System Design and Implementation of a Web Application Named Online Laundry Management System

by

Md. Rasidul Haque
ID: CSE1901016136

Md. Abu Sayed
ID: CSE1801013049

Md. Sabbir Hossain
ID: CSE1903018087

Supervised by
Sadia Tasnim Barsha

Submitted in partial fulfillment of the requirements for the degree of Bachelor of Science in Computer Science and Engineering

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
SONARGAON UNIVERSITY (SU)

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APPROVAL

The project titled "**System Design and Implementation of a Web Application Named Online Laundry Management System**" submitted by Md. Rasidul Haque(CSE1901016136) Md. Abu Sayed(CSE1801013049) and MD Sabbir Hossain(CSE1903018087) to the Department of Computer Science and Engineering, Sonargaon University (SU), has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of Bachelor of Science in Computer Science and Engineering and approved as to its style and contents.

Board of Examiners

Supervisor

Sadia Tasnim Barsha
Lecturer & Exam Coordinator
Department of Computer Science and Engineering
Sonargaon University (SU)

Examiner 1

(Examiner Name and Signature)
Department of Computer Science and Engineering
Sonargaon University (SU)

Examiner 2

(Examiner Name and Signature)
Department of Computer Science and Engineering
Sonargaon University (SU)

Examiner 3

(Examiner Name and Signature)
Department of Computer Science and Engineering
Sonargaon University (SU)

DECLARATION

We hereby, declare that the work presented in this report is the outcome of the investigation performed by us under the supervision of **Sadia Tasnim Barsha, Lecturer & Exam Coordinator,** Department of Computer Science and Engineering, Sonargaon University, Dhaka, Bangladesh. We reaffirm that no part of this project has been or is being submitted elsewhere for the award of any degree or diploma.

Countersigned

(Sadia Tasnim Barsha)
Supervisor

Signature

Md.Rasidul Haque
ID: CSE1901016136

Md. Abu Sayed
ID: CSE1801013049

Md. Sabbir Hossain
ID: CSE1903018087

ABSTRACT

We present the design and implementation of a laundry management system (LMS) where people can easily send their cloths to laundry shop and get delivery. Laundry firms are usually faced with difficulties in keeping detailed records of customers clothing; this little problem as seen to most laundry firms is highly discouraging as customers are filled with disappointments, arising from issues such as customer clothes mix-ups and untimely retrieval of clothes. The aim of this application is to determine the number of clothes collected, in relation to their owners and don't need to go laundry shop, shop will manage everything, like collection and delivery system. Also customer's information is secured, as a specific id is allocated per registration to avoid contrasting information.

ACKNOWLEDGMENT

At the very beginning, we would like to express my deepest gratitude to the Almighty Allah for giving us the ability and the strength to finish the task successfully within the schedule time.

We are auspicious that we had the kind association as well as supervision of **Sadia Tasnim Barsha**, Lecturer and Exam Coordinator, Department of Computer Science and Engineering, Sonargaon University whose hearted and valuable support with best concern and direction acted as necessary recourse to carry out our project.

We would like to convey our special gratitude to **Brig. Gen. (Retd) Prof. Habibur Rahman Kamal, ndc, psc** Dean, Faculty of Science and Engineering for his kind concern and precious suggestions.

We are also thankful to all our teachers during our whole education, for exposing us to the beauty of learning.

Finally, our deepest gratitude and love to my parents for their support, encouragement, and endless love.

LIST OF ABBREVIATIONS

ANSI	American National Standards Institute
CSS	Cascading Style Sheets
ERD	Entity Relationship Diagram
HTML	Hyper-Text Markup Language
LMS	Laundry Management System
OLAP	Online Analytical Processing
RDBMS	Relational Database Management System
SVG	Scalable Vector Graphics
XHTML	Extensible Hyper Text Markup Language
XML	Extensible Markup Language
XUL	XML User Interface Language

TABLE OF CONTENTS

LIST OF TABLES

CHAPTER 1

INTRODUCTION

1.1 Background of the study

Today's modernization flow of the world has witnessed tremendous change in lifestyle of society. Computerized system in managing laundry has been well accepted especially in developing countries. This service is well accepted because it gives flexibility in terms of time for laundry management team to use it and this really helps them with their time management. The concept of computerized laundry management system in higher institution is being developed by Katsina State Laundry companies. Katsina state has a very large number of Laundry shops and Companies. Before this, the management of this company is constructing by using manual business process. All the information about the customer and staff are kept separately by using file system. It will cause the process of searching information take more time and quite difficult. Laundry management system (LMS) is new system that replaced the file system which most of laundry shop used. LMS is developed in order to ease the management in the laundry shop and to change the manual business process to the systematic business process. The LMS is developed for the managers and staffs that rolled onto the Laundry business.

1.2 Statement of the problem

The use of manual system also create an additional workload for staff to keep and obtain the customer and staff information because this information is kept in a different file.

Time Consumption: Manual systems are time consuming, as the business owner must keep track of Laundry sales on a daily basis, while updating the system manually at the end of the day.

Poor Communication: A manual Laundry system requires employees and managers to write down each time a services been processed in the Laundry. If one employee forgets to mention that the last cloths has been brought to the Laundry, a manager expects there is not cloths brought to the Laundry. Compared with a technical Laundry system, a manual Laundry system does not help the communication in the workplace.

Physical Counts: A manual Laundry system does not provide any number, as all numbers from the Laundry are gained through physical Laundry counts. One of the difficulties of 2 running a manual Laundry system is that physical Laundry counts must be performed frequently to control the services in the Laundry. This is time consuming and can cost the business money, if employees must come in to help out outside of business hours.

1.3 Aim and objectives

The aim of this project is to develop a system that can handle and manage the activities involved in a laundry in an efficient and reliable way. The objectives for this project are:

Computerized System: The proposed system will implement the computerized system

which can perform a better managing process for the laundry. The data of the laundry service and the customer will kept in the save manner without the problem of losing the data. System and User Privileges: System and user privileges will be implemented in the proposed system to setting up the user level for each system user. This function is to provide the limitation of system accessing. Increase time performance: The time management is very important for the laundry management to ensure the service performs in better condition and on time. In addition, by using the computerized system, the business process will be more effective and faster.

1.4 Justification of the study

The new system is design to solve problem affecting the manual system in use. It design to computerized information of the laundry thereby relieving both customer and services from much stress as experienced from the manual system. This will do the analyzing and storing of information either automatically or interactively, it will make use of computerized system to access the information. The proposed system will also have some features like.

This system will be web-based, so everyone can access easily. This system provides auto calculation of the payment. The system Provide functions of editing customer details. Its Provide functions of editing services details.

1.5 Scope

The target users for this system are Users and System Administrator.

Users: of Laundry has privileges to insert for service or laundry. User could be update their own profile.

Administrator: Administrator is a person who has responsibility to maintain the system. Administrator has all privileges to this system.

Email: This is an identification used by a person with access to a computer, network, or online service.

Password: This is a secret word or phrase that must be used to gain admission to a place.

Table: A basic unit of data storage in MySQL Database. Data is stored in rows and columns.

MySQL: MySQL is a relational database management system (RDBMS) developed by Oracle that is based on structured query language (SQL).A database is a structured collection of data. It may be anything from a simple shopping list to a picture gallery or a place to hold the vast amounts of information in a corporate network.

1.6 Outlines of the project

For effective comprehension, the project has been outlined into various chapters as follows:

CHAPTER ONE is the general introduction that consists of Introduction, Background of the study, statement of the problem, Objectives of the project, Scope and Limitations. CHAPTER TWO The Literature review comprises Introduction, System Study, Analysis of the Existing System, Problem of the Existing System and Proposed New System Solution.

CHAPTER THREE is the System Analysis and System Design, Table Design, Database Design, Input Design, and Entity Relationship Diagram.

CHAPTER FOUR focuses on the System Requirement and User-interface requirements, modeling the System.

CHAPTER FIVE is the Implementation of the system, include design and development.

CHAPTER SIX is the Summary, Recommendation and Conclusion. Also, this project outlined and the Reference.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction to laundry

Laundry is the washing of clothing and linens (according to Free Dictionary). Laundry processes are often done in a room reserved for that purpose; in an individual home this is referred to as a laundry room or utility room. An apartment building or student hall of residence may have a shared laundry facility such as a tvättstuga. A stand-alone business is referred to as a launderette (Laundromat). The material that is being washed, or has been laundered, is also generally referred to as laundry.

