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Web-Based Management System for Ron's Food Seasoning

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Abstract
This study focuses on the implementation of a web-based management system for Ron's Food Seasoning to enhance efficiency and streamline operations. The new system automates critical processes such as payroll management, inventory tracking, and order processing, minimizing errors, saving time, and ensuring accuracy. Real-time inventory updates help prevent stock shortages, while automated payroll ensures timely and accurate wage payments. By centralizing information, administrators can monitor operations more effectively, while employees gain access to role-specific data, maintaining privacy and security. This technological upgrade aims to boost productivity, support long-term growth, and strengthen the company's competitive position in the market.

Keywords: Web-based management system, payroll management, real-time updates, inventory tracking

INTRODUCTION

In the fast-changing retail environment, businesses like Ron's Food Seasoning must integrate advanced technologies to stay competitive. Founded in 1992, the company has earned a solid reputation in the food product industry but still relies on outdated manual processes for key operations, resulting in inefficiencies. Transitioning to a web- based automated system could greatly enhance its productivity by eliminating manual tasks, ensuring accurate order handling, and enabling real-time financial decision-making

Ron's Food Seasoning, a well-established company in the food product industry, faces operational inefficiencies due to outdated manual systems. As the retail sector in the Philippines evolves with increasing consumer demand for speed, accuracy, and quality, adopting modern technology has become crucial. Implementing an automated, web-based management system could streamline operations, reduce errors, and improve productivity by automating tasks such as order processing, inventory tracking, and payroll management. This would enhance customer service by ensuring timely deliveries, accurate order tracking, and faster response to market trends.

Given the country's growing digital transformation efforts, now is the ideal time for Ron's Food Seasoning to embrace technological innovation. Doing so would not only improve operational efficiency but also provide a competitive edge in a rapidly changing market. The adoption of modern systems would position the company as a leader, capable of meeting customer expectations and sustaining long term growth.

Modernizing its processes would directly benefit customer service, as sales agents could provide instant

updates and accurate delivery timelines. Faster data processing would also allow the company to adapt quickly to market changes. As the Philippine retail sector undergoes significant growth and embraces digital transformation, Ron's Food Seasoning stands to gain a competitive advantage by adopting such technology. This move aligns with national efforts to boost connectivity and digitalization, making it a timely and strategic step for sustainable growth.

In summary, adopting modern technology presents a significant opportunity for Ron's Food Seasoning to optimize operations, elevate customer service, and strengthen its market position in today's digital economy. With the rising demand for faster and more reliable service in the Philippines, integrating advanced systems is not just a competitive advantage but a necessity for sustained growth and profitability. By automating processes and leveraging data-driven strategies, Ron's Food Seasoning can overcome current inefficiencies, enhance decision-making, and secure its status as a key player in the rapidly evolving retail industry.

OBJECTIVES OF THE STUDY

The objective of this research is to improve the efficiency and convenience of operations at Ron's Food Seasoning through the implementation of a comprehensive technological system or web-based management system.

1. To design and develop a user-friendly web-based management system that meets the specific needs of Ron's Food Seasoning in terms of:

a) Convenience
b) Availability
c) Security

2. To test the effectiveness of the developed web-based management system by conducting a survey and comparing it to their old system.
3. To evaluate how an automated time and attendance system can enhance payroll monitoring efficiency by accurately tracking work hours, calculating wages, and managing overtime for employees.
4. To implement a web-based management system that allows accessibility anytime and anywhere, enhancing flexibility and ease of use.

METHODOLOGY

Research Design

The researchers employed a descriptive method for this study, focusing on the data collected and the processes involved in developing the Web-Based Management System. This research method serves as a fact-finding approach, ensuring adequate and accurate interpretation of the findings. The descriptive method enabled the proponents to gather essential information and justification needed to fully understand the project's context.

During this phase, quantitative research methods, including surveys and personal interviews, were utilized to collect additional information for development. The proponents conducted a preliminary inquiry to define the costs and requirements of the proposed system, following the System Development Life Cycle (SDLC) and employing Rapid Application Development (RAD) for design, testing, implementation, and maintenance.

System Flow A Process Flow Diagram (PFD) uses symbols and arrows to show relationships and workflows. Below is the PFD for the proponents' application.

