



CASANOVA INVENTORY MANAGEMENT SYSTEM

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CASANOVA

PROJECT PROPOSAL

THE PROPOSAL FOR CASANOVA Pvt (Ltd)
INVENTORY CONTROL SYSTEM

PREARE FOR
MR.DEEGAYU RAMBANDARA

PREARE BY
ITP2021_S2_B08_G17

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INTRODUCTION

WHAT IS CASANOVA?

CASANOVA

The client of our project is '**CASANOVA**' which is an apparel manufacturing company based in Sri Lanka. Casanova is importing raw materials through Priyantha Distributions who was in the industry for more than **10 years**. Priyantha Distributors are importing raw materials from abroad suppliers. Priyantha Distributors are selling those raw materials to Casanova. After that those purchased raw materials are sending for several local garments to produce a ready-made product. After receiving those ready-made products from the garments, Casanova is distributing those products for several garments of Sri Lanka. Those local buyers of Casanova are, **Odel, Premium Casual, Liberation, Strips and Checks, Diligenze, Deedat, Coco, Biconic, Cotton Collection.**



The task we assigned to do is to implement the Inventory Control System because Casanova has faced many problems without a proper Inventory Control System. As a group, we have come up with some main functions to implement and those functions have several tasks to perform. By implementing the Inventory Control System for Casanova, they can inventory control system for Casanova, they can have many more benefits for their growth.

WHAT IS AN APPAREL PRODUCTION?

Apparel production is a process where fabrics are being converted into garments as known as garment products. Apparel production is basically used when garments which means apparels are manufactured in a factory. Those apparel manufacturing factories are divided into two main sectors. They are domestic and export.

Simply a factory produces a considerable magnitude of quantity of garments for a particular style or for a design at a particular time. In this process, there are some other sub processes to complete this main task or the process. They are as we have searched; pre-production and post-production, import materials, order managing, raw materials managing, ready-made products managing, quality checking etc.

SCOPE

WHAT IS THE PROBLEM?

The main problem to be addressed in this system is to implement and manage the inventory control system. It is more important for Casanova because, they can manage all the import raw materials and give the correct number of products to the given time for their buyers and manage all the revenues and expenditures. Casanova has many problems and difficulties without an inventory control system.

PROBLEMS THAT CASANOVA FACED

- *Importing materials without a proper management.*
- *Causing damages during the transport and delay transportations.*
- *Not having a proper system for quality check.*
- *Unwanted and minus purchase on raw materials for an order.*
- *Did not have an official state on expenditures & revenues of the company.*

SOLUTION...?

Implementing and managing an Inventory Control System.

WHY AN INVENTORY CONTROL SYSTEM?

“An inventory control system is a technology solution that manages and tracks a company's goods through the supply chain. This technology will integrate and manage purchasing, shipping, receiving, warehousing, and returns into a single system. The best inventory control system will automate a lot of manual processes. It will provide an accurate picture of what inventory you have, where it is, and when you need to reorder to keep your stock at optimal levels.” [1]

- ❖ **An inventory control system will simplify the complexity of every process in a business.**

By having an inventory control system, it will automate and manage the complexity of the company process and employees and owners can much focus on other sectors of the company for their success.