Laundry was first done in watercourses, letting the water carry away the materials which could cause stains and smells. Laundry is still done this way in some less industrialized areas and rural regions. Agitation helps remove the dirt, so the laundry is often rubbed, twisted, or slapped against flat rocks. Wooden bats or clubs could be used to help with beating the dirt out. These were often called washing beetles or bats and could be used by the waterside on a rock (a beetling-stone), on a block (battling-block), or on a washboard. They were once common across Europe and were also used by settlers in North America. Similar techniques have also been identified in Japan. Wooden or stone scrubbing surfaces set up near a water supply or portable washboards, including factory made corrugated glass or metal ones, gradually replaced rocks as a surface for loosening soil. Once clean, the clothes were wrung out — twisted to remove most of the water. Then they were hung up on poles or clotheslines to air dry, or sometimes just spread out on clean grass.

Before the advent of the washing machine, laundry was often done in a communal setting. In poor parts of the world today, laundry is still done beside a river or lake. Villages across Europe that could afford it built a wash-house. Water was channeled from a stream or spring and fed into a building, possibly just a roof with no walls. This wash-house usually contained two basins - one for washing and the other for rinsing - through which the water was constantly flowing, as well as a stone lip inclined towards the water against which the washers could beat the clothes. Such facilities were much more comfortable than washing in a watercourse because the launderers could work standing up instead of on their knees, and were protected from inclement weather. Also, they didn't have to go far, as the facilities were usually at hand in the village or at the edge of a town. Sometimes large metal cauldrons, often termed "coppers", even when not made of that metal, were filled with fresh water and heated over a fire; hot or boiling water being more effective than cold in removing dirt [2]. A poser could be used to agitate clothes in a tub [3]. These facilities were public and available to all families, and usually used by the entire village. Many of these

this tradition is reflected in the Catalan idiom "fer safareig" (literally, "to do the laundry"), which means to gossip.

European cities also had public wash-houses. The city authorities wanted to give the poorer population, who would otherwise not have access to laundry facilities, the opportunity to wash their clothes. Sometimes these facilities were combined with baths. The aim was to foster hygiene and thus reduce outbreaks of epidemics [4].

The mangle (or "wringer" in American English) was developed in the 19th century — two long rollers in a frame and a crank to revolve them. A laundry-worker took sopping wet clothing and cranked it through the mangle, compressing the cloth and expelling the excess water. The mangle was much quicker than hand twisting. It was a variation on the box mangle used primarily for pressing and smoothing cloth. Meanwhile, 19th century inventors further mechanized the laundry process with various hand-operated washing machines. Most involved turning a handle to move paddles inside a tub. Then some early 20th century machines used an electrically powered agitator to replace tedious hand rubbing against a washboard. Many of these were simply a tub on legs, with a hand-operated mangle on top. Later the mangle too was electrically powered, then replaced by a perforated double tub, which spun out the excess water in a spin cycle. Laundry drying was also mechanized, with clothes dryers. Dryers were also spinning perforated tubs, but they blew heated air rather than water [4].

2.2 Types of laundry

Laundry is categorized into different type due to their size, scale, products offered, Store Format and Trends While people use the terms "Industrial", ”Commercial” and "Residential" interchangeably to refer to laundry services, industry watchers offer more specific guidelines about different types of Laundry. "Industrial type" is on the larger end of this spectrum and carry a diverse mix of machines and general merchandise. Nomenclature is not always uniform Financial Institutions Fund places Wal-Mart in the same category as supermarkets and as well running laundry services [5].

1. **Industrial Laundry:** This type is for the big guys. Usually utilizes the use of a tunnel

washer and/or a heavy duty front load washer with big capacity, about 50kgs up per machine. It would require big investment. Clients to look for if you have this type of

laundry would be institutional like hospital, hotel, and motel. Spa and etc [5].

Operating a Commercial LaundryThere are two kinds:

i. Stand-alone - this means all your machines are within your business premises. In Asia,the lead time would be 1- 3 days to do the laundry. Other countries would be hours only ifthe units are coin operated.

ii. Pick-up Station - if you are still uncertain if you want to go full time and let go of yourhard earned money. You might want to be a partner of a stand-alone shop owner. The commission will have to be agreed upon by the two parties. By doing this kind, you are actually building up your own market. If you feel you have already enough market, then that would be the time to go Stand Alone.

2. Commercial Laundry: This makes use, of course. They are commonly found machinein the market. In Asia, the way the use it, people though they may be wrong, the built of the units are other than plastic. Mostly is aluminum with metal base. In countries other than Asia, the common brands are whirlpool, Maytag, Samsung etc. The target clients are mostly walk-ins.

3. Residential Laundry: As implied, the operation uses an ordinary unit which is usuallymade of plastic. Not durable for a 24/7 operation. Though if you are in a start-up and wouldlike to test market, then fine and go. However, it's not recommend the use of residential machines in a laundry business. Basically the type of Laundry is determined by the machines to be used and targeted clients [5].

2.3 Introduction to online marketing (e-commerce)

The internet marketing has been active for a long time now, the cumulative events occurring in online marketing is leading up to where we are now it have impacted the entire globe faster than any marketing revolution in history.

Over the past decade or so, supermarkets, laundries and other grocery retailers have continued to invest significantly into broadening their Internet presence and expanding the number of channels through which their goods or services are sold/made. Key Note estimates that sales of groceries transacted via online channels observed double-digit growth between 2007 and 2011, increasing by 127% overall.

One of the major trends to have driven growth within the Internet grocery market is m-commerce that is sales made via mobile channels, i.e. smart phones and tablet computers. The increasing popularity of smart phones and tablets among customers has resulted in a whole host of retailers investing significant sums of money into mobile sales platforms, as well as downloadable applications (apps'), which offer a more interactive and personalized shopping and Services experience.

Despite the growth of online grocers in recent years, online spending still accounts for a relatively small proportion of the overall Internet grocery market, with just 3.9% of total grocery sales estimated to have been transacted via e-commerce and m-commerce channels. However, the share of the total grocery market represented by online grocers has

Key Note expects the Internet grocery market to continue to go from strength to strength over the forthcoming years and has forecast year-on-year double-digit growth for 2012 to 2016. The rising uptake of Internet-connected mobile devices, such as smart phones and tablets, should boost services and sales transacted via m-commerce channels, while continued Government investment in the rollout of superfast broadband, alongside the introduction of the UK's first 4G mobile network, will also help to boost Internet activity and the use of e-commerce services throughout the country.

Online marketing can broadly be defined as the processes or areas involved in the running and operation of an organization that are electronic or digital in nature. These include direct business activities such as marketing, sales and human resource management but also indirect activities such as business process re-engineering and change management, which impact on the improvement in efficiency and integration of business processes and activities.

In 1994, spending for internet marketing totaled nearly nothing, but increased to over $300 million in 1995. Now, little more than a decade later, marketing spending and internet marketing business has exploded to nearly $200 billion [6]. Today, it’s hard to believe in having an organization which doesn’t have some kind of online presence.

When the internet was first introduced in the early 90s, it wasn’t considered to be an advertising medium at all. Instead, the internet was treated as a tool for exchanging emails and digital information, but wasn’t yet considered valuable for reaching customers. However, it wasn’t long before marketing pioneers began to see the potential for internet marketing business as millions of web surfers logging on each day to find valuable and relevant information. Within just a few years, informative and educational marketing, as well as graphically enticing banner ads began to be show up. It wasn’t long before results began to flood in which proved the value of the internet marketplace to even the most skeptical advertisers.

Factors that affect online marketing are as follows:

- Technological Factors
- Social Factors
- Economic Factors.

2.4 Benefits of e-commerce to customers

1. 24/7 access: It enables customers to shop or conduct other transactions 24 hours a day, all year round from almost any location. For example checking balances, making payments,obtaining travel tickets and other information. In one case a pop star set up web cameras in every room in his house, so that he could check the status of his home by logging onto theInternet when he was away from home on tour.

2. More choices: Customers not only have a whole range of services that they can choosefrom and customize, but also an international selection of staffs.

3. Price comparisons: Customers can select services around the world and conduct comparisons either directly by visiting different sites, or by visiting a single site where prices are aggregated from a number of providers and compared (for example www.moneyextra.co.uk for financial products and services).

4. Improved delivery processes: This can range from the immediate delivery of digitizedor electronic goods such as software or audio-visual files by downloading via the Internet, to the online tracking of the progress of packages being delivered by mail or courier

2.5 Benefits of E-Commerce to Society

It enables more flexible working practices, which enhances the quality of life for a whole host of people in society, enabling them to work from home. Not only is this more convenient and provides happier and less stressful working environments, it also potentially reduces environmental pollution as fewer people have to travel to work regularly.

