



# SYSTEM ANALYSIS DESIGN

(SECD2613)

SECTION 08

GROUP DEFENDER

PHASE 2

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## **1.0 Introduction**

Thesis Binding UTM provides Thesis Formatting, Printing, Binding and many more services. In the current system, customers will send their work through whatsapp. The shop owner will record all the order details into Microsoft Excel through the computer. Staff will process the customer's order and deliver to them. Shop also helps customers (students) if they request to meet their SV for signature and submit their assignment and also project to any faculty. Shop also accepts requests from customers who come from other areas like customers from Hospital Sultanah Aminah.

## **2.0 Problem Statement**

1. The shop owner can only handle a maximum of 15 orders per day even if there are more than 30 orders on that day.
2. The staff takes a long time to search the previous record of the customer as reference when the customer wants to print or burn the same file.
3. The current system does not classify the order type and the customer's document accurately.
4. The staff takes time to record the customer's information and their order detail.
5. The current system needs the staff to update manually with the customer and tracing the order process.

## **3.0 Information Gathering**

### **3.1 Method used:**

We decided to use a questionnaire and interview to collect the data on human and system information requirements. We did some preparation before the interview section. First, we researched the background material. After that, we determined the objectives of the interview. We decided to choose the printing shop owner as our interviewee so that we can understand the problems of the system and the features needed in the new system. Then, we discuss the questions to be asked during the interview.

### 3.2 Questionnaire:

For the questionnaire section, we use google form to disseminate our questions to students who are in UTM. For this questionnaire, we have divided it into two parts. In the first part, the question given is for the current system and in the second part related to the future system.

#### PART 1

College

Your answer

1. If there is a printing and thesis service online, would you like to use it? \*

☐ Yes

☐ No

2. What is your reason in No 1? \*

Your answer

3. If your answer is Yes, what type of platform do you prefer to use?

☐ Website

☐ Mobile Application

4. How likely will you use printing service at UTM? \*

- ☐ Like it very much
- ☐ Good
- ☐ Not so much
- ☐ Not like it

5. How much time do you spend to use the service in the printing shop? \*

- ☐ Sometimes
- ☐ Rarely
- ☐ Frequently

6. Currently, the Thesis Binding UTM takes their orders using WhatsApp. Do you find it easy to place an order via WhatsApp? \*

- ☐ Yes
- ☐ No

7. What are other problem that you face when you use the service in the printing shop besides in No 6?

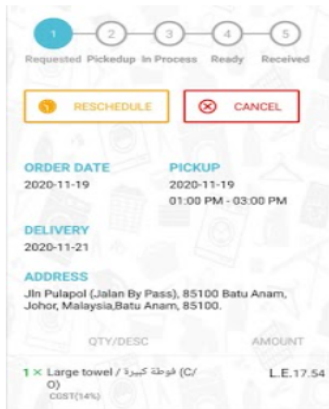
Your answer \_\_\_\_\_

## PART 2

1. Is it better for a printing shop (Thesis Binding UTM) to provide an application? \*

- ☐ Yes
- ☐ No

2. Is it important to know the process of your document in the application? Either still made or ready like in the picture. (Example of delivery service process) \*



- ☐ Yes
- ☐ No

3. Is it important for this application to provide different payment methods? for example, cash on delivery, via transfer, or scan QR code. \*

- ☐ Yes
- ☐ No

4. These are the services that are in our application: did you think all these services is a must for student and need to have it in the application? \*

- Printing
- Hardcover/Binding
- Binding – tape/ ring
- Booklet
- Photostat
- Thesis Formatting
- Thesis printing
- Burn file in cd
- Cd with sticker
- Meet your SV for signature
- Submit to faculty (Any Faculty in UTM)

- ☐ Yes
- ☐ No

5. Is it important for you to view your document history in the application? \*

☐ Yes

☐ No

6. Will this app make your work easier and save you time? \*

☐ Yes

☐ No

7. Will you be interested in using the printing shop application for Thesis Binding UTM after you answer the all question above? \*

☐ Yes

☐ No

8. Any suggestion to improve our application service/interface? \*

Your answer

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### 3.3 Interview:

There are a total of six questions asked in the interview, which are four closed questions followed by two open-ended questions. The question structure is a pyramid structure. We choose to use the pyramid structure because it allows for more generalized responses. It is useful when the interviewees need to be warmed up to the topic or seem reluctant to address the topic.