BRIEF INDICATION OF THE SYSTEM FOR **CASANOVA**

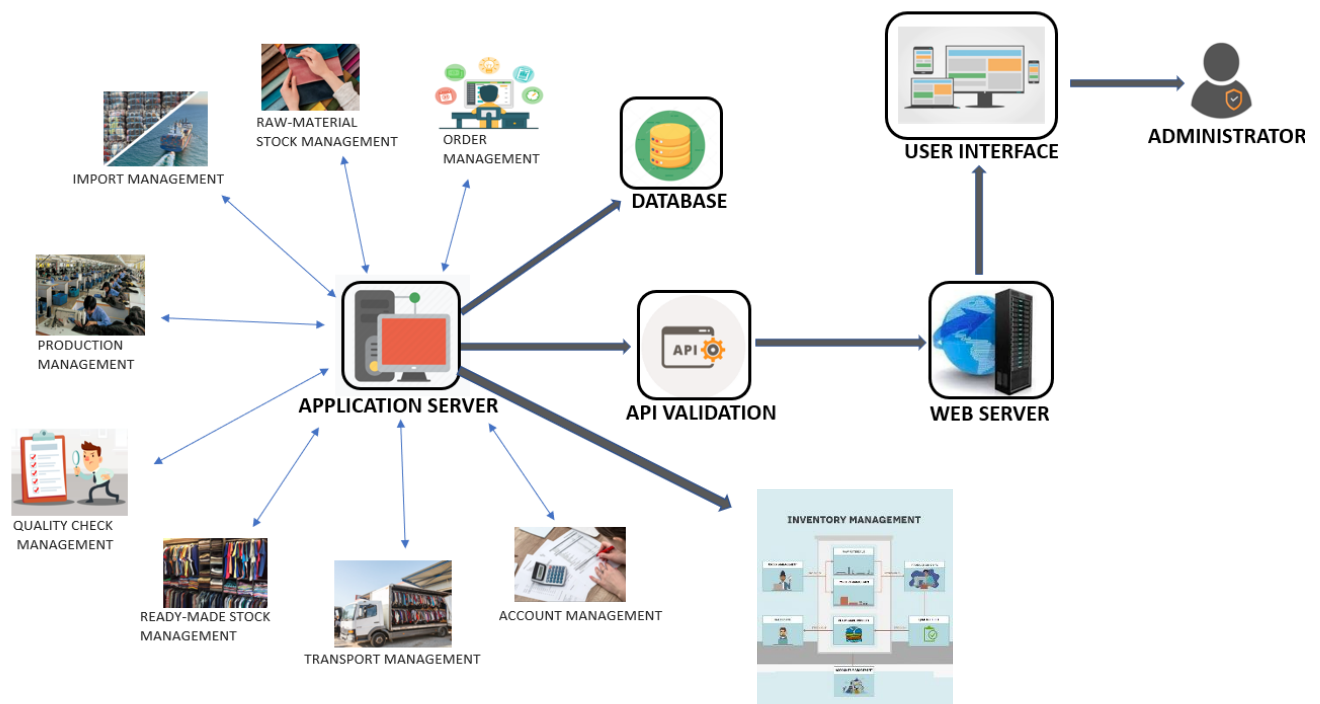
As a brief indication of the system, the buyer of **CASANOVA** is placing an order by giving details of the order with making the necessary payments. The order must deliver to the buyer on date. The order function is checking required number of raw materials need for an order is having in the Raw Material Stock Management function. If there is not necessary number of materials to fulfil the order, Raw Material Stock Management function is informing the order function the smaller number of materials. Less materials and generally needed raw material amount are informing to the Import Management function to get imported and Casanova doing the necessary payment for the suppliers.

After receiving the raw materials from suppliers, they are sending to Raw Material Stock Management function through Import Management function. Raw materials are transporting to the warehouse after purchasing from suppliers. Raw materials are categorized into three main categories in Raw Material Stock Management function.

As per the orders from buyers, the necessary raw material amount which is needed to complete the order is taken from Production Management function and distributed to each garment through Production Management function. at that point, a payment will be done for the garments. The garments are sending the apparels after completing the order. There will be a transport in between garment and Casanova.

The completed apparel orders are sending to the Quality Check function to check the quality of the final output. In this function, if the order is not satisfied the given requirement and the final output is not at the best quality they will be reported. The completed quality checked apparel products are going to the ready-made product stock store. In Ready-made Product Management function, there will be a schedule to distribute the orders to the buyers. There will be a transport. After above mentioned procedure, all the revenues and expenditures management, all the profits and losses calculations are done by the Account Management function. all functions are generating reports. Admin role can access all those reports.