Enables people in developing countries and rural areas to enjoy and access products, services, information and other people which otherwise would not be so easily available to them. Facilitates delivery of public services. For example, health services available over the Internet (online consultation with doctors or nurses), filing taxes over the Internet through the Inland Revenue website.

2.6 Limitations of E-Commerce

There was much hype surrounding the Internet and e-commerce over the last few years of the twentieth century. Much of it promoted the Internet and e-commerce as the panacea for all ills, which raises the question, are there any limitations of e-commerce and the Internet? Isaac Newton's 3rd Law of Motion, for every action there is an equal and opposite reaction suggests that for all the benefits there are limitations to e-commerce. These again will be dealt with according to the three major stakeholders' organizations, consumers and society.

This includes the following:

Rapidly evolving and changing technology, so there is always a feeling of trying to catch up and not be left behind. Under pressure to innovate and develop business models to exploit the new opportunities which sometimes leads to strategies detrimental to the organization. The ease with which business models can be copied and emulated over the Internet increases that pressure and curtails longer-term competitive advantage.

Facing increased competition from both national and international competitors often leads to price wars and subsequent unsustainable losses for the organization.

There are problems where older business systems cannot communicate with web based and Internet infrastructures, leading to some organizations running almost two independent systems where data cannot be shared. This often leads to having to invest in new systems or an infrastructure, which bridges the different systems. In both cases this is both financially costly as well as disruptive to the efficient running of organizations.

2.7 Limitations of E-Commerce to Customers

Computing equipment is needed for individuals to participate in the new 'digital' economy, which means an initial capital cost to customers.

A basic technical knowledge is required of both computing equipment and navigation of the Internet and the World Wide Web.

Cost of access to the Internet, whether dial-up or broadband tariffs.

Cost of computing equipment. Not just the initial cost of buying equipment but making sure that the technology is updated regularly to be compatible with the changing requirement of the Internet, websites and applications.

Lack of security and privacy of personal data. There is no real control of data that is collected over the Web or Internet. Data protection laws are not universal and so websites hosted in different countries may or may not have laws which protect privacy of personal data.

Physical contact and relationships are replaced by electronic processes. Customers are unable to touch and feel goods being sold on-line or gauge voices and reactions of human beings.

2.8 Limitations of E-Commerce to Society

Breakdown in human interaction: As people become more used to interacting electronically there could be an erosion of personal and social skills which might eventually be detrimental to the world we live in where people are more comfortable interacting with a screen than face to face.

Social division: There is a potential danger that there will be an increase in the social divide between technical haves and have-nots – so people who do not have technical skills become

unable to secure better-paid jobs and could form an underclass with potentially dangerous implications for social stability.

2.9 Introduction to management

The Term management is the organization and coordination of the activities of a business in order To achieve defined objectives. Management is often included as a factor of production Along with machines, materials, and money. According to the management guru Peter Drucker (1909-2005), the basic task of management includes both marketing and innovation. Practice of modern management originates from the 16th century study of low-efficiency and failures of certain enterprises, conducted by the English statesman Sir Thomas More (1478- 1535). Management consists of the interlocking functions of creating corporate policy and organizing, planning, controlling, and directing an organization's resources in order to achieve the objectives of that policy. The size of management can range from one person in a small organization to hundreds or thousands of managers in multinational companies. In large organizations, the board of directors defines the policy which is then carried out by the chief executive officer, or CEO. Some people agree that in order to evaluate a company's current and future worth, the most important factors are the quality and experience of the managers. Management involves the manipulation of the human capital of an enterprise to contribute to the success of the enterprise. This implies effective communication: an enterprise environment (as opposed to a physical or mechanical mechanism), implies human motivation and implies some sort of successful progress or system outcome. As such, management is not the manipulation of a mechanism (machine or automated program), not the herding of animals, and can occur in both a legal as well as illegal enterprise and environment. Based on this, management must have humans, communication, and a positive enterprise endeavor. Plans, measurements, motivational psychological tools, goals, and economic measures (profit, etc.) may or may not be necessary components for there to be management. At first, one views management functionally, such as measuring quantity, adjusting plans, meeting goals. This applies even in situations where planning does not take place. From this perspective, Henri Fayol (1841–1925) considers management to consist of six functions:

- Forecasting
- Planning
- Organizing
- Commanding
- Coordinating
- Controlling

Thomas More (1478- 1535). Management consists of the interlocking functions of creating corporate policy and organizing, planning, controlling, and directing an organization's resources in order to achieve the objectives of that policy. The size of management can range from one person in a small organization to hundreds or thousands of managers in multinational companies. In large organizations, the board of directors defines the policy which is then carried out by the chief executive officer, or CEO. Some people agree that in order to evaluate a company's current and future worth, the most important factors are the quality and experience of the managers. Management involves the manipulation of the human capital of an enterprise to contribute to the success of the enterprise. This implies effective communication: an enterprise environment (as opposed to a physical or mechanical mechanism), implies human motivation and implies some sort of successful progress or system outcome. As such, management is not the manipulation of a mechanism (machine or automated program), not the herding of animals, and can occur in both a legal as well as illegal enterprise and environment. Based on this, management must have humans, communication, and a positive enterprise endeavor. Plans, measurements, motivational psychological tools, goals, and economic measures (profit, etc.) may or may not be necessary components for there to be management. At first, one views management functionally, such as measuring quantity, adjusting plans, meeting goals. This applies even in situations where planning does not take place. From this perspective, Henri Fayol (1841–1925) considers management to consist of six functions:

2.10 Introduction to management

The word system in its meaning here, has a long history which can be traced back to Plato (Philebus), Aristotle (Politics) and Euclid (Elements). It had meant "total", "crowd" or "union" in even more ancient times, as it derives from the verb sunìstemi, uniting, putting together. "System" means "something to look at". You must have a very high visual gradient to have systematization. In philosophy, before Descartes, there was no "system". Plato had no "system".

Aristotle had no "system". In the 19th century the first to develop the concept of a "system" in the natural sciences was the French physicist Nicolas Léonard Sadi Carnot who studied thermodynamics. In 1824 he studied the system which he called the working substance, i.e. typically a body of water vapor, in steam engines, in regards to the system's ability to do work when heat is applied to it. The working substance could be put in contact with either a boiler, a cold reservoir (a stream of cold water), or a piston (to which the working body could do work by pushing on it). In 1850, the German physicist Rudolf Clausius generalized this picture to include the concept of the surroundings and began to use the term "working body" when referring to the system.

One of the pioneers of the general systems theory was the biologist Ludwig von Bertalanffy. In 1945 he introduced models, principles, and laws that apply to generalized systems or their subclasses, irrespective of their particular kind, the nature of their component elements, and the relation or 'forces' between them.

Significant development to the concept of a system was done by Norbert Wiener and Ross Ashby who pioneered the use of mathematics to study systems.

In the 1980s the term complex adaptive system was coined at the interdisciplinary Santa Fe Institute by John H. Holland, Murray Gell-Mann and others.

System is therefore an organized, purposeful structure that consists of interrelated and interdependent elements (components, entities, factors, members, parts etc.). These elements continually influence one another (directly or indirectly) to maintain their activity and the existence of the system, in order to achieve the goal of the system.

All systems have inputs, outputs and feedback mechanisms, maintain an internal steady-state (called homeostasis) despite a changing external environment, display properties that are different than the whole (called emergent properties) but are not possessed by any of the individual elements, and have boundaries that are usually defined by the system observer. Systems underlie every phenomenon and all are part of a larger system. Systems stop functioning when an element is removed or changed significantly. Together, they allow understanding and interpretation of the universe as a meta-system of interlinked wholes, and organize our thoughts about the world.

2.11 Laundry management using katsina state case study

Katsina is the leading retailer across Nigeria and is the brand of choice for many consumers across the African continent. Katsina's large following of loyal customers can be attributed to their ability to offer the widest range of products and the highest standards of goods and services which is a necessary factor in building a formidable laundry services. Katsina works hand in hand with many local Nigerian laundries, processing services in bulk in order to pass the cost savings onto you as the customer. So this way, you can continue to enjoy a world class laundry services experience whilst saving money. There are series of comparison between the prices of Katsina and some other local government laundries which shows the huge standard created by the Laundry.