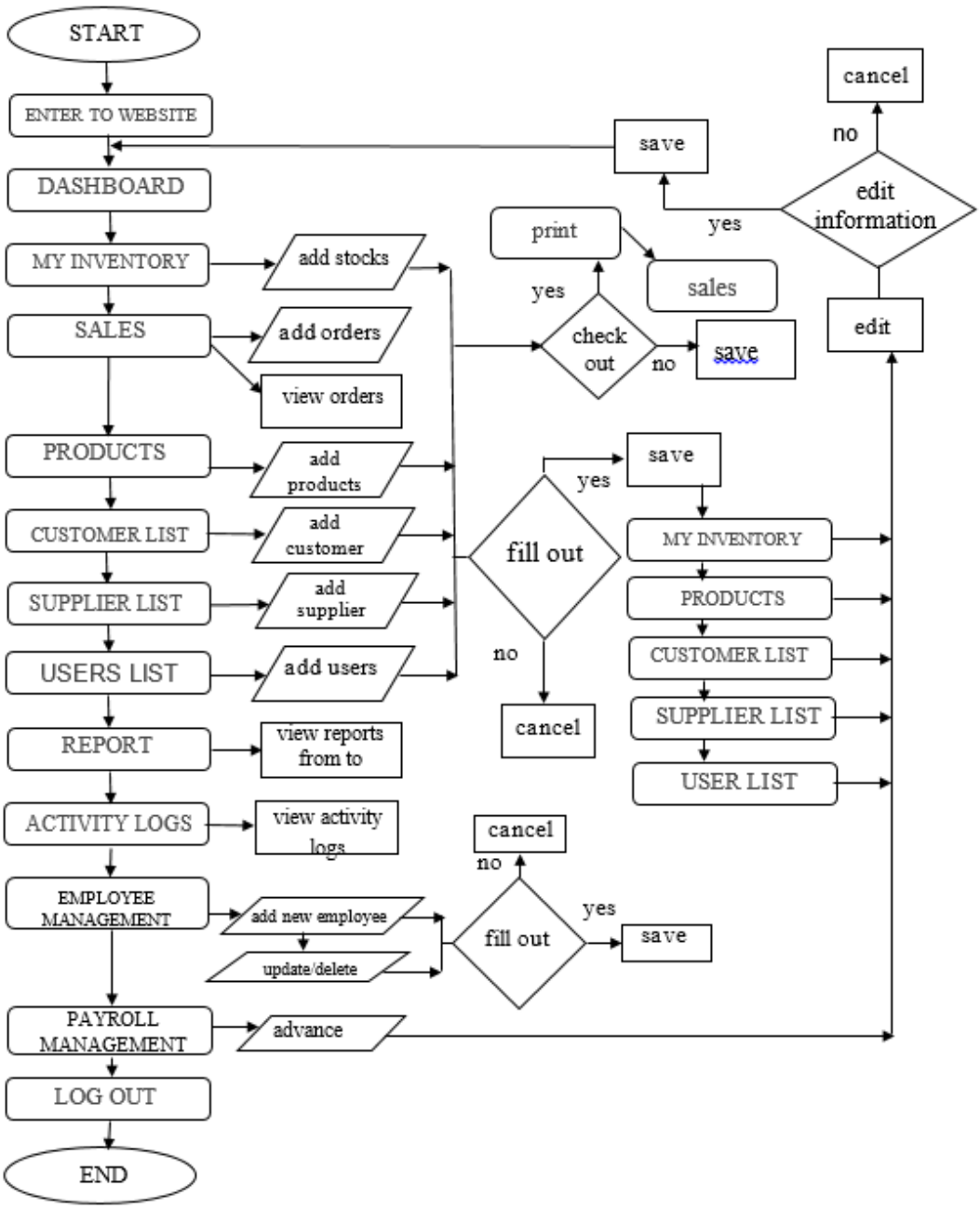

Fig. 3.7 outlines the admin's key responsibilities, including overseeing system operations, managing users, configuring roles, and reviewing sales, inventory reports, and system logs to ensure security.

Data Gathering Procedure

For the study on Ron's Food Seasoning, data gathering was conducted using a quantitative research method through a structured questionnaire distributed in the site. This questionnaire was specifically crafted to evaluate essential aspects of the proposed system, such as reliability, convenience, and security. A representative employee sample was selected based on Slovin's formula, while a Likert scale was utilized to quantify responses and derive a weighted mean.

