PROJECT PROPOSAL

MOST PRINTING DATABASE DEVELOPMENT (GROUP 4)

BY

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FAKULTI SAINS KOMPUTER DAN TEKNOLOGI MAKLUMAT

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1.0 Introduction

Information management is a critical component in the daily operations of businesses, particularly in service-oriented sectors such as printing, design, and stationery. At MOST PRINTING, located in Parit Raja, Johor, the efficient management of customer orders, design files, stock levels, billing, and job progress is essential to ensuring smooth operations and delivering high-quality service. The owner of the company and their staff are usually in charge of processing customer requests, keeping track of inventories, and making sure that goods and services are delivered on schedule. Better organization, fewer delays, and the ability to make well-informed business decisions are all made possible by effective information management.

Currently, MOST PRINTING uses WhatsApp for the majority of client interactions and handles business operations manually. Along with detailed directions about size, material, quantity, and other needs, customers usually use WhatsApp to provide their printing or design files. Employees manually enter the job data in notebooks or spreadsheets after receiving the order. After that, they modify or format the files as needed, print, finish (such as cutting, binding, or laminating), and package the finished product. The customer is informed for pickup or delivery when the job is finished. There is no centralized digital system in place to manage inventories, maintain customer data, or track task progress during this process. Most of the records are stored in simple computer folders or handwritten logs, and staff cooperation is crucial to the process as a whole.

Many problems arise by this manual and disjointed system. While design files may be disorganized or hard to find when needed, physical records are prone to being misplaced, destroyed, or lost. Order fulfillment delays, stockouts, and mistakes frequently occur by manual inventory and task tracking. Order processing, design tracking, and inventory management are not integrated, which slows down operations and makes it more difficult to properly assess company performance. Additionally, repetitive jobs like data input and billing are more prone to involve human mistakes.

1 paragraph description of the proposed solution (explain in general, your system that will solve the problem)

We suggest creating a centralized database management system specifically designed to meet MOST PRINTING's requirements in order to address these issues. Important features including order processing, customer administration, design file organization,

inventory monitoring, and billing will all be integrated into this system. A user-friendly interface will allow staff to enter and retrieve data, and the system will automate repetitive processes, produce real-time reports, and safely store data. MOST PRINTING can greatly increase productivity, lower errors, and give its clients better service by implementing this digital solution.

2.0 Problem statement

MOST PRINTING, a local printing service near UTHM has faced several operational challenges due to its manual and disjointed business processes. Firstly, the use of spreadsheets, handwritten notes, and WhatsApp applications to handle customer orders and storing design files results in disorganized data, which makes it difficult to effectively manage information. This often leads to lost files and inconsistent records. Secondly, the absence of a centralized system for tracking job progress causes delays in order fulfillment and hampers staff coordination because employees must rely on memory or manual updates to keep track of task status. Thirdly, inventory and billing are handled manually, resulting in frequent stock miscalculations and errors in payment processing which increase the risk of human error and reduce overall accuracy. These issues collectively affect MOST PRINTING's ability to run effectively, provide prompt service, and make well-informed business decisions, highlighting the need for a comprehensive digital database system.

3.0 Objective

1. To design a database system for managing orders, customers, and inventory at MOST PRINTING.

- The first objective is to design a structured and well-organized database that will be used to store and manage all business data, including order details, customer profiles, and inventory levels. The system will reduce data redundancy, ensure data consistency, and allow data retrieval by creating an effective database structure with properly normalized tables and relationships. This foundational structure is essential for supporting the daily operation of the company and enabling future scalability as the business grows.

2. To develop an integrated system that improves workflow and data accessibility.

- This second objective focuses on developing a front-end interface that connects seamlessly with the back-end database after the database is set up. This system will allow staff at MOST PRINTING to input, update, change, delete and access data in real-time through user-friendly forms and dashboards. Efficiency will be increased and human error will be decreased by automating procedures like inventory checks, order entry, and status updates. Additionally, integrating several functional modules (such order tracking and customer administration) would make departmental workflows more efficient and effective.

3. To test the developed system to ensure functionality, accuracy, and user-friendliness.

- This final objective ensures that the system meets the requirements of MOST PRINTING through testing. While user acceptance testing involves actual users interacting with the system to find any usability flaws, functional testing will confirm that each module functions as intended. Delivering a solution that is not only technically sound but also useful and simple enough for employees to utilize with little training is the aim. By fixing any errors or flaws at this stage, the finished system will be more stable, dependable, and deployment-ready.

4.0 Scope

This project focuses on the development of a database system for a printing service business named MOST PRINTING, located near Universiti Tun Hussein Onn Malaysia (UTHM). The study domain is database development, with emphasis on how local shops manage and store their operational data. The case study location is the MOST PRINTING shop itself, serving as the central reference for system requirements and real-world application.

Data and information were primarily collected through questionnaires distributed to the shop's staff and potentially its customers. These individuals provided insights into the current workflow, challenges, and requirements for the proposed system.

The target users of the system will include:

- Shop administrators (for managing inventory, orders and payments)
- Staff (to handle booking and production operations)
- Customers (for booking print services and making payments online)

The system will consist of several function modules, including:

- User authentication (login/register)
- Booking system for printing services
- Payment module for processing transactions
- Inventory management for materials
- Customer database for tracking repeat clients and contact information

The system will be designed with a focus on user-friendliness, accessibility, and data integrity, ensuring that both staff and customers can interact with it efficiently while maintaining secure and accurate records.