2.12 Proposed System

The Laundry Management System is designed for any Laundry firm to replace their existing manual, paper based system. The new system is in form of a computerized system to control the following; customer information, products, services, users, carts and receipt. These services are to be provided in an efficient, cost effective manner, with the goal of reducing the delay and resources currently required for such tasks as clothes details are bounded to a particular customer with a given id. Since the existing system makes use of tedious administrative tasks, lots paper work and time, in which full information cannot be gotten from busy customers [7].

2.13 Existing System over Proposed System

The proposed system seeks to simplify the users operation. The stages involved in the registration process must be reduced to nearest minimum if it is to be faster and more convenient. The crude way of registration using paper based processes of registration are time consuming and expensive. The customers are rest assured security and availability of their clothing as at when due, as information are protected using a specific Id. An increase in the number of customer will obviously mean more paper work and less efficiency of the existing system. Hence, many Laundry firms are finding the proposed system a better and more effective way of catering for the inconvenience and inefficiency of the existing system of registration. The proposed system for laundry firms plays a vital role in the transition and if effectively implemented, it should be able to:

Reduce paper work and redundancy thereby improving productivity and lowering cost of printing and purchasing registration materials annually. It aids the administrative in data management of customers, by allowing the user to search for any customer with ease [7].

CHAPTER 3

SYSTEM ANALYSIS & DESIGN

3.1 Analysis of the existing system

The current system operates manual laundry management system, from services, and managing customer's record etc. recorded in a book. This is faced with errors, incompleteness, and insufficient data for analysis. Information regarding services of the laundry are still in black and white which is not properly organized and managed. From the staffs to customer bills, receipts of services are recorded in a book but further operations are not being properly handled. As a result it is difficult in processing, updating and managing.

The Factors For These Difficulties Are:

1. Labor-Intensive

A manual Laundry management systems is that they can be highly labor-intensive to operate. They require continuous monitoring to ensure that each transaction is accounted for and that services are maintained at the appropriate module. It is also more difficult to share service information throughout the business, because the lack of computerization makes accessing service records a more cumbersome process. The time spent monitoring service application could be used on more productive activities for the business.

2. Human Error

A manual Laundry management system relies heavily on the actions of people, which increases the possibility of human error. People might forget to record a transaction or simply miscount the number of goods. This results in needless additional orders that increase the company's inventory carrying costs and use up precious storage space. Inaccurate physical counts could also result in not ordering enough of a clothes, meaning the business could run out of a crucial item at the wrong time.

3. Time Wasting

A manual Laundry management system has a huge tendency of time wasting as the staff could have a lot to tackle while many customer seeks attention and this is really affecting the business.

3.2 Describtion/analysis of the new system

To reduce the shortcomings of the existing system there is a need to develop a new system that could upgrade the status of the current system which is manual and slow to the system that will be automatic and fast. requirements of the customer and the workers, the system

Qualities Of The New System

- Reduction in processing cost.
- Error reduction.
- Automatic calculation.
- Improve reporting.
- Automatic production of the documents and Reports.
- Faster response time.
- Reduced dependency.
- Improves resource uses.
- Reduction in use of the paper.
- Reduction in Man Power.

The system is a web based application. The system will provide the following Main features:

- Calculate the bill.
- Store how many laundry are served.
- Store laundries and their prices and with other information.
    - Print out reports as receipt.The System Can't do some functions:
- Change the Graphical User Interface of the system.
- Manage promotion

3.3 System design

System Design is one of the tasking sections of the Programming. In this section of the project many previews are going to be seen and we are gradually getting close to the new system. System 20 design is a transition from a user-oriented document to a document oriented to programmers or database personnel. The system design is structured into the following parts:

- Output design
- Input design
- Entity relationship diagram (ERD-Design).
- Database design
- System Flowchart

3.4 Output design

In a very competitive world that we are, a good and attractive GUI is needed to make customers and administrators enjoy the services of a system, which would serve as a system to increase productivity in laundry business below are previews of the output

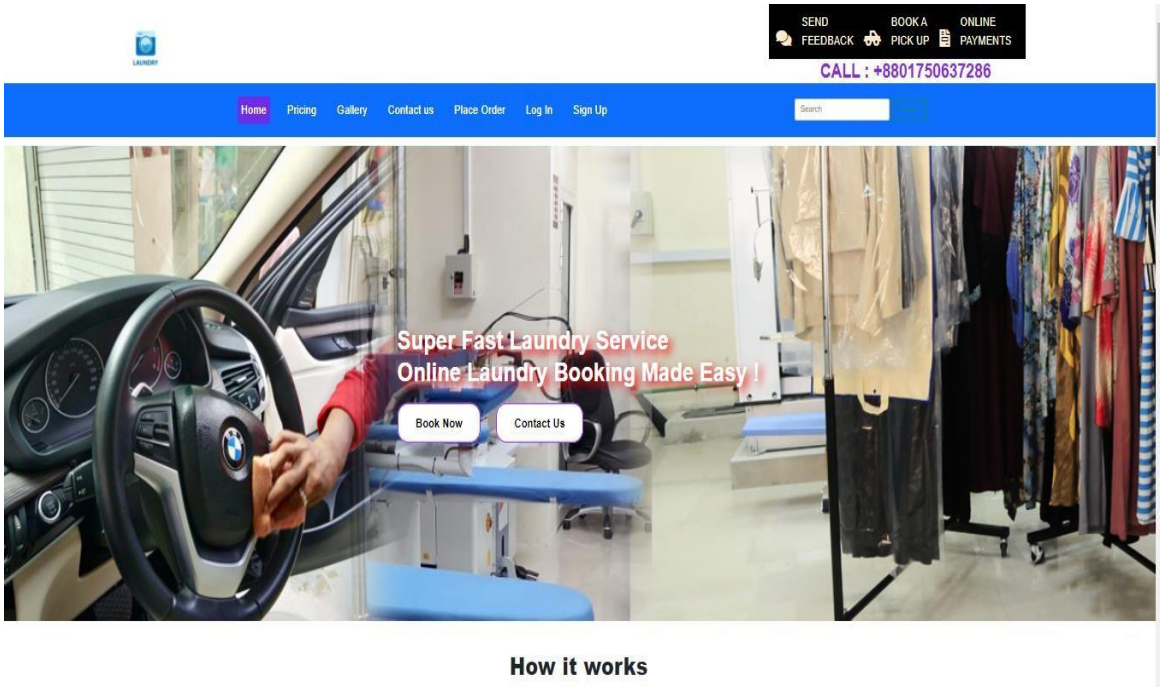


Figure 3.1: Home page of Laundry Management System

This laundry management system has three main parts Collection, Wash and Iron as well as Delivery. Figure 3.1 describes the process of this management system.

Figure 3.2: Preview of process.

Figure 3.3 shows contact page of this system. Anyone can send message to the administrator from here.

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	id	bigint(20)		UNSIGNED	No	None		AUTO_INCREMENT	Change Drop More
2	name	varchar(255)	utf8mb4_unicode_ci		No	None			Change Drop More
3	price	int(11)			No	None			Change Drop More
4	status	varchar(255)	utf8mb4_unicode_ci		No	None			Change Drop More
5	created_at	timestamp			Yes	NULL			Change Drop More
6	updated_at	timestamp			Yes	NULL			Change Drop More

Figure 3.3: Preview Laundry Database Table

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	id	bigint(20)		UNSIGNED	No	None		AUTO_INCREMENT	Change Drop More
2	name	varchar(255)	utf8mb4_unicode_ci		No	None			Change Drop More
3	email	varchar(255)	utf8mb4_unicode_ci		Yes	NULL			Change Drop More
4	phone	varchar(255)	utf8mb4_unicode_ci		No	None			Change Drop More
5	district_id	varchar(255)	utf8mb4_unicode_ci		No	None			Change Drop More
6	address	varchar(255)	utf8mb4_unicode_ci		No	None			Change Drop More
7	password	varchar(255)	utf8mb4_unicode_ci		No	None			Change Drop More
8	created_at	timestamp			Yes	NULL			Change Drop More
9	updated_at	timestamp			Yes	NULL			Change Drop More

Figure 3.4: Preview Laundry Database Table

CHAPTER 4

HARDWARE & SOFTWARE REQUIRMEN

4.1 Graphical user interface

Hyper-Text Markup Language (HTML) is the basic language used for creating web pages and other information that can be displayed in a web browser. The purpose of a web browser is to read HTML documents and compose them into visible or audible web pages. The browser doesn't display the HTML tags, but uses the tags to interpret the concept of the page.