Type of questions	Interview questions	
Introduction	Interviewer:	Good evening, Pn Alia. I am Koh Xin Yi, a second-year student from the Faculty of Engineering. My friends, Nur Hidayah, NurSyafarina, Ong Yin Ren and I currently carry out a project of course SAD and Database. We need to analyze problems of a system and design solutions to improve the current system. We decided to choose your Thesis Binding UTM shop as our case study. So, I am now representing my group members to have an interview with you. Are you free to answer some questions for me now?
	Interviewee:	Good evening, Xin Yi. Yes, sure.
CLOSED	Interviewer:	Thank you for spending your time to answer my questions. Without wasting your time, let's start the interview. The first question, <b>do you face any problem with your current system?</b>

	Interviewee:	No problem so far, everything is in good condition. Even if there is a problem that happened, it is not a big deal.
<b>CLOSED</b>	Interviewer:	<b>Have your sales increased in the past few years?</b>
	Interviewee:	Yes, my sales increased in the last few years.
<b>CLOSED</b>	Interviewer:	<b>Which group of people are your majority customers?</b>
	Interviewee:	My customers are mostly students from university.
<b>CLOSED</b>	Interviewer:	I see. <b>Do you think your current system is efficient and safe?</b>
	Interviewee:	I think my system is not efficient enough and safe yet. However, I will find a more proper and safe system. I hope there is a proper system for me.
<b>OPEN-ENDED</b>	Interviewer:	If we propose a new online system for you, <b>what feature do you wish to have in the new online system?</b>
	Interviewee:	I hope there is a system where the students can place their order through the system and complete the payment together. Our behalf can clearly understand the customers' request, and no problem exists until the order is completed.
<b>OPEN-ENDED</b>	Interviewer:	<b>How did you think a new online system helps to reduce your cost?</b>



	Interviewee:	If I have that system, I think the working procedure will be smoother and more efficient. I believe it can ease my working burden.
<b>End of interview</b>	Interviewer:	Alright. Now I get your thoughts. It has come to the end of this interview. Once again, I would like to say thank you for allowing us to carry this interview with you. Thank you for your precious time.
	Interviewee:	Alright. You are most welcome.