SYSTEM OVERVIEW



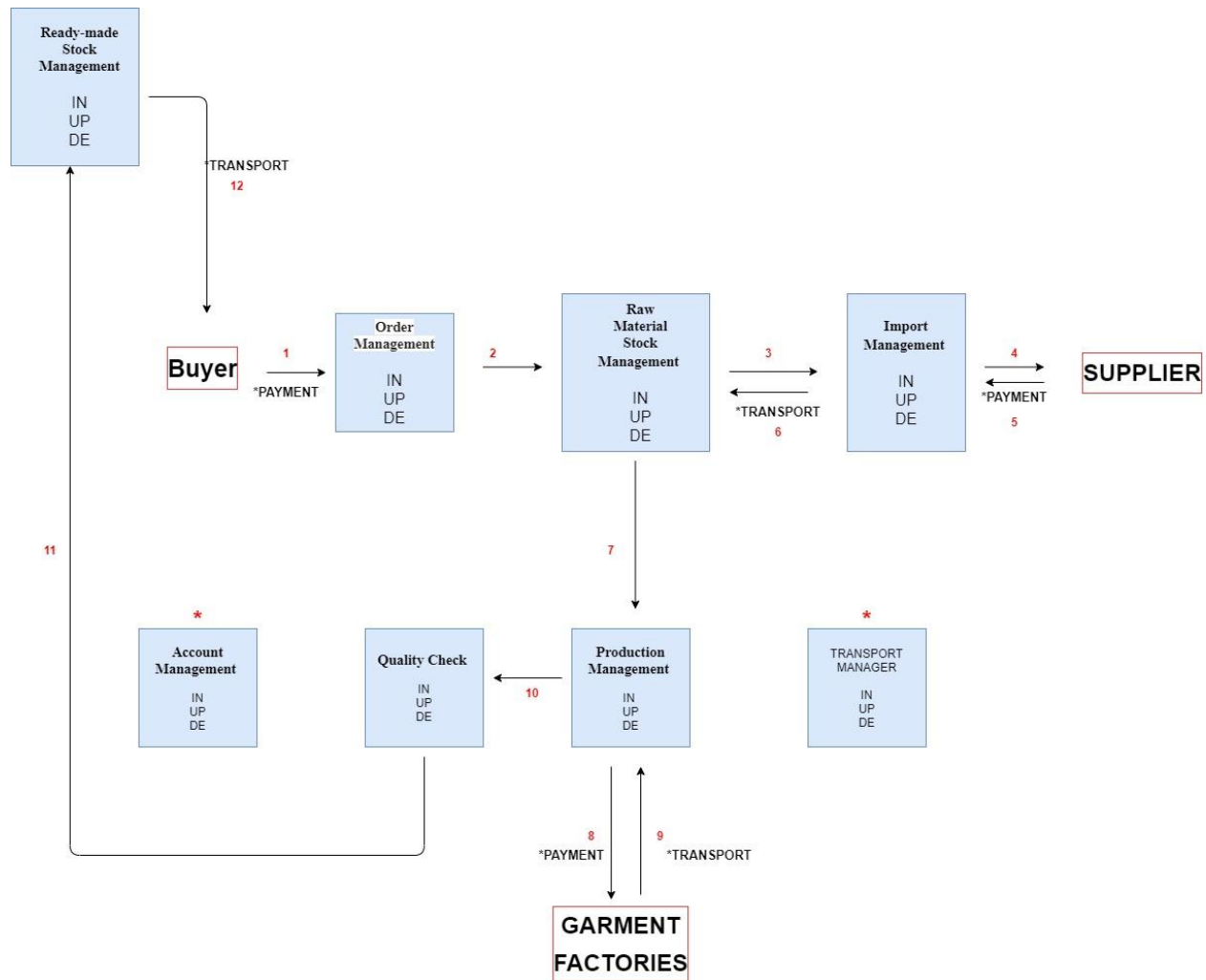
This proposed Inventory Control System is a full stack web application with using four technologies working together. MERN can be referred as four technologies, which are MongoDB, Express, React JS, Node JS. Web application consists of three main components. Front end, Back end and Web server are the main components.

React JS is a client-side browser library which allows to build a highly reactive user interfaces in web application which is referred as Front end. Node JS is a server-side browser library which execute outside of the browser. It is exposed to internet which accept requests and send back responses. Further it executes server-side logic, interact with databases and with files things. It is rarely used standalone instead typically use it, combined with Express. Express is a Node JS framework which provide utility function and certain way of structuring and building up applications but gives new functionalities. Those two technologies refer as Back end. MongoDB is a no sequel database engine which allows to store documents in so called collections instead of records and tables. For security reasons do not connect to MongoDB directly from inside react applications instead do that with help of Node and Express. MongoDB refers as Web server.