5.0 Expected Outcome

At the end of this project, a fully functional and structured database system will be delivered for MOST PRINTING to enhance its operations. The system is expected to streamline the shop's daily activities, such as booking management, order tracking, and inventory control, while also providing customers with a convenient online platform to request services.

Expected benefits include:

- Reduced manual errors and paperwork through digital records
- Faster and more accurate order processing
- Easier tracking of inventory and stock levels
- Improved customer satisfaction through online booking and payment options
- Better data organization to support future business decision-making

This project also provides insight into how small businesses near UTHM can transition from manual processes to digital systems using affordable, maintainable database solutions.

6.0 Significance

The development of a centralized database system for MOST PRINTING for the business and its general group of customers. The current system used heavily rely on keeping track of information manually, making it prone to error, data mishandling and lack of scalability, making it harder for them when they needed to expand the business.

By streamlining the manual work of data tracking into a database system, operational efficiency will be increased significantly due to process such as order management and inventory tracking will be automated. This can help reduce time consumption and increase productivity. Automation of said process can also help reduce the chance of human error. Manual handwritten notes oftentimes can lead to mistakes when its content is being used, as humans are prone to mistakes like misremembering content or misreading handwriting. The risk of said notes missing will also be eliminated once the data is stored in a functioning database system instead of manually written on a piece of paper.

As the business grows, the need for a scalable system increases. The traditional method of storing data manually into a physical folder is not a sustainable way of storing information, as once the business grows big enough, you will find yourself overwhelmed with the amount of physical data that needs to be kept. Being able to store these data into a database eliminates said problem without having to permanently remove old data to make place for newer data. This is useful as it can still be used for occasional auditing, data analysis and future reference. Having a database system is also a sustainable way to store information, especially critical ones as it removes the need to ensure physical security of critical data from physical danger, like a fire or flood.

In conclusion, the development of a centralized database system for MOST PRINTING is not only essential for improving internal operations but also serves as a stepping stone toward digital transformation for similar small businesses in the community. By addressing current inefficiencies and introducing a scalable, secure, and user-friendly solution, this project supports long-term business growth, enhances customer satisfaction, and promotes the adoption of modern technology in traditional business settings.

7.0 Project Planning

Project is divided into tasks, each with their own timeline. This section outlines the detailed tasks, ensuring the project progress with a neat and organized manner. It also ensures that the aspects of the project are well-structured. The tasks are as followed :

1. Project Assignment (Week 1) :
    - Assign and decide the roles for each team members
    - Conduct meeting to brief the project to all members

2. Identifying and Securing Collaborators (Week 1) :
    - Identifying potential collaborators such as MOST PRINTING for workflow insights
    - Engage and communicate with the collaborators to gather information
    - Documentation of the the information gathered

3. Drafting Proposal (Week 1 -Week 2) :
    - Develop a structured and comprehensive proposal for the project
    - Conduct a final review to ensure the proposal is ready to be submitted

4. Distributing Questionnaires (Week 2 - Week 3) :
    - Design a comprehensive questionnaire for the staffs to fill them to gather information
    - Collect responses and analyze the data received

5. Database Development (Week 3 - Week 5) :
    - Design a robust database structure
    - Develop the database using the appropriate Database Management System (DBMS).
    - Implement essential system required from the collaborators
    - Conduct a test to ensure the system works well before finalizing the project

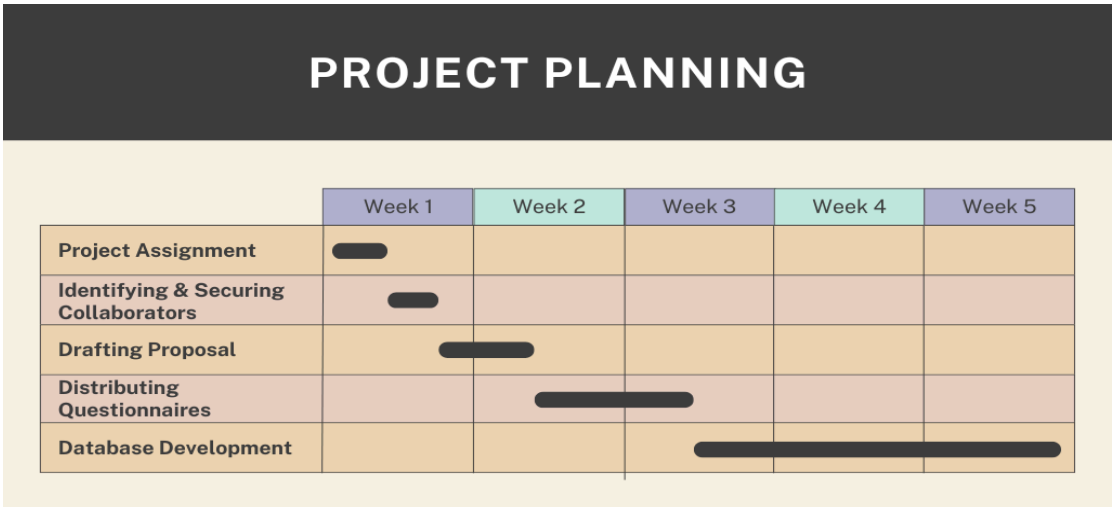

Figure 7.1 : Gantt Chart

8.0 Reference

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