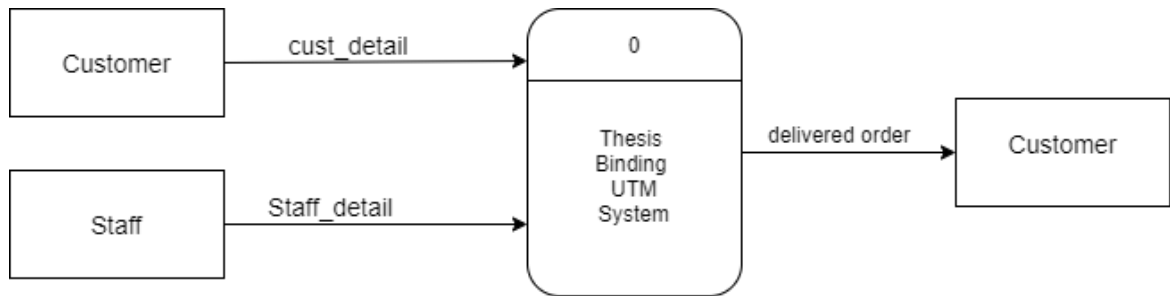
## 4.0 Requirement Analysis

### 4.1 Current Business Flow

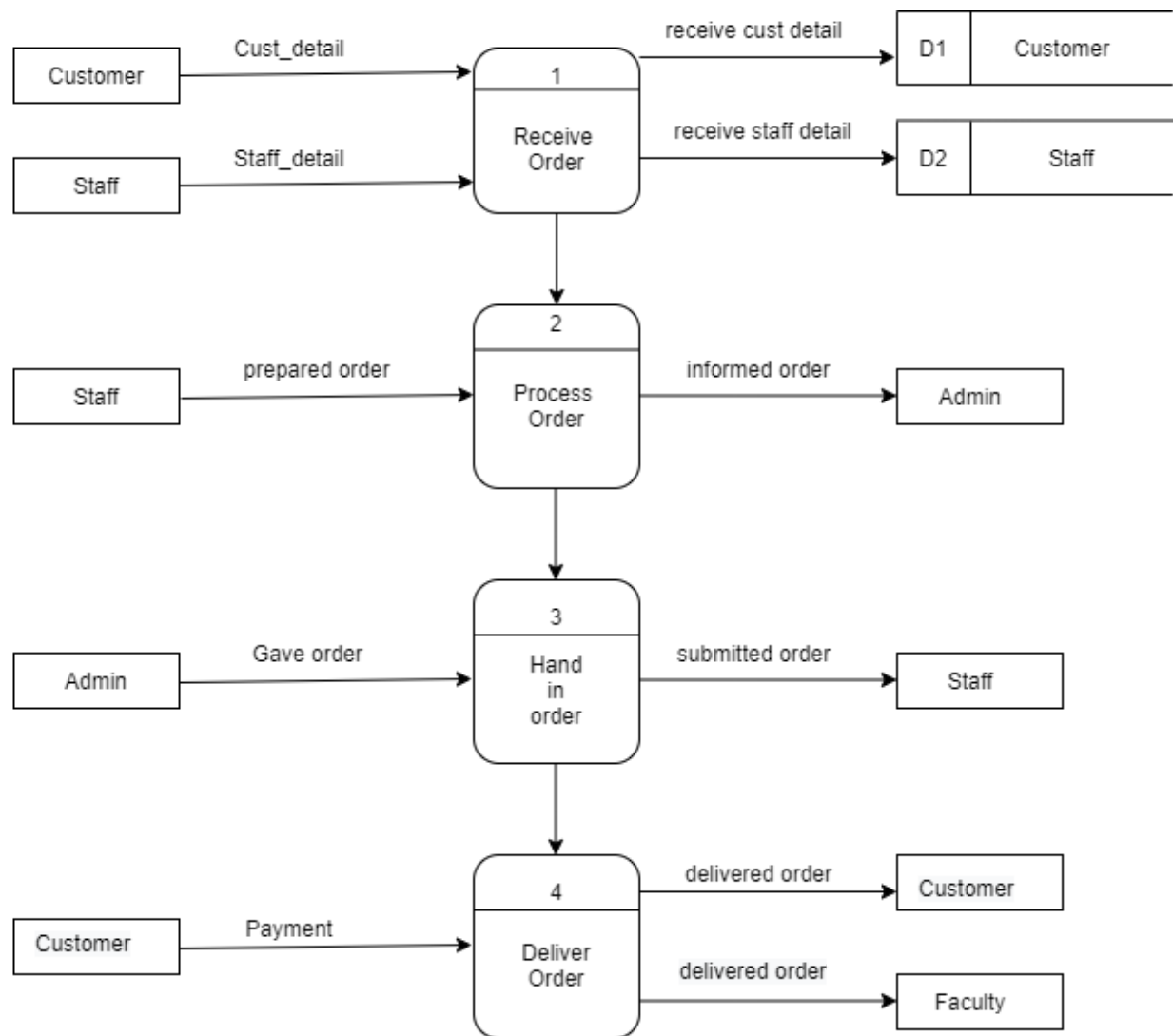
Current system customers will send their work through whatsapp. One of the printing shop's staff, which is the admin, will record details of customers in Microsoft excel. Then, the staff will process the customer's document. Admin will help staff when not receiving any document from customers. When the document is ready, staff will inform the admin to get the details of the customer to deliver. There is also a delivery service to any faculty and also to get SV signature. Customers will make payment after the staff deliver to them.

### 4.2 Functional Requirement

#### 4.2.1 Context Diagram



#### 4.2.2 O Diagram



Cust\_detail →

Customer detail consist of name,matric number,telephone number,faculty,residence college and softcopy work

Staff\_detail →

Staff detail consist of name and telephone number

### 4.3 Non Functional Requirement

<b>Performance</b>	<ul style="list-style-type: none"><li>- Able to manage data of customers</li><li>- Able to receive the order immediately</li><li>- Able to reply customer message in a short time</li><li>- Allow users to place their order simultaneously</li><li>- Able to recover in a super short time when the system crashed</li><li>- Allow different types of transactions such as online banking and cash..</li><li>- The privacy of the user is being protected</li><li>- The response time for every action must not exceed 8 seconds.</li></ul>
<b>Control</b>	<ul style="list-style-type: none"><li>- Enable multiple languages such as English, Bahasa Melayu and Chinese to adopt the diversity of race in Malaysia</li><li>- Provide the shortest placing order procedure to the users</li><li>- Provide an easy access system</li><li>- Restrict the user from proceeding the order when the users do not complete the order detail.</li></ul>

