BILLING AND INVENTORY MANAGEMENT SYSTEM WEBSITE

ANYERP 1.0

-By BinaryBeast

ABSTRACT

Shops will fall short of its purpose without proper and effective billing system of its daily sales. Billing system are ways of management and monitoring all of sales. billing in smaller shops are done manually, but as a business grows with its increasing number of locations, department, items and transactions, making invoices and managing orders by manual means is almost unworkable.

The retail industry needs a simple yet advanced tools to manage their business needs. AnyERP introduced new functions focusing on the needs of the retail industry and whether you run a local store or a large business.

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LIST OF ABBREVIATION

JS	JavaScript
HTML	Hyper Text Markup Language
CSS	Cascading Style Sheets

CHAPTER 1: INTRODUCTION

1.0 INTRODUCTION

ANYERP is an online web-based billing and inventory management system which integrates the product analysis and the history of the bill generated in a period. It will reduce the human efforts in maintaining invoice logs and the product details including the price, product code, taxes and all others details. It can be easily accessible from every platform such as tablets, mobiles, computers etc dur to its responsive behaviour.

1.1 What is Frontend and Backend

The front end of a website is the part that users interact with. Everything that you see when you're navigating around the Internet, from fonts and colors to dropdown menus and sliders, is a combo of HTML, CSS, and JS being controlled by your computer's browser. Examples of front-end technologies are HTML, CSS and JS Framework.

So, what makes the front end of a website possible? Where is all that data stored? This is where the back end comes in. The back end of a website consists of a server, an application, and a database. A back-end developer builds and maintains the technology that powers those components which, together, enable the user-facing side of the website to even exist in the first place. Examples of back-end technologies are Django, Ruby, Java and much more.

1.1.2 Django Framework

Django is a high-level Python Web framework that encourages rapid development and clean, pragmatic design. Built by experienced developers, it takes care of much of the hassle of Web development, so you can focus on writing your app without needing to reinvent the wheel. It's free and open source.

1.1.2.1 Model

Model is a single, definitive data source which contains the essential field and behavior of the data. Usually one model is one table in the database. Each attribute in the model represents a field of a table in the database. Django provides a set of automatically-generated database application programming interfaces (APIs) for the convenience of users.

1.1.2.2 View

View is short form of view file. It is a file containing Python function which takes web requests and returns web responses. A response can be HTML content or XML documents or a "404 error" and so on. The logic inside the view function can be arbitrary as long as it returns the desired response. To link the view function with a particular URL we need to use a structure called URL conf which maps URLs to view functions.

1.1.2.3 Template

Django's template is a simple text file which can generate a text-based format like HTML and XML. The template contains variables and tags. Variables will be replaced by the result when the template is evaluated. Tags control the logic of the template. We also can modify the variables by using filters. For example, a lowercase filter can convert the variable from uppercase into lowercase.

1.1.3 HTML CSS AND JS

HTML: - Hypertext Markup Language (HTML) is the standard mark-up language for documents designed to be displayed in a web browser. It can be assisted by technologies such as Cascading Style Sheets (CSS) and scripting languages such as JS.

CSS: - Cascading Style Sheets is a style sheet language used for describing the presentation of a document written in a mark-up language such as HTML.

JS: - JS, often abbreviated as JS, is a programming language that conforms to the ECMAScript specification. JS is high-level, often just-in-time compiled, and multi-paradigm. It has curly-

bracket syntax, dynamic typing, prototype-based object-orientation, and first-class functions.
External Libraries

1.1.4 External Libraries

OPENPYXL: - openpyxl is a Python library to read/write Excel 2010 xlsx/xlsm/xltx/xltm files. It was born from lack of existing library to read/write natively from Python the Office Open XML format. All kudos to the PHPExcel team as openpyxl was initially based on PHPExcel.
BOOTSTRAP: - Bootstrap is a free and open-source CSS framework directed at responsive, mobile-first front-end web development. It contains CSS- and JS-based design templates for typography, forms, buttons, navigation, and other interface components.

CHART JS: - Simple, clean and engaging HTML5 based JS charts. Chart.js is an easy way to include animated, interactive graphs on your website for free.

