Web-Based Computer Hardware Purchasing and Troubleshooting Assistant Management System

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Declaration

“I certify that this dissertation does not incorporate, without acknowledgement, any material previously submitted for a degree or diploma in any university and to the best of my knowledge and belief, it does not contain any material previously published or written by another person or myself except where due reference is made in the text. I also hereby give consent for my dissertation, if accepted, to be made available for photocopying and for interlibrary loans, and for the title and abstract to be made available to outside organizations.

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Abstract

The computer sales and servicing industry sells and services a wide range of computers, including desktops, laptops, notebooks, palmtops, and software, as well as peripherals such as printers, scanners, and keyboards. These products are typically purchased from domestic and foreign producers and distributors before being distributed to end-users such as households and companies.

Under the present system of U-Star Digital, customers used to come into the store and communicate their demands to the technician who built their computer. Customers arrived at the store, gave over the defective item or computer to the technicians, and then waited in their restroom until the task was finished. They presently use a phone-based and WhatsApp-based order system to take internet orders. There are no other options than bank transfers, and the customer must confirm the order with formal transaction documents. Due to a lack of adequate delivery information, customers are not given accurate delivery information.

The main purpose of the research is to create and develop an online system for managing computer hardware and services that will help the company and its employees become more popular with their customers and market their business via the internet.

For modeling, the system uses a client-server architecture and a non-object-oriented iterative software development process called Rational Unified Process. The system is designed using the Unified Modeling Language. For front-end development, PHP is utilized as the server-side programming language, along with HTML, JavaScript, and CSS. As an integrated development environment, the Apache NetBeans IDE is employed. The Apache web server is utilized, and MySQL is used to manage the database. Because this is a web-based system, it may be used with a web browser on any GUI-based OS platform. This system has offered to meet the needs of the client. It will be quite beneficial in archiving their commercial objectives.

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Chapter 1 – Introduction

1.1 Introduction

Many types of computers, including desktops, laptops, notebooks, palmtops, and software, as well as peripherals like printers, scanners, and keyboards, are sold and serviced in the computer sales and servicing industry. Before being supplied to end-users, such as households and businesses, these products are frequently purchased from domestic and international producers and distributors.

U-Star Digital is a renowned information and communication technology (ICT) company that has been in existence since 2010. They provide an unrivaled program and experience in ICT equipment repair, servicing, maintenance, and cleaning. They are depending on its technically advanced next-generation infrastructure to deliver best in class customer-aware and lifestyle-enhancing products and services that anticipate customers' needs.

1.2 Motivation of the Project

Customers used to come into the store and convey their needs to the technician who built their computer under the old system. Customers arrived at the shop, handed over the defective item or computer to the hardware professionals, and then waited in their restroom until the job was completed. To take online orders, they currently utilize a phone-based and WhatsApp-based order system. There are no other options than bank transfers, and the customer must send a legal transaction paperwork to confirm the order. Customers are not given accurate delivery information due to a lack of appropriate delivery information.

Customers are on the go, busy, and mobile, and they want frictionless and seamless services. By gaining a solid understanding of the needs of customers they are provided with a convenient product browsing experience, a simple payment system, and a delivery tracking system that allows customers to track their order as it arrives at their home. In addition, after the discussion with shop technicians, it was discovered that the average person has just around 25% of the average understanding of how to purchase items to

build a computer. Others require technical support to purchasing products. To use a virtual assistant to aid the rest of the team who are unfamiliar with computer hardware was decided. Besides, the consumer has less time to troubleshoot computer hardware. Our solution was to create an efficient repair management module with an appointment booking module as a computer hardware service provider to prevent consumers from wasting time at their repair location. It is more important to deal with the warranties of the items. Adding a warranty checking feature that allows consumers to check the warranty status of individual parts purchased from the shop is also concerned.

