

**PROPOSAL DOCUMENT**

**RESTAURANT MANAGEMENT SYSTEM**

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| --- | --- |
| **Mentor:** | Nguyen Thi Anh Dao |
| **Team Members:** | Hoang Nghia Khue  Phan Minh Phu  Nguyen Ngoc Thanh  Huynh Viet Tri  Pham Hung Dat |

*Da Nang, 2021*

**PROJECT INFORMATION**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Project Acronym** | RMS | | | |
| **Project Title** | RESTAURANT MANAGEMENT SYSTEM | | | |
| **Start Date** | May 13, 2021 | **End Date** | | June 24, 2021 |
| **Lead Institution** | CMU, Duy Tan University | | | |
| **Project Mentor** | Nguyen Thi Anh Dao | | | |
| **Scrum master / Project Leader & contact details** | Hoang Nghia Khue  Email: hoangnghiakhue@gmail.com  Phone: 0793618988 | | | |
| **Partner Organization** | ABC Restaurant | | | |
| **Project Web URL** | https://abcrestaurant.com | | | |
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Table 1: Project Information

**PROPOSAL DOCUMENT**

|  |  |  |  |
| --- | --- | --- | --- |
| **Document Title** | Proposal Document | | |
| **Reporting Period** | May 2021 | | |
| **Author(s)** | Team | | |
| **Date** | May 13, 2021 | **Filename** | 1.Proposal\_Group1\_RestaurantManagementSystem.docx |
| **Access** | Project and FIT program | | |

Table 2: Proposal Document

REVISION HISTORY

| **Version** | **Date** | **Comments** | **Author** | **Approval** |
| --- | --- | --- | --- | --- |
| 1.0 | May 13, 2021 | Create Document | Team |  |
|  |  |  |  |  |
|  |  |  |  |  |

Table 3: Revision History

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# 1. Introduction

## 1.1. Purpose

The purpose of the proposal is to:

* Define the business need and problem in detail.
* Provide solutions for business needs and show the overview of system architecture.
* Provide overview about resources, schedule, solution and budget for the project.

## 1.2. Scope

* This document provides an overview of project will be developed. It includes the description of business need, the proposed solution, financial forecast and some constraints that involved in the project.
* The document provides a comprehensive master plan for each phase of software development based on the processes that have been selected.
* This document is made for senior management to put forward a proposal.

## 1.3. References

|  |  |  |
| --- | --- | --- |
| **No.** | **References** | **Document Information** |
| 1 | **Scrum Process** | <https://www.scrum.org/resources/what-is-scrum> |
| 2 | **Technical** | <https://stackoverflow.com/> |
| <https://topdev.vn/blog/restful-api-la-gi> |
| <https://vuejs.org/> |
| <https://github.com/> |
| <https://laravel.com/> |
| <https://docs.microsoft.com/en-us/dotnet/desktop/winforms> |
| <https://www.mysql.com/> |
| 3 | **Information** | https://ipos.vn/top-phan-mem-quan-ly-nha-hang/ |

Table 4: References

# 2. Problem Definition

* Restaurant Management System have two system: computer application and website. The cashier use the computer application to choose the place, dishes and issue an invoice. Customers use the website to choose the place, dishes and see the invoice.Customers can choose dishes by cashier, restaurant staff or use the website. The System sharing databases and resources through web APIs.