4.2 Hyper-text markup language

HTML elements forms the building blocks of all websites, allows images and objects to be embedded and can to be used to create interactive forms. It provides a means to create structured documents by denoting structural semantics for txt such as heading, paragraphs, lists, links, quotes and so on. It can also embed scripts written in languages such as JavaScript which affect the behavior of HTML web pages.

HTML consists of several key components, including tags and their attributes, character based data types, character references and entity references. An important component is the document type declaration, which triggers standards mode rendering.

4.3 Cascading style sheets

CSS is a style sheet language used for describing the look and formatting of a document written in a markup language. While most often used to style web pages and interfaces written in HTML and XHTML, the language can be applied to any kind of XML document, including plain XML, SVG and XUL. CSS is designed basically to enable the separation of document content from document presentation, including elements such as layout, colors and fonts. This improves content accessibility, provides flexibility and control in the specification of presentation characteristics, enable multiple pages to share

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	id	bigint(20)		UNSIGNED	No	None		AUTO_INCREMENT	Change Drop More
2	name	varchar(255)	utf8mb4_unicode_ci		No	None			Change Drop More
3	email	varchar(255)	utf8mb4_unicode_ci		Yes	NULL			Change Drop More
4	phone	varchar(255)	utf8mb4_unicode_ci		No	None			Change Drop More
5	district_id	varchar(255)	utf8mb4_unicode_ci		No	None			Change Drop More
6	address	varchar(255)	utf8mb4_unicode_ci		No	None			Change Drop More
7	password	varchar(255)	utf8mb4_unicode_ci		No	None			Change Drop More
8	created_at	timestamp			Yes	NULL			Change Drop More
9	updated_at	timestamp			Yes	NULL			Change Drop More

Figure 3.7: Preview

CSS can also allow the same markup page to be presented in different styles for different rendering methods such as on-screen, in print and on Braille-based, tactile devices. CSS specifies a priority scheme to determine which style rules apply if more than one rule matches against a particular element. Priorities are calculated and assigned to rules, so that the results are predictable.

4.4 Client-side script (javascript)

JavaScript is a new scripting language for Web Pages. Scripts written with java script can be embedded into your HTML pages. With java script you have many possibilities for enhancing your HTML page with interesting elements. For example you are able to respond to user initiated events quite easily. Some effects that are now possible with java script were some time ago only possible with CGI. So you can create really sophisticated pages with the helps of java script on the Internet.

4.5 SQL (structured query language)

To work with data in a database, you must use a set of commands and statements (language) defined by the DBMS software. There are several different languages that can be used with relational databases; the most common is SQL. Both the American National Standards Institute (ANSI) and the International Standards Organization (ISO) have defined standards for SQL. Most modern DBMS products support the Entry Level of SQL-92, the latest SQL standard (published in 1992).

4.6 SQL server features

Microsoft SQL Server supports a set of features that result in the following benefits:

- Ease of installation, deployment, and use**:** SQL Server includes a set of administrative and development tools that improve your ability to install, deploy, manage, and use SQL Server across several sites.
- Scalability: The same database engine can be used across platforms ranging from laptop computers running Microsoft Windows® 95/98 to large, multiprocessor servers running Microsoft Windows NT®, Enterprise Edition.
- Data warehousing**:** SQL Server includes tools for extracting and analyzing summary data for online analytical processing (OLAP). SQL Server also includes tools for visually designing databases and analyzing data using Englishbased questions.
- System integration with other server software: SQL Server integrates with e-mail, the Internet, and Windows.

4.7 Laravel

Laravel is an open-source PHP framework, which is robust and easy to understand. It follows a model-view-controller design pattern. Laravel reuses the existing components of different frameworks which helps in creating a web application. The web application thus designed is more structured and pragmatic [8].

Laravel offers a rich set of functionalities which incorporates the basic features of PHP frameworks like CodeIgniter, Yii and other programming languages like Ruby on Rails. Laravel has a very rich set of features which will boost the speed of web development.

If you are familiar with Core PHP and Advanced PHP, Laravel will make your task easier. It saves a lot time if you are planning to develop a website from scratch. Moreover, a website built in Laravel is secure and prevents several web attacks.

4.8 Advantages of Laravel

Laravel offers you the following advantages, when you are designing a web application based on it −

- The web application becomes more scalable, owing to the Laravel framework.
- Considerable time is saved in designing the web application, since Laravel reusesthe components from other framework in developing web application.
- It includes namespaces and interfaces, thus helps to organize and manage resources.

4.9 Composer

Composer is a tool which includes all the dependencies and libraries. It allows a user to create a project with respect to the mentioned framework (for example, those used in Laravel installation). Third party libraries can be installed easily with help of composer.

All the dependencies are noted in composer.json file which is placed in the source folder.

4.10 Artisan

Command line interface used in Laravel is called Artisan. It includes a set of commands which assists in building a web application. These commands are incorporated from Symphony framework, resulting in add-on features in Laravel 5.1 (latest version of Laravel 8).

4.11 Features of Laravel

Laravel offers the following key features which makes it an ideal choice for designing web applications.

4.12 Modularity

Laravel provides 20 built in libraries and modules which helps in enhancement of the application. Every module is integrated with Composer dependency manager which eases updates.

4.13 Testability

Laravel includes features and helpers which helps in testing through various test cases. This feature helps in maintaining the code as per the requirements.

4.14 Routing

Laravel provides a flexible approach to the user to define routes in the web application. Routing helps to scale the application in a better way and increases its performance.

4.15 Configuration Management

A web application designed in Laravel will be running on different environments, which means that there will be a constant change in its configuration. Laravel provides a consistent approach to handle the configuration in an efficient way.

4.16 Query Builder and ORM

Laravel incorporates a query builder which helps in querying databases using various simple chain methods. It provides ORM (Object Relational Mapper) and Active Record implementation called Eloquent.

4.17 Schema Builder

Schema Builder maintains the database definitions and schema in PHP code. It also maintains a track of changes with respect to database migrations.

4.18 Template Engine

Laravel uses the Blade Template engine, a lightweight template language used to design hierarchical blocks and layouts with predefined blocks that include dynamic content.

4.19 E-mail

Laravel includes a mail class which helps in sending mail with rich content and attachments from the web application.

4.20 Authentication

User authentication is a common feature in web applications. Laravel eases designing authentication as it includes features such as register, forgot password and send password reminders.

4.21 Redis

Laravel uses Redis to connect to an existing session and general-purpose cache. Redis interacts with session directly.

4.22 Queues

Laravel includes queue services like emailing large number of users or a specified Cron job. These queues help in completing tasks in an easier manner without waiting for the previous task to be completed.

4.23 Event and Command Bus

Laravel 5.1 includes Command Bus which helps in executing commands and dispatch events in a simple way. The commands in Laravel act as per the application's lifecycle.

4.24 System requirements

System requirement is a description of the needs of a user for an information system. The unique requirements of a user are identified here.

4.25 User requirements

To gain access to the laundry management system resources, the user would need:

- A personal computer
- A unique email
- A genuine password

4.26 User -interface requirements

User interfaces are the registration pages developed for the users to register and manage the items brought. They consist of the following:

- Login page (Email and password)
- Product page
- Place A laundry service
- View Profile
- View History

4.27 Modeling the system

The laundry management system flow diagram is shown below:

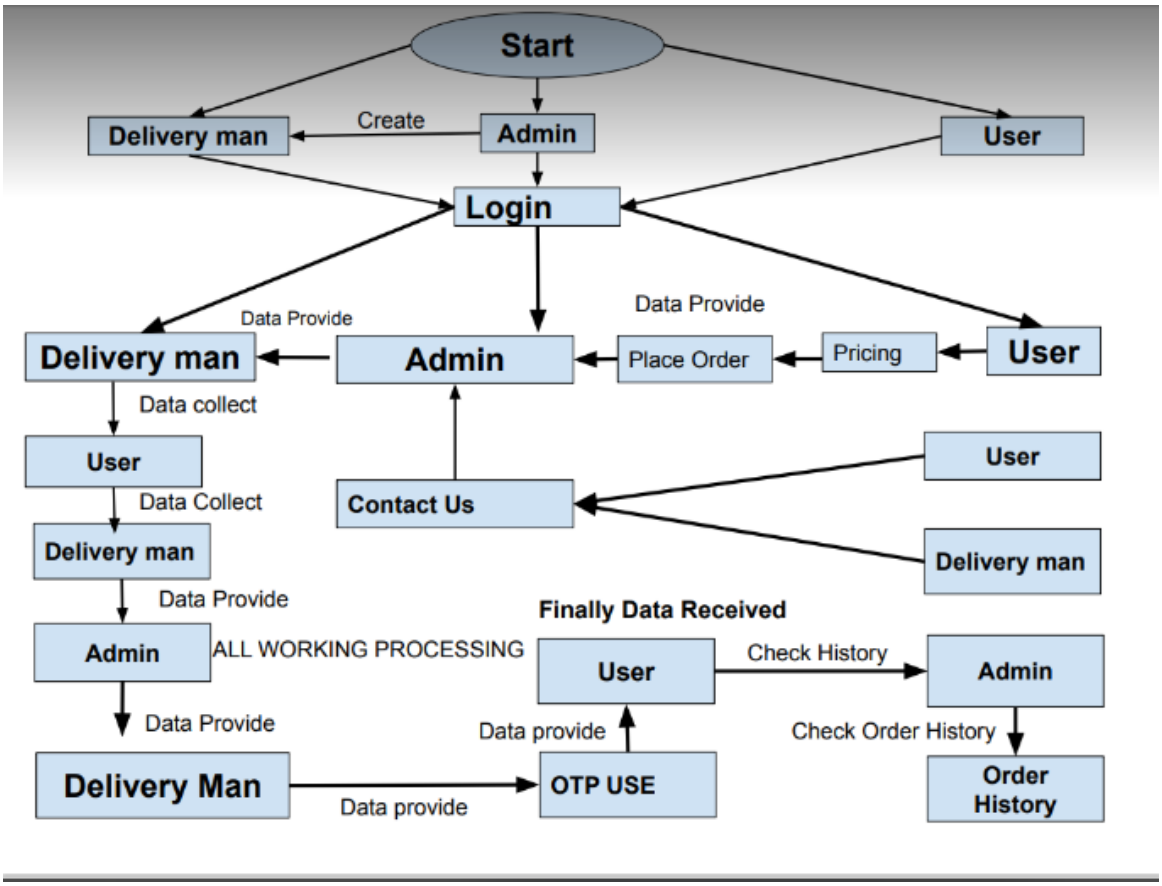


Figure 5.4.: The laundry management system flow diagram

The laundry management system E-R diagram is shown below:

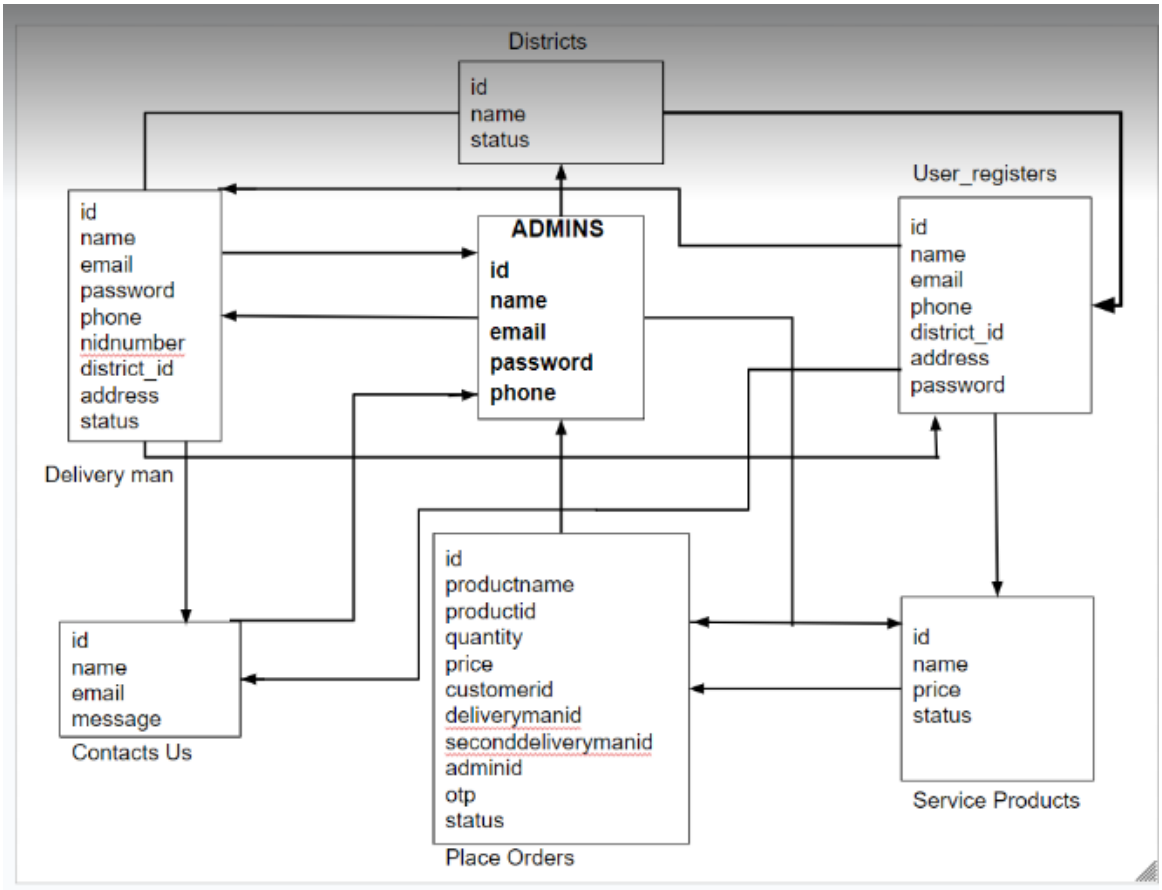


Figure 5.4.: The lau

CHAPTER 5

DESIGN & IMPLEMENTATION

5.1 Introduction

Design implementation refers to the real live running of the designed program. This section consists of the program modules, showing what they do, and how the system can be deployed.

5.2 User

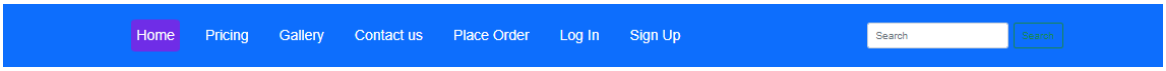


Figure 5.1: Frontend menu Bar.

Figure 5.1 shows menu bar for front-end users. Figure 5.2 represents user profile,who is already a registered user. And he can edit his profile.

Figure 5.2: User profile view.

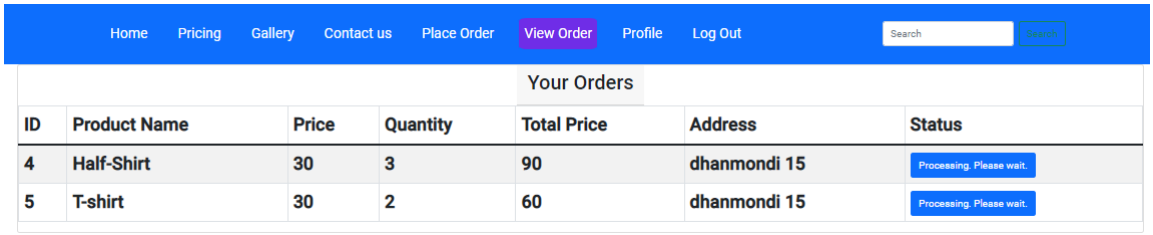


Figure 5.3: Order view.

describes the order list. This view for registered customer, who placed a laundry. In shows the laundry prices. People can see the price for laundry.

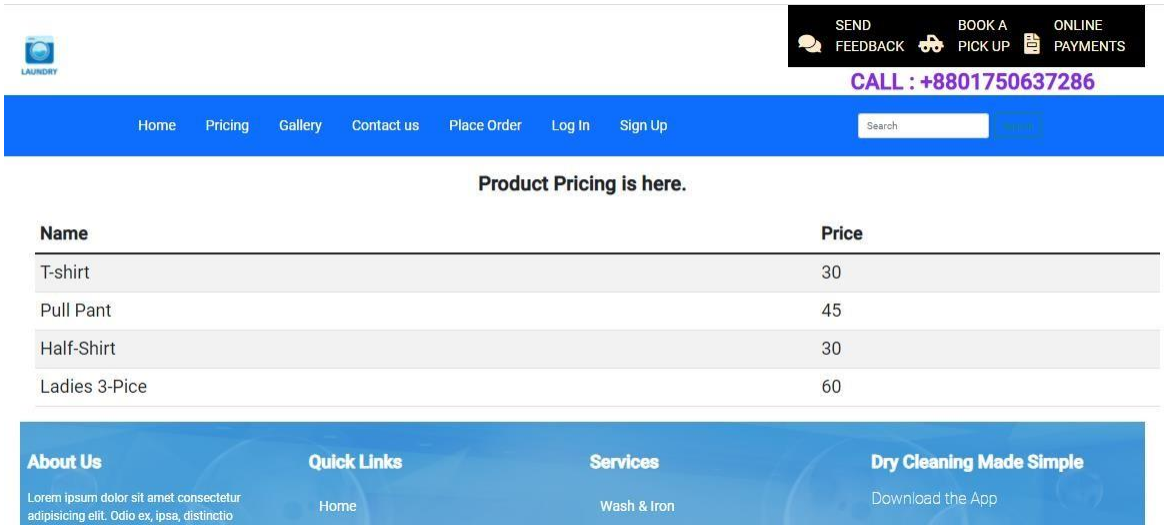


Figure 5.4.: Price view.