1.1.5 SQL LITE3

SQLite is a relational database management system contained in a C library. In contrast to many other database management systems, SQLite is not a client–server database engine. Rather, it is embedded into the end program.

1.1.6 Python

Python is the language used to build the Django framework. It is a dynamic scripting language similar to Perl and Ruby. The principal author of Python is Guido van Rossum. Python supports dynamic typing and has a garbage collector for automatic memory management. Another important feature of Python is dynamic name solution which binds the names of functions and variables during execution.

1.2 MOTIVATION

Inventory management saves you money and allows you to fulfil your customers' needs. In other words, it enables successful cost control of operations. Knowing what you have, what is in your warehouse, and how to manage the supply chain properly is the backbone of business. But offline software or records makes it a difficult task. So, this website provides transparency into quantities, locations and other aspects that are key for successful inventory management. We have added an extra feature to make online bills which help to keep a record of all the bills generated in a given time period.

1.3 OBJECTIVE

The objective of the project is: -

- Add products to your inventory.
- Manage your inventory.
- Add new suppliers.
- Manage your suppliers.
- Add and manage purchase orders.
- How to use barcodes for your business
- Accepting face-to-face credit cards payments
- Send quotes for your clients.
- Create invoices and invoice your clients for products.
- Add staff members to help you manage business.
- Create advanced reports to track how your business is going and your profit or loss over certain periods

1.4 The Need for the Project

Manual management of inventory is a cumbersome task when it comes to a large stock in a company. Project ANYERP looks into this matter and automates this process. Other than inventory management, ANYERP is capable of managing bills and other product details. In the current context, getting statistical information about the product of a brand and a set of products needs extra effort to do sell separately. ANYERP provides a solution to this problem by providing automatically generated statistical information in many aspects.

Product quality

Product availability

Maintenance

Overall statistical distribution in a product

1.5 Overview of Existing Systems and Technologies

Inventory system consists some of the use cases that are implemented in the ANYERP. But ANYERP is mainly concerned with bill generation and the inventory management system. Main Technologies associated with ANYERP.

- Web programming technologies (JS, DJANGO, HTML, CSS)
- SQLLITE3(Database)
- EXTERNAL LIBRARIES (Openpyxl, Chart JS, Bootstrap)

Chapter 2 Literature Survey/Feasibility study

2.1 Economic Feasibility: -

Project ANYERP is a complete web-based application. The main technologies and tools that are associated with ANYERP are

- HTML
- CSS
- JAVASCIPT
- SQLLITE3
- DJANGO
- EXTERNAL LIBRARIES
  - OPENPYXL
  - CHART JS
  - BOOTSTRAP

Each of the technologies are freely available and the technical skills required are manageable. Time limitations of the product development and the ease of implementing using these technologies are synchronized.

Initially the web site will be hosted in a free web hosting space, but for later implementations it will be hosted in a paid web hosting space with a sufficient bandwidth. Bandwidth required in this application is very low, since it doesn't incorporate any multimedia aspect. From these it's clear that the project ANYERP is technically feasible.

2.2 Financial Feasibility: -

Being a web application ANYERP will have an associated hosting cost. Since the system doesn't consist of any multimedia data transfer, bandwidth required for the operation of this application is very low. The system will follow the freeware software standards. No cost will be charged from the potential customers. Bug fixes and maintaining tasks will have an associated cost. At the initial stage the potential market space will be the local universities and higher educational institutes. Beside the associated cost, there will be many benefits for the customers. Especially the extra effort that is associated with paper making and marking will be significantly reduced while the effort to create descriptive statistical reports will be eliminated, since reports generation is fully automated. From these it's clear that the project ANYERP is financially feasible.

2.3 Resource and Time Feasibility: -

Resource feasibility
Resources that are required for the ANYERP project includes,
 Programming device (Laptop)
 Hosting space (freely available)
 Programming tools (freely available)
 Programming individuals
So, it's clear that the project ANYERP has the required resource feasibility.

