Chapter 1 Introduction consists of problems that has been pointed out, objectives that needs to be fulfilled, methods used, project scope, how significant is the proposed project, a project schedule for reference, and the desired outcome.

#### **CHAPTER 2: LITERATURE REVIEW**

#### **2.1 Introduction**

The use of web-based systems has been the norm for companies and organizations in handling problems faced by their clients. They are responsible for anything that happens as the clients have the rights to voice their concern when they face complications while using their services with respect to their organization policies. One of the alternatives besides reporting directly to the organizations via office department is through an established web-based system.

Dahlia Residential College, a private residential property which is under UNIMAS Holdings Sdn. Bhd. (UHSB) has always been a reputed company that has participated in both federal and state government projects and has been registered with few government agencies such as Ministry of Finance, Human Resource Development Fund, National Resources and Environment Board, and so on. They made sure that Dahlia College provides the best accommodation for their residents. However, to ensure lost items were alerted to the authorities, the only way residents could file a lost item complaint is through filing up a form at the Dahlia office which is currently the only procedure that can be done.

This chapter highlights the existing lost item complaint system that will be analyzed and compared to the proposed system. There are parameters that will be taken note and three existing systems was chosen for comparison. The uniqueness of each existing systems will be observed for reference purposes when the proposed system is at the build phase.

#### 2.2 Overview on Similar Systems

#### 2.2.1 RMP e-Reporting System

RMP e-Reporting System is a service provided by RMP which gives the public the ease to make a police report online, which do not involve criminal cases and/or which do not require further investigation by the police. e-Reporting is restricted to Malaysians aged 18 years and above and can be accessed anytime and anywhere via Internet. The e-Reporting System was officiated by YDH Tan Sri Dato' Sri Khalid Bin Abu Bakar, Inspector General of Police. The e-Reporting facility is currently limited only to serve in the Kuala Lumpur Contingent area. From this, a total of 1,858 police reports have been lodged through this web-based system with 13,578 registered users across Kuala Lumpur. Missing items including identity card, passport, credit/ATM card, handphone and road tax can be done here.

RMP currently envisions a total Digital Government that combines business and technology that enhance user experience with centralized services. They will continue to improve productivity and extend services when needed through this digital channel.

The system starts with user to register and log into their new account. Users are able to enter their details about their missing item through the given forms, confirmation to make sure all the details are correct, and print the report when necessary. Overall, the features of the system are straightforward and easy to understand with simplistic and clean UI.

e-Reporting PDRM	Police Report Pri	nt Police Report Personal De	tails	E Logout
Personal Details	Incident Details	Description Of Incident	Confirmation Print Repo	ort
Map Satellite	Find Incident Location		$r \setminus $	SK (A) Ibnu Khalt
	p	KAMPUNG SUNGAI JERNANG BARU		
7 1		C Dahlia College	२ ८	-
~ ?	Samarah KAMPONG	an Country Club 💜 University of 🌍 Malaysia, Sarawak 🖓	🔶 ku	+
2	MERDANG		Cempaka College S	— ar
Boogle	Everwin Centre Samaraha	Sdn Bhd 😡 👝	Facilities 2 Keyboard shortcuts Map data @2022 Goo	gle 500 m Poighat Terms of Use Report a map error
			Date * :	
ocation of Incident * :	Please Select			Until
ocation of Incident " : ot / Room / Office / Buildin			Time * :	
		··· · ·	Time * : Balai Polis Repot Submitted * :	
ot / Room / Office / Buildin			Time * :	
ot / Room / Office / Building			Time " : Balai Polis Repot Submitted " : Contingent " : Station " :	
ot / Room / Office / Buildin street Name * : ?ark / Place Name * : ?ostcode * :			Time * : Balai Polis Repot Submitted * : Contingent * : District * :	
ot / Room / Office / Buildin treet Name * : 'ark / Place Name * :			Time " : Balai Polis Repot Submitted " : Contingent " : Station " :	

Figure 2.1 RMP e-Reporting System

#### 2.2.2 UTAR Lost and Found Management System

Universiti Tunku Abdul Rahman (UTAR) Lost and Found Management System was made by Chin Yun Ting, a software engineer student for her final year project (FYP). The goal was to analyze any existing lost and found problems that exist within UTAR and observe features of similar systems that will be used for the project. A more efficient and effective way of managing and organizing the missing items can be achieved by utilizing the system.