Following the data collection phase, the gathered information underwent thorough organization and cleaning to ensure its accuracy and reliability. The findings were then analyzed and presented in tables,

which made it easier to interpret employee feedback. This comprehensive approach aimed to yield valuable insights into employee satisfaction and guide decisions regarding the proposed system's implementation, ultimately enhancing the overall experience at Ron's Food Seasoning.

Slovin's Formula

$$n = \frac{N}{1 + N(e)^2}$$

Figure 4.1 Slovin's Formula

Where:
n = Number of samples
N = Total population
e = Error tolerance

The study targeted a population of 16 individuals, using a margin of error (e) of 0.05 (5%) to determine a sample size of 15 respondents for statistically significant outcomes. Feedback was collected using a Likert scale, and the Weighted Mean (WM) formula was applied to calculate average satisfaction ratings for each performance category, as illustrated in fig. 4.2.

$$WM = \frac{(SA \times 5) + (A \times 4) + (N \times 3) + (D \times 2) + (SD \times 1)}{T}$$

Figure 4.2 Weighted Mean (WM) Formula

Where:
WM = Computed Weighted Mean
T = Total no. of respondents

Likert Scale

This study assessed the proposed system's performance across five key areas: Convenience, Availability, Security, Accuracy, and Functionality. Respondents' agreement with various statements regarding the system's performance was measured using a Likert scale.

Table 4.3 Conversion of Likert Scale

Range	Equivalent	Value	Description
4.50 – 5.00	SA	5	Strongly Agree
3.51 – 4.50	A	4	Agree
2.51 – 3.50	N	3	Neutral
1.51 – 2.50	D	2	Disagree
1.00 – 1.50	SD	1	Strongly Disagree

Demographic Profile of The Respondents

Table 4.4 Frequency and Percentage Distribution of Sample Respondents

Respondents	Number of Sample Size of Respondents	Percentage
Admin	2	13.33%

Employees	13	86.67 %

Table 4.4 shows the frequency distribution of respondents, with 2 administrators accounting for 13.33% of the total, and 13 employees representing 86.67%.

Table 4.5 Age and Gender of Respondents

Age	Percentage	Gender		Percentage	
		M	F	M	F
18-24	33.33%	2	3	40.00%	60.00%
25-34	53.33%	2	6	25.00%	75.00%
35-44	13.33%	1	1	50.00%	50.00%
45-54	0	0	0	0	0
55+	0	0	0	0	0

Table 4.5 displays the demographic distribution of survey participants by age and gender. It shows that 33.33% are aged 18-24 (40% male, 60% female), while the largest group, 25-34, comprises 53.33% (25% male, 75% female). The data highlights a higher proportion of females, especially in younger age groups.

Result and Analysis of Existing System

Table 4.6 Results of the Final Survey

Questions	5	4	3	2	1
Convenience The system simplifies user experience with its intuitive design and time-saving automation.	34	11	0	0	0
Availability The system is available 24/7 for constant access and productivity.	28	17	0	0	0
Security The system ensures security with encryption, user authentication, and regular updates.	35	10	0	0	0
Accuracy The system ensures accuracy with reliable data and validation, minimizing errors.	34	11	0	0	0
Functionality The system provides functions that meet user needs for continuous task completion.	37	8	0	0	0

Table 4.7 Results of the Final Survey from Likert Scale

Factors	Value	Rate
1. Convenience	4.75	Strongly Agree

2. Availability	4.62	Strongly Agree
3. Security	4.77	Strongly Agree
4. Accuracy	4.75	Strongly Agree
5. Functionality	4.82	Strongly Agree

Table 4.7 assesses five key aspects of a system—Convenience, Availability, Security, Accuracy, and Functionality—using a 5-point rating scale. Each factor received a score indicating "Strongly Agree," reflecting high levels of user satisfaction.