An outstanding solution for U-Star Digital to continue their greatness in the computer sales and maintenance sector in this digital age can be added. By the same token, while pursuing a Bachelor's degree in Information Technology, this effort would substantially assist me in improving my project management, system analysis, design, and development abilities.

1.3 Objectives of the Project

The study's overall goal is to build and develop an online system for managing computer hardware and services that will assist the company and its employees in becoming more popular with their consumers and marketing their business through the internet.

The study's particular objectives are as follows:

- Include a virtual computer hardware assistant to let customers design a custom computer even if they don't know anything about computer hardware.
- Using an automated question-based module to implement Online Troubleshooting and suggest appropriate items that are currently in stock.
- Including an appointment management module for taking care of appointments from clients who are having issues with their current stuff.
- Providing a feature-rich product browsing method, as well as a simple payment and shipping mechanism, to fulfill the customer's order.
- Implementing a warranty checker to whether the items bought by the customer are still covered under warranty.
- Inventory management, which makes it easy to create items for the store and receive automated alerts when stock levels are low.

- Generate a variety of reports and graphics, including sales and stock data, to assist management in making decisions.

1.4 Scope of the Project

Web-Based Computer Hardware Purchasing and Troubleshooting Assistant management system has a broad reach that includes the following points of view.

Computer Hardware Assistant Module: This module assists customers who are unfamiliar with computer hardware. It takes all the details of individual items and matches them with the next most appropriate piece, completing the assembly of an entire computer. After completing, customers have an option to check out the selected parts and make a payment to complete the assistant process.

Troubleshooting Assistant Module: With the help of this virtual assistant, consumers may troubleshoot their hardware failures without having to visit a computer repair shop, and they can order the right parts that the fault has accurately recognized. Customers can schedule an appointment with one of the computer hardware technicians if the problem is not resolved.

Appointment Booking Module: This module aids in the scheduling of appointments for clients who wish to troubleshoot with in-house computer hardware professionals.

Shopping Cart Module: This module allows users to find the entire store for items and create customer orders using a shopping cart.

Payment Module: This module provides up-to-date information on all payments made by customers, as well as advanced payment filtering options and having bank transfers, and cash on delivery options.

Inventory Management Module: Has the ability to handle the complete inventory. Individual items and corresponding categories, brands, and models can be added, deleted, and updated.

Warranty Management Module: This module aids in the generation of warranty alerts. It shows the status of the warranties of the goods and how much time is left on each item's warranty.

Delivery Management Module: This module contains all of the customer-created delivery records in the system. It displays the order tracking number as well as information about the courier company.

Invoice Generating Module: In the system, this module generates a variety of invoices. It's compatible with the payment, computer hardware assistant, and troubleshooting modules.

Backup and System Log Module: This Module enables the backup of system data and extracts the system log such that the system may be audited for any additional issues.

User Management Module: This module helps to manage all of the users of the system. It aids in the selection of the right individual for the right position.

Report Management Module: This module will make it possible to generate, preview, and print a variety of reports in order to continue with the success of the business.

1.5 Scope of the Project

The introduction is the first of six chapters in the dissertation. The contents of each chapter are listed below in brief.

Chapter 1 – Introduction

The project's goals and scope are explained in this chapter. It also explains the present system's flaws and what motivates the creation of this system.

Chapter 2 – Analysis

This chapter covers requirement collection strategies for both functional and non-functional requirements for a new system, as well as analysis approaches for understanding the existing system.

Chapter 3 – Design

The system's design, including database and user interface design, is covered in this chapter. To make the system's structure easier to understand, this chapter also contains top-level and module-level use cases.

Chapter 4 – Implementation

This chapter covers implementation technologies, hardware and software requirements, and the structure of key code modules.

Chapter 5 – Evaluation

This chapter explains how the system was tested using test cases and what the outcomes were. It describes the test cases and situations that were employed.

Chapter 6 – Conclusion

This chapter summarizes the lessons learned and suggests ways to enhance the system in the future.

Finally, a Glossary of Terms and General Index are included.