2.4 Risk Feasibility

Risk feasibility can be discussed under several contexts. Risk associated with size Estimated size of the product in line of codes: Being a web application with many numbers of stakeholders, ANYERP will contain significant amount of code lines. As the system doesn't contain any multimedia aspect, the file sizes and the complete project size will not exceed 200MB. Estimated size of product in number of programs: Though the application supports many stakeholders, it will be constructed as a single web application with a single login page rather than having many numbers of sites for different users. Depending on the access rights, the contents will be showed or hidden.
Size of database created or used by the product: Database size will not exceed the values supported by SQLlite3 (65526 entries per table).
Number of relations and entities are minimized by using best practices of normalization theories. Users of the product:

Company
Owner Buyers
Administrative staff

Number of projected changes to the requirements for the product? Before delivery? After delivery:
The requirements are clearly identified before the implementation phase. Being a general product (not specific to a single user), the requirements will be changed only if new functionalities are added to the system.

Amount of reused software:
Though the main logics are implemented throughout the project, ANYERP will use some JS and CSS libraries to incorporate additional functionalities such as to support chart and graphs.

Business impact risks

Effect of this product on company revenue: ANYERP can be implemented either as an individual system, or can be integrated to an existing system such as university Moodle system. Since it automates some key features associated in college education process, the users can increase the revenue.

Reasonableness of delivery deadlines:

Being a 14 weeks project, the project ANYERP will have several deadlines and deliverables that are scheduled successively. Depending on the coding and designing cost and effort, the deadlines are quite reasonable. Number of customers who will use this product and the consistency of their need's relative to the product: As mentioned above, we can categorize stakeholders into 4 main categories. This system can support many numbers of users simultaneously due to the low bandwidth requirements. Number of other products/systems with which this product must be interoperable: This product can be integrated with current company ledger. Before implementing the system, there will be some basic modifications required.

2.5 Social/Legal Feasibility

ANYERP uses freely available development tools, and provide the system as an open source system. Only the maintenance cost will be charged from potential customers. JS Software libraries that are used in this system are free open source libraries. Since this new system eliminates the effort to make statistical distributions, it will have a great impact in a previous billing and management system.

Chapter 3 Methodology used

This system is built using Django web application framework. Django was originally developed for the news-oriented site of the world company in Lawrence, Kansas. It simplifies the development process of complex, data-base driven web applications like a news-oriented site. Its well-designed framework includes three major parts: model, view and template. Our course management system consists of four components which are grades, marking, group and submission. Each component contains those three parts. When we develop the course management system, we first design the model of the relative component for data architecture, then the template for user interface, at last we implement the view which includes all the functions.

3.1. Planning

Project management has come a long way from its origins in engineering and construction; it is now used for a wide range of applications and is one of the most highly valued management tools.

The project management aim at this stage to prioritize task schedule and manage risk. Project Team and Roles

Praveen Chaudhary

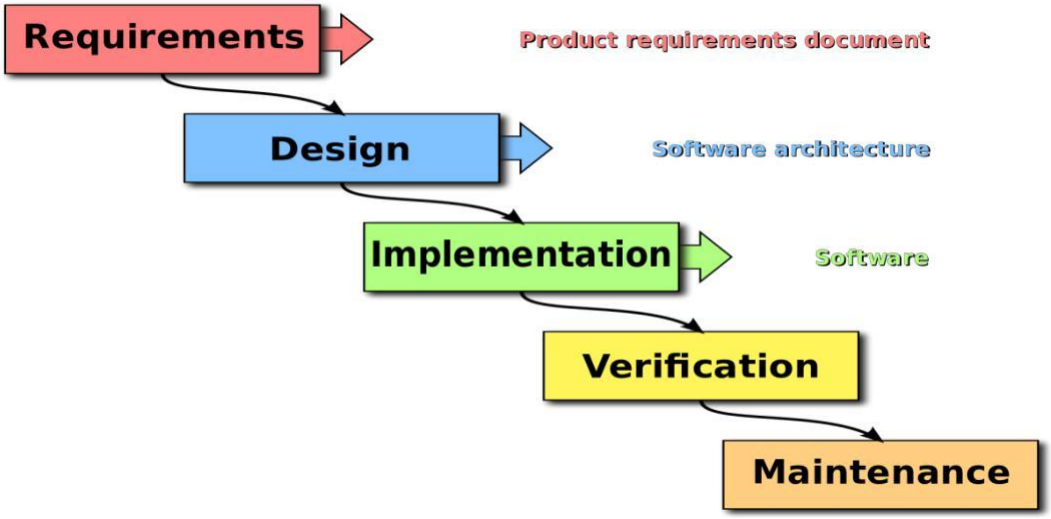
Roles:

- My role will be to develop and execute tasks to produce deliverables as outlined in work break down in linear sequential phases (Waterfall model) in the project development.