Order Manager, Raw Material Stock Manager, Import Manager, Account Manager, Production Manager, Quality Check Manager, Transport Manager and Admin are main roles of our system. There will be separate login for each user role to access each function of the system. Each user role cannot access other functionalities. Further each user can generate an important report using system data.

Admin can access each user roles and can view all functionality of the whole system. The system uses an Application Programming Interface (API) which relates to the payment gateway to communicate with the Buyers, Suppliers and Garment Factories(third-party). Further additional confirmation and validation methods are implemented.

FUNCTIONALITY OF WEB APPLICATION



In production planning, after receiving an order from the buyers, company plans the required number of raw materials for that order. That raw material includes fabrics, sewing threads, packing materials, hang tags and other accessories. Company plans timelines for the process of work as when to start cutting, when to submit pre-production sample, when to start sewing and finishing, quality check date and transport date.

Each processed garment is packing with tissues or cardboard. Folding those garments in related to the categories and buyers. Hang tags and ironing done in the garments and transporting them to the company to do the quality check procedure. During the quality check procedure, those garments are checked by internal quality and external quality to ensure that only good quality products will send to the buyers. All of those products should satisfy the given requirements by the customer. If there are low quality garments, they are sending those garments to production management and they are returning to those garments to make it to the given requirements.

Before dispatching those garments to buyers, quality inspection of the garments is carried by the company itself Many times. If the products are under the buyers requirements those products will transport to the local buyers.

ORDER MANAGEMENT FUNCTION

The main task of the order management function is getting orders from buyers. The responsible person for this order management function is Order Manager. Buyer can place an order after filling an order form and making the relevant payment. An orderID is generated for each order. After getting an order to the system if the needed items to complete the order are available in the raw material stock, order will be confirmed. If the needed items are not available in the raw material stock, order manager has to inform the raw material stock to get the needed items to complete that particular order. A summary report is shown to the buyer after the order is placed. At the end of the month a report on all orders taken will be available. Buyer can retrieve all the information of the order by searching through the orderID. Buyer can update the order details according to the latest requirements. And also, buyer can delete the order. Buyer can search an order by the orderID.



IMPORT MANAGEMENT FUNCTION

Import manager supplies all the materials to the Casanova. import manager do that by regular import material card and less material for order card. Import manager fills the regular import material card by getting the order details from raw material stock management. Time to time raw material manager will send me updated order details then I will retrieve those details and create the regular material card and send to suppliers by monthly. Also, raw material manager updates the less material for order card with defects. Then import manager retrieve defects and update less material for order card within a week of time and send to the suppliers. All the payments are done by account management function. Also import manager can register new suppliers to Casanova. As well as manager can search suppliers. Import manager can check received shipments with orders. After checking, import manager check available vehicles and send the stocks to raw material manager through transport management. Finally create report with order and supplier details.



PRODUCTION MANAGEMENT FUNCTION

Manage all the production in the system. Production Management is the responsible person, who controls all production of the system. In the system have registered many garments factories, which owned by Casanova and some other outside factories and their different capacities. Before any Production is done, retrieve buyers' Orders from Order Management. While analyzing buyer's order, search any available garment factory which can produce according to the capacity of the order. Priority is given to self-owned factories. If there aren't available any self-own garment factory, then concern outside the factory.