1. **Convenience (**4.75**)**: This score indicates a high level of confidence in the system's ability to provide accurate and reliable results. Users believe that the outputs are consistently correct, which is essential for maintaining trust and avoiding mistakes.
2. **Availability (**4.62**):** This slightly higher score for availability indicates that the system is highly accessible and reliable. This suggests that users can count on it to be available when needed. It's a strong performance, showing that the system is dependable and ready for use most of the time.
3. **Security (**4.77**):** With one of the highest scores, shows that the system has strong protection in place. It indicates that users feel their data and information are safe, and the system is well-secured against potential threats. This high score reflects a high level of trust in the system's ability to protect users.
4. **Accuracy (**4.75**):** Similar to Convenience score, indicates that the system delivers highly precise and correct results. Users can trust that the information provided is reliable, with very few errors. This strong score reflects the system's ability to consistently meet expectations for accuracy.
5. **Functionality (**4.82**):** Receiving the highest score, represents the highest level of unctionality. It indicates that the system excels in providing seamless and effective user experience, with all features working as intended. Users are highly satisfied with its performance, making it one of the most reliable and well-rounded systems available.

CONCLUSION

This study explores how a web-based management system can enhance the operations of Ron's Food Seasoning. The company currently faces several challenges, including slow manual processes in payroll, inventory, and order management, as well as a lack of up-to-date information. The proposed web-based system is designed to be user-friendly and accessible from any internet-connected device, featuring tools for inventory tracking, employee record management, and real-time updates on sales and production. In terms of payroll, the system will automate wage calculations, track hours worked, generate payslips, and manage attendance and hourly rates to determine total employee salaries. By replacing manual tasks such as inventory tracking and financial reporting, the system aims to reduce errors, save time, and improve overall business efficiency through real-time data access and faster information retrieval.

RECOMMENDATION

Based on the findings and the potential benefits of implementing a web-based management system for Ron's Food Seasoning, several recommendations are proposed to ensure successful integration and smooth operation. First, it is important to establish technical support for troubleshooting and regular system updates to maintain smooth functionality. Second, future researchers should continuously monitor the system's performance and gather employee feedback to identify issues and implement necessary

improvements. Lastly, the system should be optimized for mobile devices to allow easy access for employees and managers using smartphones and tablets.

REFERENCES

1. Alarca, J. M., Katigbak, J. R., Martin, M. A., & Tadeo, J. B. (2022). The Market Environment Innovation of General Trias City: A Baseline Study of Micro, Small and Medium Enterprises' Awareness and Readiness Towards Smart City Project. *Asia Pacific Journal of Academic Research in Business Administration, 8*, 52-60. Retrieved from https://research.lpubatangas.edu.ph/wp-content/uploads/2022/06/6-APJARBA-2022-26.pdf
2. Abass, T., Eruaga, M. A., Itua, E. O., & Bature, J. T. (2024). Advancing Food Safety Through Iot: Real-Time Monitoring And Control Systems. *International Medical Science Research Journal, 4*(3), 276-283. doi:https://doi.org/10.51594/imsrj.v4i3.919
3. Baylen, L. N. (2020). Analysis of Inventory Management Systems of Selected Small-Sized Restaurants in Quezon Province: Basis for an Inventory System Manual . *Journal of Business and Management Studies, 2*(3), 9-18. Retrieved from https://al-kindipublisher.com/index.php/jbms/article/view/852#citation
4. Deutch, K. (2023 , November 30). *What Is a POS System and How Does It Work?* Retrieved from The Bottom Line: https://squareup.com/us/en/the-bottom-line/operating-your-business/what-pos-system
5. Haerani, R., Hendriyati, P., Nugroho, P. A., & Lukman, M. (2023). Waterfall Model Implementation In Information Systems Web Based Goods Delivery Service. *Jurnal Teknologi dan Sistem Informasi, 9*(3), 501-508. doi:10.33330/jurteksi.v9i3.2267
6. Hamidah, H., Yasin, V., Hartawan, R., & Sianipar, A. Z. (2022). Designing a warehouse management information system : (Cases Study: PT. Fatijja Digital Indonesia). *Journal of Mathematics and Technology (MATECH), 1*(2), 91-103. Retrieved from https://journal.binainternusa.org/index.php/matech/article/view/75
7. Intal, G. L., Payas, J. D., Fernandez, L. M., & Domingo, B. M. (2020). Restaurant Information System (RIS) with QR Code to Improve Service Operations of Casual Fine Dining Restaurant. *2020 IEEE 7th International Conference on Industrial Engineering and Applications (ICIEA)*, 1054-1059. doi:10.1109/ICIEA49774.2020.9102036
8. Jenkins, A. (2020, September 18). *What is Inventory Management? Benefits, Types, & Techniques*. Retrieved from Oracle NetSuite: https://www.netsuite.com/portal/resource/articles/inventory-management/inventory-management.shtml
9. Jou, Y.-T., Saflor, C. S., Mariñas, K. A., Manzano, H. M., Uminga, J. M., Verde, N. A., & Fuente, G. D. (2024). An Integrated Multi-Criteria Decision Analysis and Structural Equation Modeling Application for the Attributes Influencing the Customer's Satisfaction and Trust in E-Commerce Applications. *Sustainability, 16*(5), 1727. doi:10.3390/su16051727
10. Maghirang, S. M., LEON, M. P., Herradura, L. B., Alarcos4, K. J., Esler, F. J., Abustan, F. A., . . . Dimaculangan, D. N. (2024). Online Sellers' Compliance with the E-Commerce Act (Republic Act 8792) Of 2000 in Santa Cruz, Laguna. *ICONIC RESEARCH AND ENGINEERING JOURNALS , 7*(11), 272-277. Retrieved from https://www.irejournals.com/formatedpaper/1705784.pdf
11. Mata, S. S., & Mesias, A. A. (2024). Customer Satisfaction And E-Commerce Experience Of The Senior High School Students. *EPRA International Journal of Economics, Business and Management Studies (EBMS), 11*(4), 8-9. doi:10.36713/epra16317