While

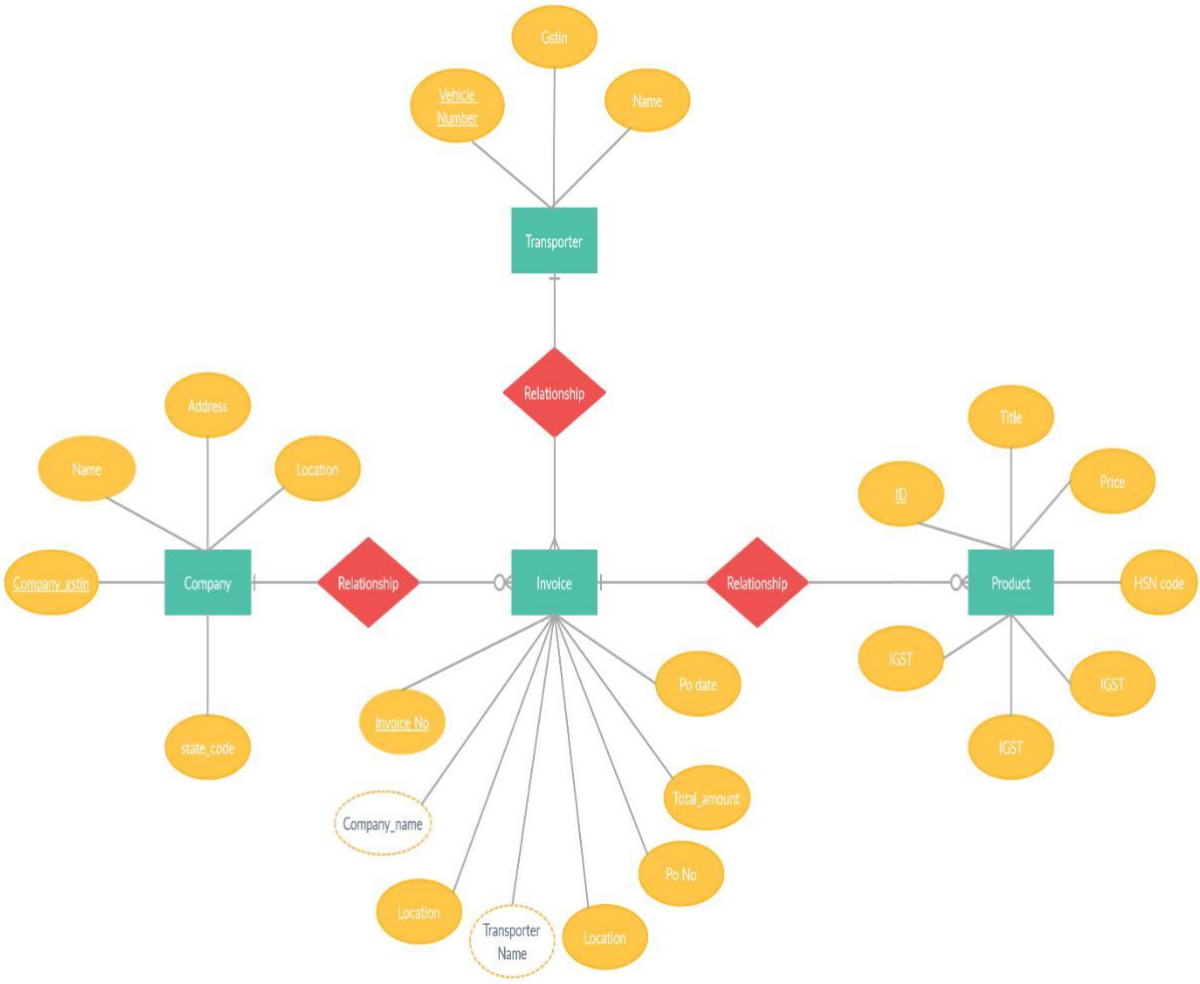
Rahul Singh will act on a supporting role to will include:

- Supervising and make sure everything is done well
- Coordinator and monitor the project progress.