The system can be accessed through registering and logging in to the system. The features are the announcement page connected to either directly from the system or through social media. There are also forms to report any missing item cases so that the management are aware of the situation. In addition to that, the inclusion of the item found section is where the users could claim their missing items if they have been found. The variety of features included in the system gives the user ease when filling out the report form. (Chin, Y. T. 2020).

'AR Lost and Found Management System			≜ Chin Yun Ting Lo
Home / Report Lost			
Report Lost			
Lost something and can't find it	in the items list? Fill out the form to report	your item!	
N	ame		
Cate	gory Select Category	~	
Descrip	tion		
Possible Loca	tion		
Date	Lost mm/dd/yyyy		
In	age		
	Choose File No file chosen		
	Submit		
Back			

Figure 2.2 Lost Report Form

Hor	ne / Item Fou	und									
Iter	n Foun	ıd									
										Add Nev	Item
No	Item ID	Name	Image	Category	Description	Location Found	Date Found	Who hold this item?	Where to find?	Status	
				~			mm/dd/yyyy			*	
1	F1003	Jacket		Clothing	Adidas female jacket	K8520	06/13/2020	Lee Mei Hao	Department of Safety & Security	Sold at 2020-08- 19 13:16:51	0
2	F1004	Slipper	22	Others	Blue slipper	KB100	08/11/2020	Lee Mei Hao	Department of Safety & Security	Selling	0
3	FI007	Laptop Charger		Computers & Electronic	Acer laptop charger	KB101	08/14/2020	Lee Mei Hao	Department of Safety & Security	Sold at 2020-08-	0

Figure 2.3 Item Found Section

#### 2.2.3 RepoApp

RepoApp is a web-based lost and found software with a mobile-friendly design of user interface. It allows customers to integrate with the website so any operations can be done within their organization website. Most American universities and the renowned National University of Singapore (NUS) are currently now using RepoApp to manage lost and found items within the entire campus.

The features of RepoApp include an email notification to suspected owners. This allows admin to send emails with the templates provided without ever needing to write their own email content. This feature proofs to save time and will be able to contact the victims in an instant. The release of unclaimed items will also be implemented in the lost and found system. All the expired items will be opened for students to bid on to avoid wastage.

	🗁 Claims 🛛 😜		ners 🛛 📜 Bulk Release				[ab]	Reports	<b>W</b> <sup>0</sup> 000	rs & Settings	* <u>ě</u> r	nansour(	Struerne	trics.cor
ems	Add Item >	2 Re	fresh -		Keyword(s)		q	Search	*		Q./	Idvances	d Search	
Advance	d Search													6
Contair	ner					Category								
TERM	INAL A OFFICE BOX	C1			0	Optional ¢								
Found on or After						Found on or Before								
m	01-23-2020					01-28-2020								
Status						Keyword								
Relea	sed				0	Green SunGlasses								
Venue														
ACAD	EMIC BUILDING													
					•	Q Search Reset								
Items (15 em ID	Description	Expire	Container	Venue	Cate			Found	Found	Storage Date	Status	Photo	Notes	Creat
_				Venue ACADEMIC BUILDING	Cate			Loc	Date			Photo	Notes	
em ID 1709284 +	Description Green Sunglasses with	After	Container		Cate Perso	pory		Loc	Date 11-22-2019	Date	Available	Photo	Notes	At 11-22
<b>IT ID</b> 1709284 <b>•</b> 1704617 <b>•</b>	Description Green Sunglasses with gold frame red wallet with	After 90	Container JUNE2 CONTAINER	ACADEMIC BUILDING	Catego à Perso à Perso	pory nal - Wallet/Glasses/Keys	ID	Loc	Date 11-22-2019 11-12-2019	Date 11-22-2019	Available Available	Photo	Notes	At 11-22 2019
em ID	Description Green Sunglasses with gold frame red wallet with køychain	After 90 90	Container JUNE2 CONTAINER JUNE2 CONTAINER	ACADEMIC BUILDING	Catego Perso Perso Electr	pory nal - Wallet/Glasses/Keys nal - Wallet/Glasses/Keys	ID	Loc	Date 11-22-2019 11-12-2019 11-11-2019	Date 11-22-2019 11-13-2019	Available Available Available	Photo	Notes	At 11-22 2019 11-13 2019 11-13