# 3. Current Status of Art

|  |  |  |
| --- | --- | --- |
| **No.** | **Name of the software** | **Information** |
| 1. | DCorp R-Keeper | * Order quickly on all devices * Multi-channel sales platform, receiving orders anytime, anywhere and processing a closed process from order - production - delivery - payment - confirmation & scoring * KDS kitchen display screen helps to coordinate order handling effectively in the kitchen area * Manage the loyal customer database, and make appropriate customer care policies * Warehouse manager specialized for F&B * Real-time in-depth reporting system * Integrate diversified payment channels |
| 2. | iPOS | * The O2O solution and Self-Order device help customers automatically order without waiting for service staff * The display system at the KDS kitchen helps to coordinate processing and save time to return items * Strictly decentralize to employees, track order history easily, limit fraud and loss * Expand connections with booking - delivery, electronic payment, voucher issuance to help facilitate business * IPOS Manager remote management application helps managers easily track business situation at the restaurant anytime, anywhere in real time. * Full and intuitive management reporting system helps restaurant owners quickly and accurately track business performance, make timely adjustment decisions. |
| 3. | KiotViet | * Order items right on the tablet, save time for waiters * The real-time screen supports the kitchen area to coordinate the processing reasonably, increasing the speed of serving dishes * Create invoices quickly, quickly perform operations such as pairing tables, transferring tables, splitting bills, thereby paying faster, reducing errors and mistakes. * Track all business activities at the restaurant anytime, anywhere through mobile devices such as phones, tablets |
| 4. | Sapo FnB | * Dosing in detail for each dish and controlling the stock of ingredients sold every day, effectively managing the stock of ingredients * Decentralize use for employees, record sales history, detailed sales of each employee * Cloud computing technology to help track business activities remotely anytime, anywhere * Connect shipping partners, manage multiple delivery partners on the same interface * Provide a detailed reporting system that makes it easy to track business performance |

Table 5: Current Status of Art

# 4. Engineering Approach (including solution alternatives)

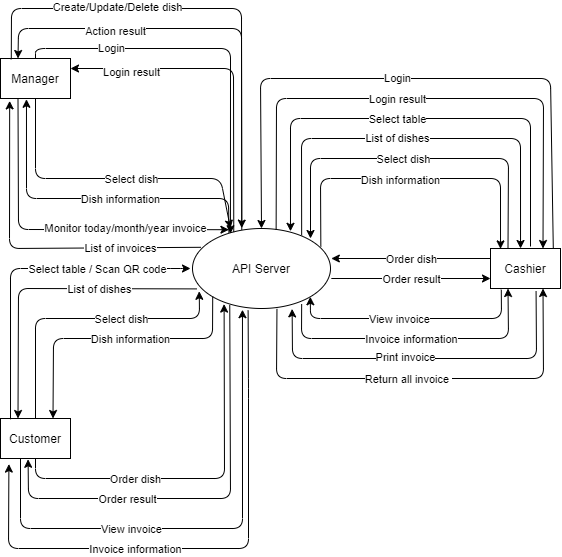


Figure 1: System Context Diagram

**Description**

* The system will use a PHP server and MySQL to execute request and return as a RESTful API. As an advantage of using API, developers can develop software at many platforms. In this case, it will be two client platform. There are web application using VueJS for customers who come to eat and want to order dishes online, windows application using Winform application for cashier to create orders for customer who want to order directly and print invoice and for manager to manage list of dishes and monitor invoices.
* With the server, the developer will use Laravel framework to handle request and create RESTful API. We use Laravel because it is a web application framework with expressive, elegant syntax. Laravel takes the pain out of development by easing common tasks used in many web projects. Laravel is accessible, powerful, and provides tools required for large, robust applications. To use this framework, developer must understand clearly how to do thing in it. Developer should read and learn at https://laravel.com/docs while develop for best performance and code more easily.
* With the web application, the developer will use VueJS framework for the frontend web page. We use VueJS because it is a progressive framework for building user interfaces. Unlike other monolithic frameworks, Vue is designed from the ground up to be incrementally adoptable. The core library is focused on the view layer only, and is easy to pick up and integrate with other libraries or existing projects. On the other hand, Vue is also perfectly capable of powering sophisticated Single-Page Applications when used in combination with modern tooling and supporting libraries. Developer should read and learn at https://vuejs.org/v2/guide/ while develop for best performance and code more easily.
* With the windows application, the developer will use Winform for the cashier to login and the application will connect with the server though API. We use Winform because it is a UI framework that creates rich desktop client apps for Windows. The Windows Forms development platform supports a broad set of app development features, including controls, graphics, data binding, and user input. Windows Forms features a drag-and-drop visual designer in Visual Studio to easily create Windows Forms apps. Developer should read and learn at Microsoft Winforms Docs while develop for best performance and code more easily.
* We use RESTful API because the stakeholder want the software will run more platform in the future and it can be reuse easily. It also help the data synchronized on every platform at one time.

