**Proposing real-time POS tracking with a barcode scanner to enhance inventory management at CMP Garage Business**

Proposed By:

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Nogas, Jean

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**2024**

**Introduction**

According to ANSI Information System, Inc. (n.d.), Most modern-day businesses depend on a POS system that comprises these. In order to consolidate their sales data with their inventory management and accounting, entrepreneurs from these businesses usually use spreadsheets from separate programs. A POS system consists of a mix of hardware and software that helps your business complete sales activities. When a customer buys an item from you, the POS system calculates the item’s price. Next, the transaction is finalized upon the customer’s payment for their item. However, it gets harder to manage payments, keep track of inventory, and align sales data with company finances the more intricate the business environment is. This especially applies in the digital era, now that more businesses are taking advantage of omnichannel sales opportunities. These businesses need POS systems that are capable of streamlining their sales, inventory, and accounting numbers all in one place. Luckily, most modern-day POS systems have strong digital components and are capable of doing much more than their older counterparts.

The CMP garage has many targets. They usually outline those goals in their business strategies well in advance of the beginning of new fiscal years. By focusing on the needs of their customers and providing them with good services, CMP Garage may more successfully meet their goals. The researchers help the owner identify their target goals to make the shop better and lessen their manual work. To improve the current system in the CMP garage, the researchers conducted a study entitled “Point of Sale with Barcode Scanner” for the CMP garage shop. A POS with a barcode scanner system is a real-time tracking process at the point of sale. By quickly scanning product barcodes, they can reduce time consumption for customers and increase throughput during peak hours. Using a barcode scanner at the point of sale can be accurate and ensure product identification, which reduces errors in pricing and inventory management control for keeping records of products. The POS system decreases the possibility of human error associated with manual input by quickly retrieving product information, including pricing, description, and stock levels, from the database by scanning the barcode.

**Client Information**

Ms. Jemmel Maurat and her husband, Mr. Alvin Maurat are the owners of CMP Garage, a motorcycle shop located at Navotas City. Their first venture was as distributors of lighting products, such as LEDs and bulbs, for high-rise buildings. Prior to the pandemic, they expanded their business into a motorcycle shop, a passion of Mr. Maurat's, and established two branches in the same area. Unfortunately, they were forced to close both branches due to a conflict with a potential partner and a shortage of trustworthy employees.

**Project Scope**

The researchers outline the scope of the Point-of-Sale System (POSS) being studied.

1. The development of a computerized point-of-sale system is focused on CMD Garage Motor Shop.

2. The system can assist clients with their business with a barcode scanner to know the information about the product, including the brand and the price of the product.

3. The system can provide sales that can be QR-scanned in the point-of-sale system.

4. The system can quickly scan products one by one.

**Project Approach**

We are doing this study to assist our client with their small business by providing them with a barcode scanner for their point of sale (POS). This system is a promising tool to assist clients with their businesses, as it will enable them to view sales statistics and enter proposed prices for their products. It also features a database that secures and keeps all data safe.

We will analyze the situation and pick the best plan to follow with the help of the iterative framework and mixed-method approaches. Using a variety of techniques can improve our knowledge and help us identify the specific solutions that are needed. This will describe the particular actions required to construct a system in accordance with the iterative model's concepts.

**Project Team**

**Jean R. Nogas: Project Manager/Leader**

* + - Work Ethic, Leadership, Organized and Computer Skills
    - Former Leader since Elementary
    - Basic familiarity with HTML, CSS and JAVA

**Jhon Loyd F. Gumangcam: System Engineer 1**

* + - Web Developer
    - Knowledgeable in JavaScript, SSMS and PHP
    - Former Group Leader and Programmer

**Sidney Neo Bernadas: Assistant System Engineer**

* + - Programming, Logical thinking
    - Programmer in MySQL, SQL, VB, PHP, and JavaScript

**Vince Gelo Garcia: System Analyst**

* + - Programming, Debugging
    - Programmer in VB

**Mary Claire Agpoon: Assistant Manager/Documentation Specialist**

* + - Communication, Ability to collect relevant information, Adaptability
    - Data Gatherer. Assistant Manager

**Ericka Gumabon: Data Analyst 1**

* + - Knowledgeable in data collection methods
    - Former Data Gatherer

**Cholo Edmon Asistio: Data Analyst 2**

* + - Interpersonal, Statistical Analyst
    - Knowledgable in VB10 and SSMS
    - Former data analyst and thesis writer

**Dario Caloing: Data Gatherer 1**

* + - Mild programmer and CSS Designer
    - Former leader when 2nd year and a data gatherer

**John Michael Tandoy: Data Gatherer 2**

* + - Data gatherer, data analytics
    - Former group leader and a data gatherer

**Project Timeline**

**Requirement Gathering**

* **Brainstorming**

Assigned to: All

Date Started: 2/17/2024

* **Questioner**

Assigned to: Agpoon, Asistio, Gumabon, Tandoy

Date Started: 2/19/2024

* **Finding a client**

Assigned to: Agpoon, Bernadas, Caloing, Tandoy

Date Started: 2/22/2024

* **Interview**

Assigned to: Agpoon, Bernadas, Garcia, Tandoy

Date Started: 3/4/2024

* **Transcript**

Assigned to: Asistio, Caloing, Gumabon

Date Started: 3/5/2024

**Project Proposal Documentation**

* **Introduction**

Assigned to: Agpoon

Date Started: 3/6/2024

* **Client Information**

Assigned to: Gumabon

* **Project Scope**

Assigned to: Asistio

* **Project Approach**

Assigned to: Tandoy

* **Project Team**

Assigned to: Caloing

* **Project Timeline**

Assigned to: Garcia

* **Project Resources**

Assigned to: Bernadas

* **Risk Management**

Assigned to: Gumangcam

* **Communication Plan**

Assigned to: Agpoon

* **Project Governance**

Assigned to: Nogas

* **Approval**

Assigned to: Nogas

* **Appendix**

**Project Resources**

To fulfil our project's goals, we rely on several essential resources. The first of these is a computer or laptop, which serves as the technical hub for various project-related tasks. Additionally, the integration of a barcode scanner enhances efficiency by facilitating smooth data collection and input processes, thereby optimizing procedures and bolstering the overall success of the project.