3.2. Design

ER DIAGRAM



3.4. Implementation

To get started, we need to create a backend of the system which is the database. All the tables in the database for this course management system include information for courses, instructors, students, assignments, groups and so forth. These tables are created initially when the course management system is deployed. Some information is input into the database at the beginning, such as semester information and course information. However, most information will be inserted or updated in the database dynamically (For example, creating a group).

Every time we want to create a new group, we will insert a tuple into the Group table to make the database consistent with the real world. To have a Group table in the database, we first need to choose which database we are going to use. Django supports almost all popular databases such as MySQL, sqlite3, and oracle. The one we used for this course management system is sqlite3. We only need to write one sentence to setup the database:

DATABASE_ENGINE = 'sqlite3'

So far, we have our backend database and the frontend web page user interface. What we need now is the logic in between to deal with the user requests and maintain the database. Django view component provides a set of application programming interfaces to fulfil our need and help us implement the logic.

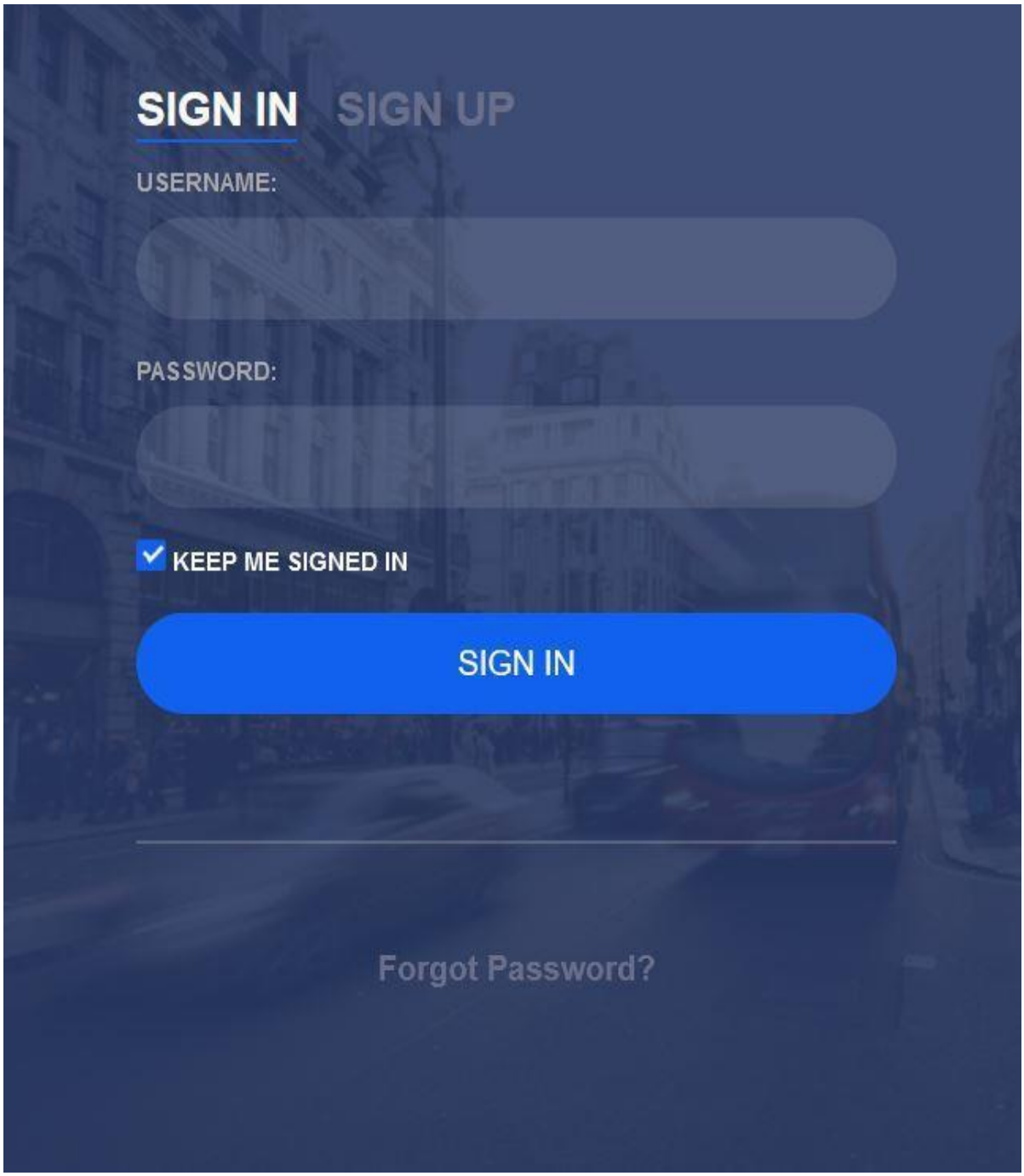
The Django view file is where we write our function to achieve the above two goals. First, it is used to pass parameters to the template and call the right template for the user. Every time we input a URL in the address bar or click a hyperlink in the system, Django will call the right view function based on that URL. Then the function will return a template as well as the corresponding parameters.