5.3 Administrator

Here we can see some administrator view. In figure 5.4 shows administrator login view. And 5.5 shows Dashboard. On dashboard administrator can view different information.

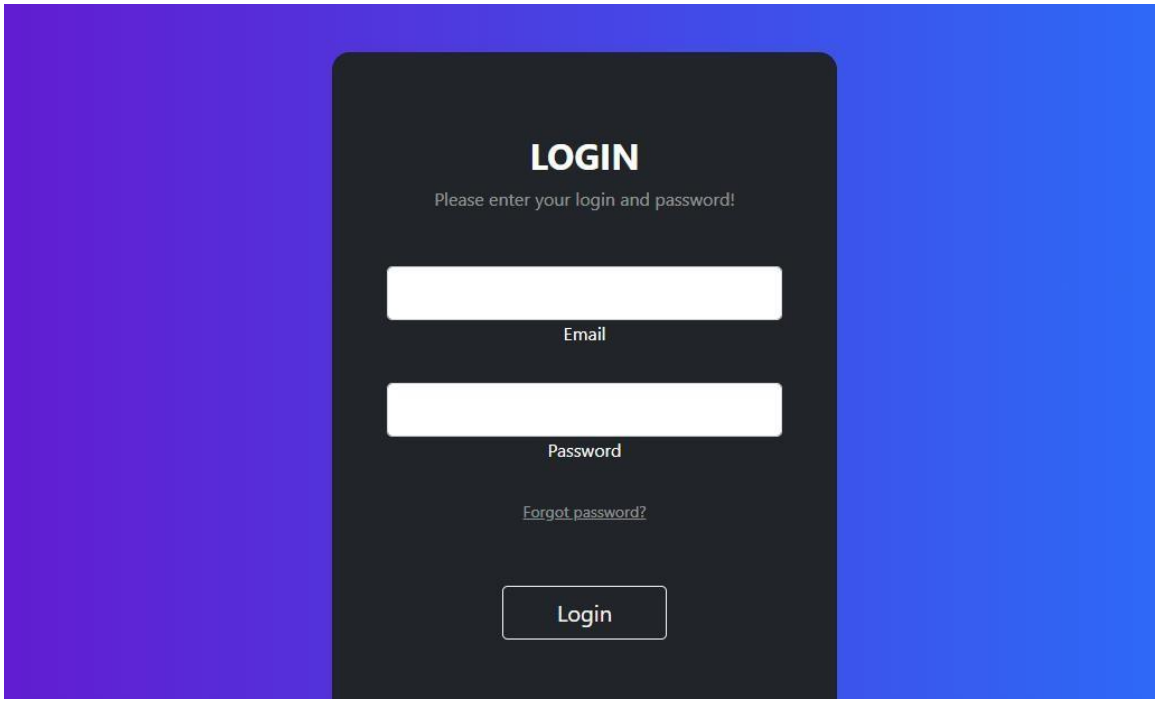


Figure 5.5: Administrator The laundry management system

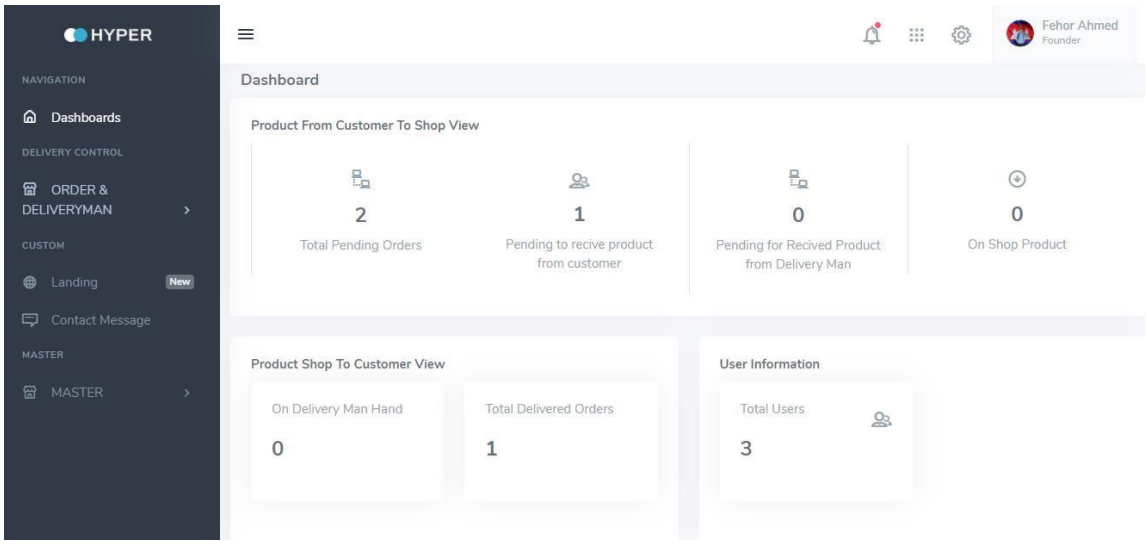
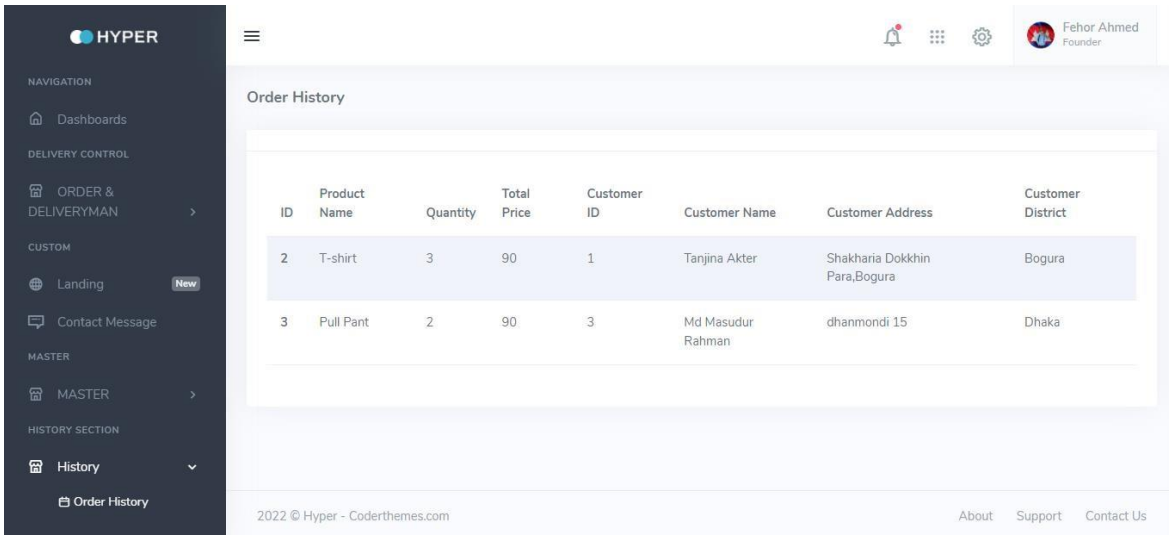


Figure 5.6: Administrator Dashboard view.



8

Figure 5.7: Order History.

Figure 5.7 represents total order list which successfully delivered to the customer. In figure 3.7 shows the contact message, which comes from front-end users or viewers. Administrator can delete this messages.