#### Figure 2.4 Search Feature

ems	Add Item >	2 Re	fresh 👻	К	ayword(s)		Q, Search	×		Q,	Advances	d Search	
items 🚯													
iem ID	Description	Expire After	Container	Venue	Category	Asset ID	Found Loc	Found Date	Storage Date	Status	Photo	Notes	Created At
1709284 -	Green Sunglasses with gold frame	90	JUNE2 CONTAINER	ACADEMIC BUILDING	Personal - Wallet/Glasses/Keys			11-22-2019	11-22-2019	Available			11-22- 2019
1704617 +	red wallet with keychain	90	JUNE2 CONTAINER	ACADEMIC BUILDING	Personal - Wallet/Glasses/Keys			11-12-2019	11-13-2019	Available			11-13- 2019
1704289 +	Black iPad	90	JUNE2 CONTAINER	ACADEMIC BUILDING	Electronics -Cellphone/Camera/Tablet			11-11-2019	11-12-2019	Available			11-12- 2019
1641452 +	Plantronics Headset black and white	90	JUNE CONTAINER	JOHN JAY BUILDING	Electronics - All Others			06-19-2019	06-22-2019	Available			06-24- 2019
1641451 +	Hp wireless white and black mouse	90	JUNE2 CONTAINER	JUNE VENUE	Electronics - All Others		Here	06-22-2019	06-23-2019	Available		0	06-24- 2019
1639788 +	2nd Test	90	JUNE2 CONTAINER	TERMINAL A FOOD COU	IRT June Category			06-19-2019	06-19-2019	Available			06-20- 2019
1639408 +	Black Leather RRJ Jacket with Blues Clues Print	120	TERMINAL A OFFICE BOX1	HOTEL VENUE	McGill - Category 1	123		06-12-2019	06-18-2019	Available		0	06-19- 2019
1561942 +	Another Photo Test	90	JUNE2 CONTAINER	HOTEL VENUE	Miscellaneous			04-25-2019	04-26-2019	Available			12-27- 2018
1559578 +	test for Photo Feature	90	BOX2	HOTEL VENUE	Miscellaneous			05-09-2019	05-10-2019	Available			12-20- 2018
1554542 +	Testing Camera using Desktop	90	TERMINAL A OFFICE BOX1	ACADEMIC BUILDING	Collectors items			04-10-2019	04-10-2019	Available			12-10- 2018
1507000	Dell Lanton Black	90	SAFE BOX	CASINO	Electronics -Cellphone/Camera/Tablet			10-10-2018	10-12-2018	Available	24		10-12-

Figure 2.5 Lost Item List

#### 2.3 Comparison of Current System

Based on the existing system, some key features that are deemed vital to be put in the proposed system. This may change depending on the clients' request.

Features	RMP e- Reporting System	UTAR Lost and Found Management System	RepoApp	Proposed System
Sign Up/Login	V	V	$\checkmark$	V
Edit Profile	V	V	V	V
Navigation Bar	V	V	V	V
Detailed Form	V	V	V	V
CRUD function	V	V	V	V
Print Report	V	V		V
Notify status via email	V	V	V	
Chatbot				V
Integrate with website			V	
Paid Service			V	

Table 1: Comparison of features between systems

#### 2.4 Summary

The chapter has highlighted the reviews of all three systems that are involved in complains of lost items. The procedure and usage of the system will differ due to its distinctive functionality and features. The proposed project will undergo its next phase after documented potential aspects that can be brought as an idea during development. In addition to that, a well-established system made by professional web-based developers serve as a guide to create a robust system.