Thus, we can see the actual web page displaying the information we need. Second, if we submit something such as create group, the function will have an http request as its input parameter. Based on that parameter the database is updated or the user is provided the required information.

Finally, we add the view function to get the user input, process it and store it into the database. In this chapter I will cover all the group functionalities implemented by me. All the implementation processes of these functionalities follow the last two steps for each of the three described above (we only need to create the database tables once).

CHAPTER 4 RESULT ANALYSIS

LOGIN PAGE: -



INVOICE SAMPLE:-

To:

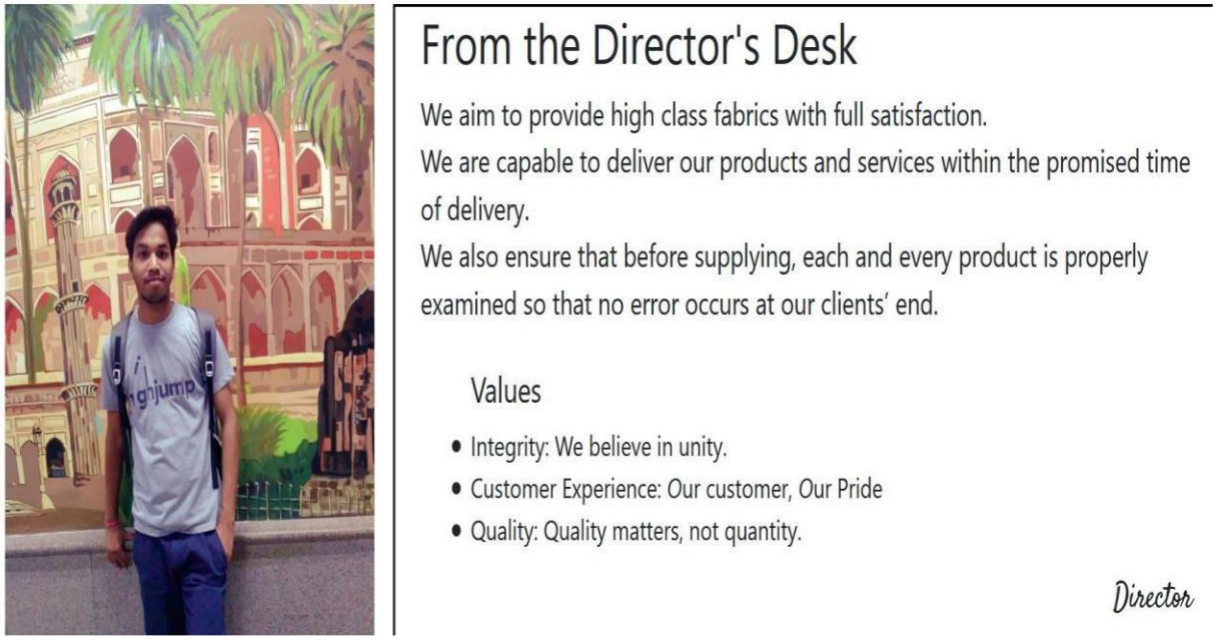
M/S CREATIVE DYEING & PRINTING MILLS P. LTD.
14/3 MAIN MATHURA ROAD
FARIDABAD, HARYANA 121003
06AABCC8332R1Z9