# 5. Tasks and Deliverables

* Proposal Document
* Project Plan Document
* User Story Document
* Product Backlog Document
* Sprint Backlog Document
* Database Design Document
* Test Plan Document
* Test Case
* Interface Design Document
* Architecture Design Document

# 6. Project Management

## 6.1. Cost/Budget for Project

|  |  |  |
| --- | --- | --- |
| **Category** | **Detailed** | **Description** |
| **Start date** | May 13, 2021 | The start date of project. |
| **End date** | June 24, 2021 | The end date of project. |
| **Duration (1)** | 43 days | Total day of project. |
| **Working time (2)** | 8 hours/ day | In one day and for one member. |
| **Total effort (3) = (1) \* (2) \* 5** | 1720 hours | For five team members and entire project. |
| **Labor cost (4) = (3) \* 1.** | USD $1720 | For five team members and entire project. (USD $1/ h/member) |
| **Total cost** | USD $1720 |  |

Table 6: Cost/Budget for Project

## 6.2. Tentative Schedule

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.** | **Task name** | **Duration** | **Start** | **Finish** |
| **1** | **Start Up** | **4 days** | **May 13, 2021** | **May 16, 2021** |
| **2** | **Development** | **37 days** | **May 17, 2021** | **June 22, 2021** |
| 2.1 | Sprint 1 | 12 days | May 17, 2021 | May 28, 2021 |
| 2.2 | Sprint 2 | 12 days | May 29, 2021 | June 09, 2021 |
| 2.3 | Sprint 3 | 13 days | June 10, 2021 | June 22, 2021 |
| **3** | **Project’s Meeting** | **1 day** | **June 23, 2021** | **June 23, 2021** |
| **4** | **Final Release** | **1 day** | **June 24, 2021** | **June 24, 2021** |

Table 7: Tentative Schedule

**7. Project Constraints**

|  |  |  |
| --- | --- | --- |
| **Constraint** | **Constraints Description** | **Guidelines for Acceptance** |
| **Economic** | Budget: limited | Elements for consideration are design costs, production costs, maintenance costs, operating costs, and sales price |
| **Environmental** | - Microsof Window  - Website | Impact of the design on the environment as well as impact of the environment (e.g. temperature range, humidity, vibration, electromagnetic interference immunity, and shock) on the design should be considered. Design for recycling and design to use recycled materials should also be considered |
| **Ethical** | Intellectual property: our team | Ethical considerations can be broad. Areas that are typically addressed include intellectual property, reverse- engineering, privacy, security, and the conflict between cost and safety |
| **Public health, safety, and welfare** | Safe for users, customers | Includes safety standards as well as impact of the design on users (for example, electrical or physical hazards) |
| **Social and Global** | Community in the restaurant | Addresses aspects such as benefits, risks, the man-machine interface, the acceptance of products by the intended user or by society at large, global and socially responsible engineering. |
| **Cultural** | - It could only be a language difference.  - We design interfaces with two languages, one is Vietnamese (native language) and the second is English - a popular language in the world. And we also use text or images | Which cultural characteristics could influence the approach?  How do the design from differents cultures differ? |
| **Sustainability** | Goof reliability, lifetime, durability, reusability, maintainability | Refers to sustainability of resources, including material, energy, supplies, manufacturing techniques, personnel, operation, and the need for additional infrastructure, as well as sustainability of the design including reliability, lifetime, durability, reusability, maintainability. |

Table 8: Project Constraints

# 8. Conclusion

For Restaurant Management System, who need a product that can manage the restaurant. The Restaurant Management System is a application run on the Internet that help consulting and recommending dishes to customers, save information and eating habits of customers to have appropriate suggestions when customers come back, display detailed information about the dish. That is the material, the processing, the nutrition. It allows the manager to enter the data of daily purchases, so that it is more convenient to import goods later, alerting management if an item is about to be used up, management can handle it promptly, statistics on the items that are favored by customers (called many and quickly out of stock), helps the manager to be able to enter the item later, function allows management to update "delicious food of the day", notification of the offer of the day.