Furthermore, the internet facilitates real-time communication, data sharing, and access to online resources crucial for project development, enabling team members to collaborate effectively. The potential for project success is further amplified by the collaborative synergy among team members and the guidance provided by our team manager.

Regarding budget allocation, specifics are not yet finalized; however, details will be disclosed once the project reaches a certain stage.

**Risk Management**

**Potential Risk:**

* **Poor requirements** gathering can lead to creating a system that doesn't meet client expectations. If it happens, it can cause a delay in the completion of the project.
* **Delay deadlines:** delayed deadlines occur when the project takes longer to complete than planned. This can happen due to various reasons, such as unexpected issues, poor planning, or changes in requirements.
* **Lack of Clear Goals:** When project goals and objectives are not clearly defined, team members may work towards different outcomes, leading to confusion and inefficiencies.

**Mitigation strategies:**

* **Conduct interviews and surveys.** Talk directly to end-users and stakeholders to gather their requirements and preferences. Surveys and interviews can provide valuable insights into user needs and expectations.

Regularly review and validate requirements with stakeholders during the development process to ensure that the system being developed meets their expectations and fulfils their needs.

* **Thorough Planning:** Take the time to create a detailed project plan. This plan should include tasks, timelines, what tasks depend on others, and important checkpoints. A good plan helps predict possible delays and makes managing the project easier. Regularly check how the project is progressing compared to the plan. This helps spot any issues with timing early, so you can fix them quickly.
* **Break Down Objectives:** Divide big project goals into smaller, manageable tasks and milestones. This makes it easier to track progress and ensures that each task contributes to the overall goal.

Encourage open communication and feedback from team members and stakeholders regarding the project's objectives.

Ensure that all team members understand how their work contributes to the project's goals. Clearly communicate the connection between individual tasks and the larger project objectives.

**Communication Plan**

In this phase, the communication plan is important part of knowing how your team manages the project and communicates with the stakeholders and administrator of the company. Within this project plan, our team and stakeholders can reach an agreement on how the project will be built and processed. Through this communication plan, as a team, we will know their suggestions and opinions regarding the project that has been discussed. To be prepared and clearly discuss what we need our team to do for the project, such as the budgets or resources, design, regulations, etc.

**Objectives:**

* **Build Communication.** With this method, our team will identify and clearly know the specific needs discussed by our stakeholder or the owner of the company for the project we’re developing. Also, to know the main goal of the project.
* **Manage reputation.** Through this communication, as a developer team, we need to reach an agreement with our stakeholders and make them aware that we need to protect their identity, the processes of their company, or anything else related to the project we build. Through the agreement, stakeholders have been allowed to complain about any issues, terms, conditions, and requirements regarding what we discussed. The goal of this communication is to protect their credentials.
* **Internal Communication.** This communication is to improve collaboration with stakeholders and continue the process of the project. Such as conducting a meeting, whether online or personally. To gather information, if there’s anything, any changes or additional suggestions in what we’ve talked about.

**Project Governance**

In this study, as a project leader, I'll make sure that everything is going smoothly. Making a wise decision can help us keep moving. Sometimes, the process is not going smoothly because of misunderstandings and a lack of resources that can facilitate progress. To address this kind of matter, I always track and ask them about their works to have better communication and work them together to achieve the goal.

These are the project stakeholders:

**Mr. and Ms. Maurat.** Our clients that responsible and freely trusting us for their shops information’s.

**Jean R. Nogas.** The project leader that responsible in this group/ project.

**John Llyod Gumangcam.** The Main System Engineer in this project.

**Sidney Neo Bernadas.** The Assistant System Engineer in this project.

**Vince Gelo Garcia.** The System analyst in this project.

**Mary Claire Agpoon.** The Assistant Manager/Documentation Specialist

**Our Data Gatherer and Analyst in this project:**

**Ericka Gumabon.** Data Analyst 1

**Cholo Edmon Asistio.** Data Analyst 2

**Dario Caloing.** DataGatherer 1

**John Michael Tandoy.** Data Gatherer 2

**Approval**

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**Ms. Jemmel Maurat**  **Mr. Alvin Maurat**

Client 2

Client 1

Client 1

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**Jean R. Nogas**

Project Manager/ Leader

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Capstone Panelist

Capstone Professor

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**John Lloyd Gumangcam**  **Sidney Neo Bernadas**

Assistant System Engineer

System Engineer

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**Vince Gelo Garcia**  **Agpoon Mary Claire**

System Analyst

Assistant Manager/ Document Specialist

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**Ericka Gumabon**  **Cholo Edmon Asistio**

Data Analyst II

Data Analyst I

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**Dario Caloing**  **John Michael Tandoy**

Data Gatherer II

Data Gatherer I

**Appendix**

ANSI Information Systems, Inc. (n.d.). POS (Point of Sale) Systems - *ANSI Information Systems. ANSI Information Systems.* <https://ansi.ph/pos-point-of-sale-systems/>