Oct. 7, 2020
Driver name : Rambir
Vehicle no : DL01LAA7677
30.Days

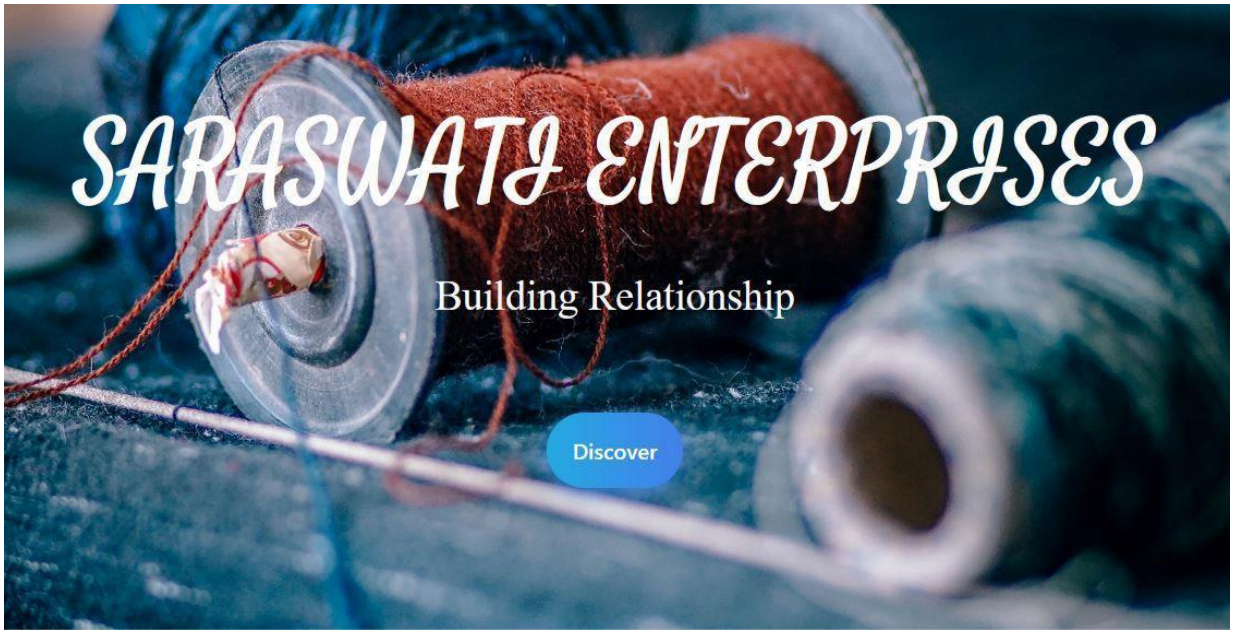
Product Name	HSN	Packing	Quantity	Rate	Total
POLY VINYL ALCOHAL GH17R	3905	15x20	300	210	63000
		Total			63000
		Cartiage			300
		Sum total			63300
	TAX	IGST			0.0
		CGST			0.09
		SGST			0.09
		Grand Total			74694

Download

FOUNDER SECTION: -



Home Page: -



CHAPTER 5 Conclusion & Future Scope

The scope of an inventory system can cover many needs, including valuing the inventory, measuring the change in inventory and planning for future inventory levels. The value of the inventory at the end of each period provides a basis for financial reporting on the balance sheet. Measuring the change in inventory allows the company to determine the cost of inventory sold during the period. This allows the company to plan for future inventory needs.
The prime objective of "ANYERP" is to create a full-fledged web application which could keep all the records of the bills generated by the admin.

We have left all the options open so that if there is any other future requirement in the system by the user for the enhancement of the system then it is possible to implement them. In the last we would like to thanks all the persons involved in the development of the system directly

THANK YOU

-BinaryBeast