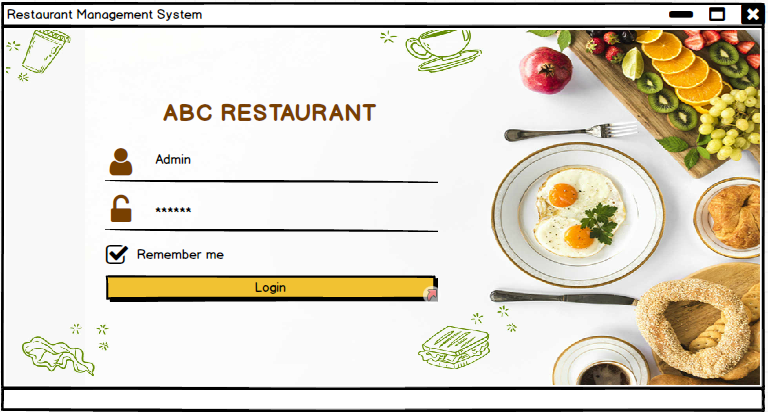
# 9. References

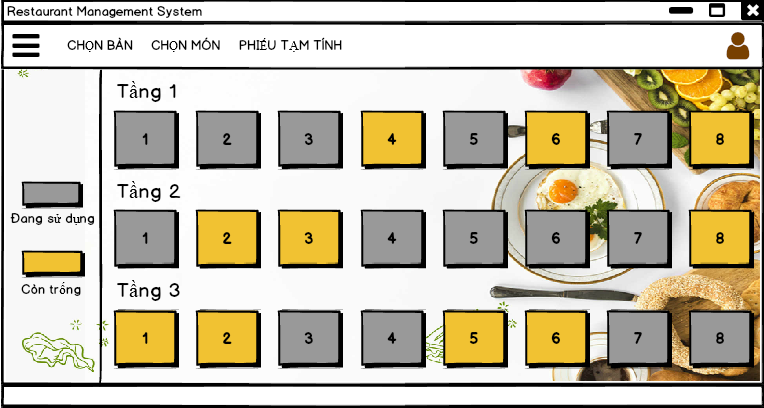
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| <https://vuejs.org/> |
| <https://github.com/> |
| <https://laravel.com/> |
| <https://docs.microsoft.com/en-us/dotnet/desktop/winforms> |
| <https://www.mysql.com/> |
| 3 | **Information** | https://ipos.vn/top-phan-mem-quan-ly-nha-hang/ |

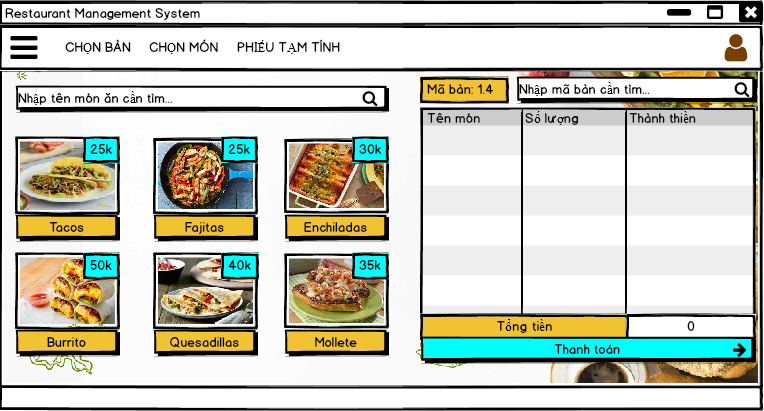
Table 9: References

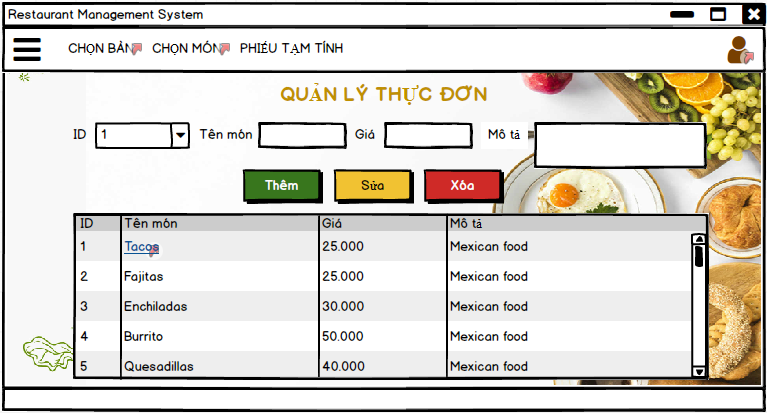
# 10. Attachment:

Description of product requirements form

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