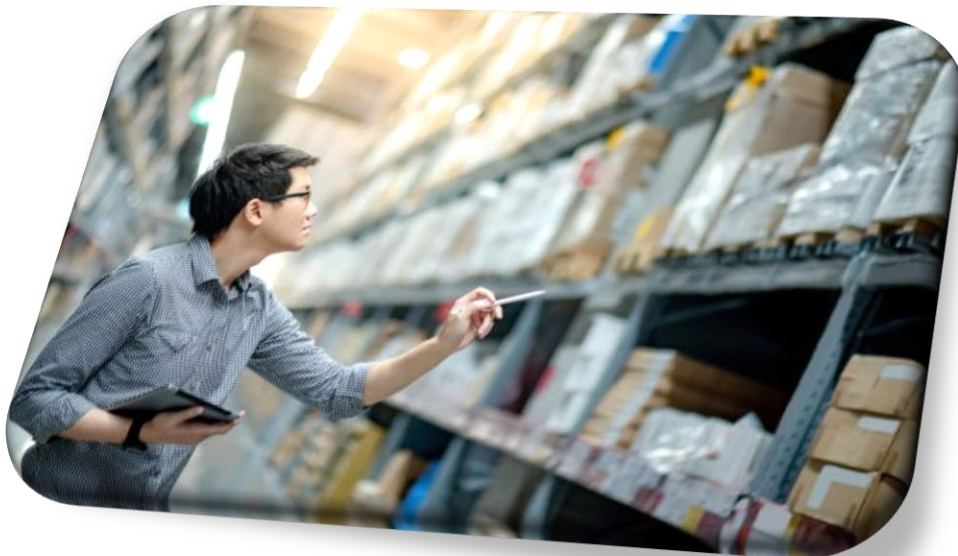
Then production is given to the selected factory. Before transport raw materials, calculations should be done to identify what are the raw materials and how much needed to complete each order. To implement this operation use, Magic Tool. Magic Tool will identify what are the raw materials and calculate how much needed for each order. Then import, raw material details for factory form, select available transport method and details are sent to the factory. Further data will be submitted to the system.

While filling Factory Form, generate a very important report. Regarding what are the raw materials, Production Management is taken from stores. After submitting Factory Form, it auto reduces materials in raw material stock management. Finally receiving ready-made garment invoices, from factories, check any deficiencies and send the invoice to Account Management for payments.



READY-MADE STOCK MANAGEMENT FUNCTION

In this function it can store and transport the final product to the buyer. Here, after the quality check, stocks will be redirected to the warehouse and in there, orders will be grouped by this section into different categories according to buyer requests. So ready-made stock management needs to create the "packing form". In that form, they include Order ID, Category, Quantity, unit value, inventory value, Buyers details and their contact details. After creating the packing form all the orders are lined up in their Warehouse, and the other main thing of this function is the transport, but before the transport they check all the other details are fulfilled, especially check the payments are done successfully or not. So, after checking those details, they make a transport schedule and from that, the ready-made stock management function connects with the transport management function and chooses the vehicles by checking the availability of vehicles and then they release the orders by their warehouse. Finally, reports will be generated monthly according to order transactions and transport information done in that time period.