### 4.4 Data Requirement

Entity	Data to be stored	Requirements of Data
<b>Customer</b>	<ol style="list-style-type: none"> <li>1. Name</li> <li>2. Phone number</li> <li>3. Shipping address</li> </ol>	
<b>Document</b>	<ol style="list-style-type: none"> <li>1. Document name</li> <li>2. Price</li> <li>3. Stock quantity</li> <li>4. Type of document</li> <li>5. Characteristic of document</li> </ol>	<p>[3] Price shown should be included with tax GST. No further add on after that.</p> <p>[6] Characteristic document such as pages, color, set</p>
<b>Order</b>	<ol style="list-style-type: none"> <li>1. Order number</li> <li>2. Order time</li> <li>3. Order status</li> <li>4. Quantity</li> <li>5. Subtotal</li> <li>6. Delivery Fee</li> <li>7. Grand price</li> </ol>	<p>[1] Order number written by staff.</p> <p>[5] Subtotal = (price*quantity) whereas the price refers to the Document entity</p> <p>[7] Grand price = subtotal + delivery fee</p>
<b>Staff</b>	<ol style="list-style-type: none"> <li>1. Staff name</li> <li>2. Staff ID</li> <li>3. Staff's phone number</li> <li>4. Order picked up</li> <li>5. Order delivered</li> </ol>	<p>[2] Every Staff have their own ID</p>
<b>Payment</b>	<ol style="list-style-type: none"> <li>1. Payment method</li> <li>2. Total payment</li> </ol>	<p>[1] Payment method is customer can choose to pay cash on delivery or via transfer</p>

## 5.0 Summary

Based on research, we find that the majority of customers of thesis binding shops are students. Even though so far the shop does not face any problem but they still think their system is not efficient. We can see from the problem statement that we are listed.

Based on the 33 respondent from the questionnaire, the current system in first part, 100% of the respondent would prefer to use the printing and thesis service online if it exist because it is convenient as it can make their work easy and also no need to be afraid when their printer is no ink. Furthermore, it is easy to access and can save their time as it gives easy service online rather than going to shop physically. Besides, according to the platform that more prefer to use, mobile application is more attractive than the website as 54.5% of the respondents are more partial toward mobile application and 45.5% of the respondents more partial toward the website. For the current system available in UTM, 45.5% of the respondents feel “GOOD” as the range for their likely, 33.3% of the respondents feel “NOT SO MUCH” as the range for their likely, 21.2% of the respondent feel “NOT SO MUCH” as the range for their likely and none of them does not like this current printing service. For the service in the printing shop, 66.7% of the respondents selected SOMETIMES that they will spend to use, 18.2% of the respondents selected RARELY that they will spend their time and 15.2% of the respondents selected FREQUENTLY on their time to use this service in the shop. Currently, 72.7% of the respondents find it easy to place orders via Whatsapp and 27.3% of the respondents find that placing orders via Whatsapp mode is not easy. It is because they need to wait too long, which may lead to miscommunication and they might not know how to use it as they didnt use it before.

For the second part which concerns the approach to the application, 87.9% of the respondents think it is better for a printing shop to provide an application and 12.1% of the respondents think it is not a need for providing an application. From the 87.9% respondents, we may can conclude that providing an application are convenient and efficiency, easy for everyone to use and can save time as they no need to go fo the printing shop. However, from the 12.1% respondents, providing an application is inconvenient and they think it is better to use the web. Next, 100% of the respondents think it is important to know the process of their document in the application, provide multiple payment methods such as cash on delivery, via transfer or scan QR code in the

application and they think it is a must for students and need to have it in the application. Furthermore, 97% of the respondents agree that it is important for them to view their document history in the application, feel this app will make their work easy thereby can save their time and will bring up their interest in using the printing shop application after answer all the questions in our google form. However, 3% of the respondents do not agree with that.

According to the respondents that suggest in order to improve our application service or interface, they wish to have free of charge in the service, may provide the delivery service as well, can provide a feedback in a specific column in order to give a better improvement on our printing service, can make the interface of the online application more user-friendly and the most important is easy to use.

So, we came out with the solution which is an online system that allows customers to send documents via online. Their details and documents will be saved in a database which is more safe and more efficient when the shop wants to find it later.

## **Meeting Logs Phase 2**

**Date: 7 December 2020**

**Attendance:**

Team-mate name	Signatures
1. NURSYAFRINA BINTI AHMAD	
2. ONG YIN REN	
3. KOH XIN YI	
4. NUR HIDAYAH BINTI HAMRI	

### Discussion Results/Findings:

We divided the tasks into 2 which are Hidayah and Xin Yi handle questionnaires and Syafrina and Yin Ren handle DFD diagrams. We use google form as a platform to ask opinion from the target user which is a student from any college in UTM. We also decide to have an interview with the owner of the shop.

### Contribution/Ideas:

Team-mate name	Contribution/Ideas
1)NURSYAFRINA BINTI AHMAD	-Propose rough idea for DFD Diagram.
2)ONG YIN REN	-Give some idea to improve context and O diagram.
3)KOH XIN YI	-Propose some question. -Identify whether to use funnel, pyramid or diamond based on the question.
4)NUR HIDAYAH BINTI HAMRI	-Propose some question -Make google form to blast the question.