12. Panganiban, E.B., & Bermusa, J. P. (2020). Simplified Barcode-Based Point Of Sales And Inventory Management System With Replenishment Decision. *International Journal Of Scientific & Technology Research, 9*(3), 597-600. Retrieved from https://www.researchgate.net/profile/Edward Panganiban/publication/363796625_Simplified_Barcode-Based_Point_Of_Sales_And_Inventory_Management_System_With_Replenishment_Decision/links/632e3cb786b22d3db4d9d381/Simplified-Barcode-Based-Point-Of-Sales-And-Inv
13. Perumal, D. a. (2023). An Employees Attendance Management System with QR Code . *Applied Information Technology And Computer Science, 4*(1), 1012-1026. doi:10.30880/aitcs.2023.04.01.058
14. Rey, W. P. (2024). https://dl.acm.org/doi/10.1145/3641181.3641201. *ICCDE '24: Proceedings of the 2024 10th International Conference on Computing and Data Engineering*, 42-50. doi:10.1145/3641181.3641201
15. Sabado, W. B. (2024). Acceptability of the Layer Poultry Farm Management System. *International Journal of Computing Sciences Research* , 2580-2591. doi:10.25147/ijcsr.2017.001.1.176
16. Salac, D. M., Salac, R. M., & Destreza, F. G. (2023). A Web-Based System for Enhanced Fishery Management and Monitoring With Analytics. *2023 24th International Arab Conference on Information Technology (ACIT)*, 1-7. doi:10.1109/ACIT58888.2023.10453912
17. Sangalang, R. M., Ancla, L. X., Chong, M. D., Morales, J. C., Caminong, J. M., & Tanpoco, M. R. (2024). Unlocking Internet of Things (IoT) for Enhanced Knowledge Management. *INTERNATIONAL JOURNAL OF MULTIDISCIPLINARY: APPLIED, 5*(1), 352=374. doi:10.11594/ijmaber.05.01.31
18. Soegoto, E. S., & Palalungan, A. F. (2020). Web Based Online Inventory Information System. *IOP Conference Series: Materials*, 1-6. doi:10.1088/1757-899X/879/1/012125
19. Sudirjo, F., Ratnawati, R., Hadiyati, R., Sutaguna, I. N., & Yusuf, M. (2023). The Influence Of Online Customer Reviews And E-Service Quality On Buying Decisions In Electronic Commerce . *Journal of Management and Creative Business*, 156-181. doi:https://doi.org/10.30640/jmcbus.v1i2.941
20. U, U., & Sujatha, D. S. (2020). Mobile Application Integrated with on SAP Business one Software based on Sales and Collection Management System. *International Journal of Engineering Research & Technology (IJERT), 9*(9), 400-402. Retrieved from https://www.ijert.org/research/mobile-application-integrated-with-on-sap-business-one-software-based-on-sales-and-collection-management-system-IJERTV9IS090289.pdf