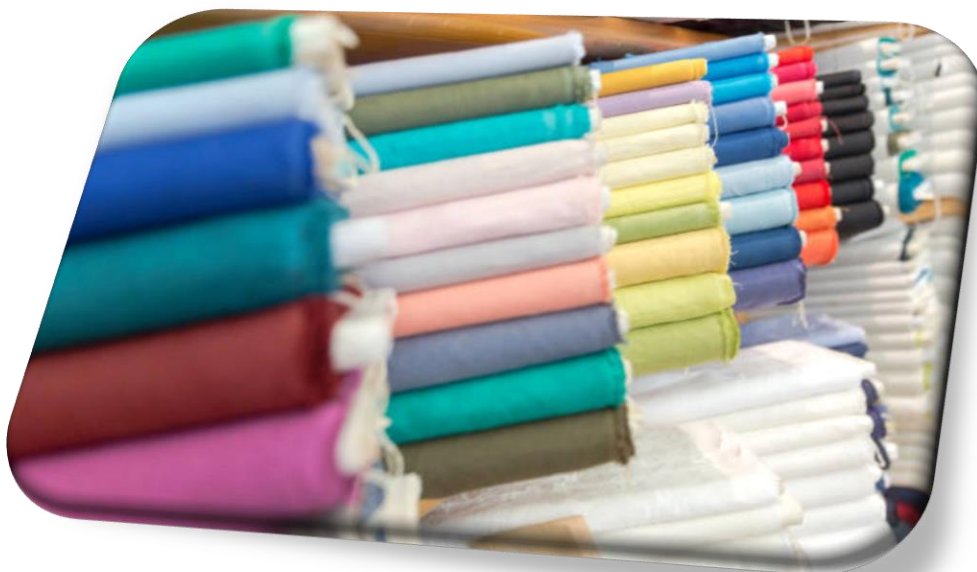
ACCOUNT MANAGEMENT FUNCTION

The name of the function is account management. Here basically focus on the financial details of the company. That responsible is done by the account manager. If there is any financial transaction occurred, it connects to this function. The person who uses this system will be able to see all information relevant to the order ID. Also, there is some other important thing. When the user searched an order ID the details already categorized and displayed. That categorizing sections are the sales journal, the purchase journal, and the general journal. In sales journal it includes the transaction details that we are done with the customers. In purchase journal it contains the transaction details that we are done with the suppliers. The other extra information related to expenses are included in the general journal, for example the transportation. This categorization is very much helpful to the user to calculate profit. Calculating the profit is one of a major tasks in this function. Here, it is used a profit form. There can be included the order ID, customers details, date, sales journal amount, purchase journal amount, general journal amount and any other special information. After submitting this form, the user can be able to see the profit and the other important things. Those details are displayed after finished its process under the order details window. Then after the system generates a report. It consists of the sales journal details, purchase journal details, general journal details and the profit. This report generates for each and every order separately. The person who used this will be able to download it. This report gives an idea about the order. It is most important to company management and the betterment of the company. In addition to these things, a currency rate is displayed to make easier of the user's works. It helps him a lot for calculate the profit.



RAW MATERIAL STOCK MANAGEMENT FUNCTION

The responsible person for this function is raw material stock manager. This function Manages the raw materials in the system which is coming from the suppliers through the Import Management function, and they are adding and analyzing in the system. If the raw materials limit is not satisfied to the set limit, the system is informing that. This function acts intermediate in between the order function and import management function to inform the less materials for an order to be done. The stocked raw Materials are categorized in to three main categories as fabric, accessories, and packing materials. Also, sending the raw materials which was selected in order function for orders to the Production management function. Generating reports according to distributed materials and Exported materials when updating the stocks. In this function can search any material details which inserted to the system. This function checks the amount of raw material that needs to satisfy the order which the buyers made through the order function. if the average limit of material amount is not satisfied it will inform by a label. An the out of fashion and expired materials will be removed from the system. The needed number of materials for an order will send to the production management function for their use through a 'Distribute card'. That particular stock which was sent will update in the system. Through the LMO card, the smaller number of materials for an order will inform to import management function. this function generates 02 main reports as 'overall inventory performance report' and the 'overall inventory control report'. This report updates daily in the system.



QUALITY CHECK FUNCTION

Quality check function has several roles as QC Manager, testing department head, reporter. This function divides into three main processes as Testing, Monitoring, and Reporting. In Testing, Quality Check function checks the given requirements and the design of the ready-made products which is coming from the production management function. therefore, in testing section a quality check criteria form generates according to the buyer's requirements. This happens in the check card. All the testing are monitoring in the Monitoring section. Monitoring section has a search bar to search products by its order ID and there the Manager or any role has access to the function can filter the product quality by a range. Also, doing the Monitoring of tested products Quality, whether it is a high quality or low-quality product. The products details form which sends from the production management function and the reports generates in the Monitoring section can retrieve in this function. If any case the products are under a low quality for a considerable amount those details are sending back to the production management function through the defect card. And in the check card, there can delete or update any requirement according to the customer's needs. Finally, The report which generates in this function is the Effectiveness report and it contains some main details regards to the quality check.



TRANSPORT MANAGEMENT FUNCTION

Import manager buy raw materials from suppliers and the all the stuffs are transport from harbor to company by own vehicles of company. All the Imported stuffs are updated under stock manager's supervision and stocks are transport to the garments by own vehicles of company. In this function transport manager is the responsible person for this management.

transport manager can create roles such as admin, user likewise he can decide which role can access or edit those records Transport Manager should arrange schedules for transportation. and also Transport manager should have updated record of available and not available vehicles according to relevant schedules. Other managers also can access to the transport schedules which is arranged by transport manager. Transport manager has list of all the vehicle details , driver details and routes and, he is the responsible person for above records behalf of the company. After fulfilling the order, all the readymade items are handover to production manager to check quality. All the readymade items are transport to the salesperson. and account manager can retrieve invoice of every transaction regarding to transportation.

usually end of the month transport manager should generate monthly payment report. The company got an order all the payment details should be presented as payment report to buyer when the company fulfilled a relevant order.