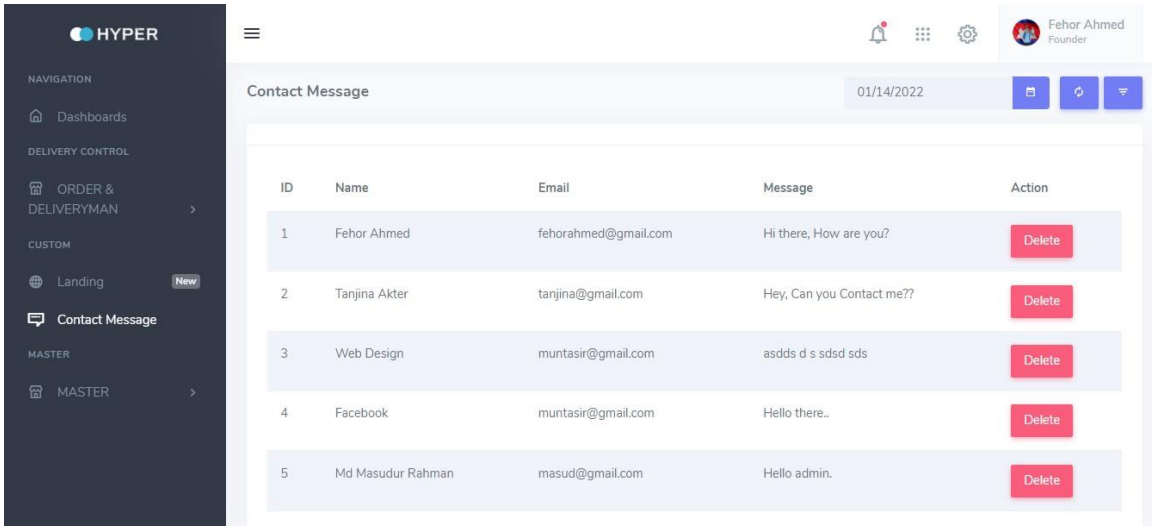
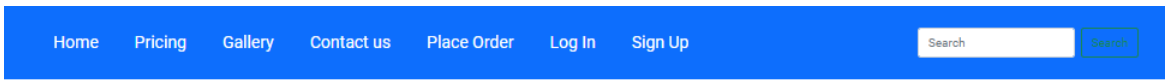


Figure 5.8: Contact Message view.

5.5 Delivery man

We can see delivery man's view in this section figure. Figure 5.9 shows the login page for delivery man. Delivery man need to enter their valid email and password, then he can access his collection or delivery view page. In figure 5.9 demonstrates his collection or delivery page view. He also can view his collection or delivery history from history page.



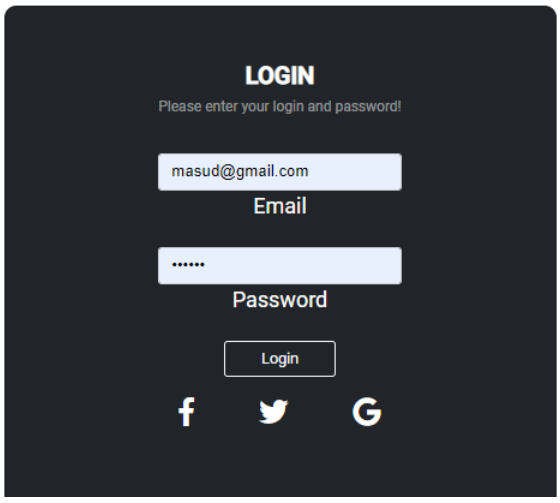


Figure 5.9: Delivery Man Log in Page view.

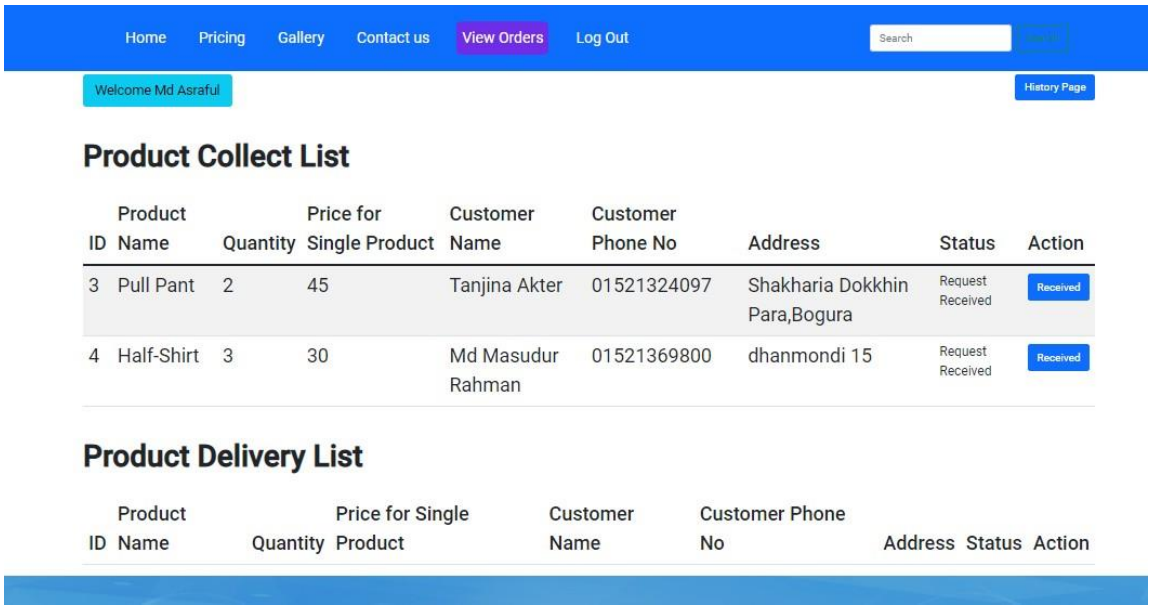


Figure 5.10: Collection list and Delivery list page.

CHAPTER 6

CONCLUSION & RECOMANDATION

6.1 Summary

The laundry management system need to be computerized to reduce human errors and increase the efficiency. The proposed laundry management system in this project is computerized management system developed to maintain all the daily work of laundry. Laundry management system are designed to store all information about customers and services offered. The focus of this project is to lessen human efforts and encourage efficient record keeping.

6.2 Conclusion

In conclusion, Laundry Management System has to do with making appropriate effort to stop the rising problem to all manual laundry operation in order to enhance the operation of such laundry. In this project, the software or system that can be used to aid all laundries that is still operating manually have been successfully developed. The software can be implementing in all types of laundry as mentioned in the second chapter. The software has a large memory of storing all the services in the laundries and also keeping record it is highly effective and accurate.

6.3 Recommendation

In the development of this laundry management system, I will recommend that if there is going to be any modification the new writer should endeavor to improve on the limitations such as changing the graphical user interface of the system to further increase the system architecture and to satisfy users need more for writing of the source code, MySQL for the database should be used and visual basic for application for codes. There are some limitations during the development of this laundry management system that will require improvement as stated in previous chapter writer should put them in mind and face it as a challenge and not a problem.

6.4 Problem encountered

A lot of challenges surfaced during the development of this incredible application though it tried stopping this project but the doggedness and consistency of the writer was in match with the challenge The following are some of the problems or challenges encountered.

- Expensive internet facility.
- Understanding the Laravel concept, PHP concept and MySQL database.

6.5 Further research

In the future, the mobile application of laundry management system will be developed and the following components can be added to this current system in order to improve the effectiveness and efficiency of the system, which includes:

- An advanced password system that will be embedded into all login pages toincrease the security of the system.
- A good internet backup should be automated after everyday services.
- Internet Transactions should be allowed

REFERENCES

[1][Zalilawati binti Ghazhali (2008) “Design and Implementation of a Laundry Management System” Universiti Teknical Malaysia Maleka, Malaysia

[2]https://www.oed.com (last accessed on 03-01-2022)

[3]http://www.oldandinteresting.com/history-of-laundry.aspx (last accessed on 04-01-2022)

https://en.wikipedia.org/wiki/Laundry (last accessed on 05-01-2022)

[4]Yung, Judy; Chang, Gordon H.; Lai, Him Mark, eds. (2006), "Declaration of the Chinese HandLaundry Alliance”, Canadian Museum of Civilization, Beijing

[5]Forrester Research

[6]Shoewu, O., Makanjuola, N.T., Phillips, D.A. and Emmanuel, A. (2016) “Design and Implementation of a Laundry Management System”. Pacific Journal of Science and Technology. 17(2):197-204.

[7]https://www.tutorialspoint.com/laravel/laravel_overview.htm (last accessed on 06-01-2022)