All the payments which are mentioned above must be certified by account manager of "CASANOVA".



BENEFITS

BENEFITS OF HAVING AN INVENTORY CONTROL SYSTEM

Any procedure that handles stock will definitely need a system which helps to control it accordingly. Without a system as that, company will be working on an entirely without management and company will quickly run into situations where the materials and products are overstocked or understocked or else low quality product supplying and no legal state on expenditures and revenues. It is more important to have a system to do all these procedures and make the business a better standard.

There are several types of systems to control this kind of process in a company. It is the responsible of the person who took the contract to build the system to recognize the exactly perfect system for the company.

WHAT CASANOVA GETS AS BENEFITS?

- Import materials according to the needs of the order only.
- Manage transport on time and with less damages to the products.
- Improve the quality of the product by checking the products in many ways.
- Buy raw materials only when needed.
- Can know the minus number of raw materials on time.
- Calculate the expenditures and revenues.

TECHNICAL SPECIFICATIONS

TECHNOLOGIES

MERN



REACT

- React is a JavaScript library for building user interfaces.
- React is used to build single page applications and it allows us to create reusable UI components.
- React.JS was first used in 2011 for Facebook's Newsfeed feature. Facebook Software Engineer, Jordan Walke, created it.
- Uses virtual DOM which is a JavaScript object. This will improve apps performance, since JavaScript virtual DOM is faster than the regular DOM.
- Can be used on client and server side as well as with other frameworks.
- Component and data patterns improve readability, which helps to maintain larger apps.

[2] [3]

Node JS

- Node.js is an open-source server environment
- Node.js is free.
- Node.js runs on various platforms (Windows, Linux, Unix, Mac OS X, etc.)
- Node.js is a server-side platform and very powerful JavaScript-based platform built on Google Chrome's JavaScript Engine (V8 Engine). Node.js was developed by Ryan Dahl in 2009 and its latest version is v0.10.36. It is used to develop I/O intensive web applications like video streaming sites, single-page applications, and other web applications. [4] [5]

Express JS

- Express js is a free and open-source web application framework.
- Express is used for designing a web application fast, easily, and reliably.
- It's a framework of node js, so it maintains by node js.
- It written using JavaScript.
- Express is used for building server-side applications on node js.
- This is built up for compatible and support with all the types of operating systems that are compatible for node js. [6]

Mongo DB Atlas

- MongoDB is a document in non-SQL, scalable and opensource database that use for high volume of data storage.
- Mongo DB Atlas is the most demandable global cloud database service.
- This consist of an incredibly good data security and privacy standards.
- Mongo DB is replication for better data availability and stability. [7] [8]

TOOLS

POSTMAN

- Postman is used for build, test and modify the APIs.
- users can create their own APIs without writing a bunch of code with this postman Application.
- Postman application support to various type of HTTP request such as GET,POST,PUT,PATCH and also saving environment for later use, converting the API to code for various languages such as JavaScript, Python. [9] [10]

WHY POSTMAN?

- Postman is a an opensource software and its free and configurations are very simple.
- postman has built data formats and also it widely supports for most of the APIs And Schemas in the world.
- users can easily customize and integrate test suits in their preferred CI (Continuous Integration)/CD (Continuous Deployment). [11]

BOOTSTRAP STUDIO

- Bootstrap studio is recently- released desktop application which is intended to help design beautiful and more responsive prototyping websites for web developers.
- It comes with large number of built-in components, and it builds on more popular bootstrap framework and clean and semantic HTML.
- Also, bootstrap studio is more user friendly and very easy to implement. [12]

Heroku

- Heroku is a platform as a service cloud platform.
- It is one of the earliest cloud platforms .
- Heroku support java, python, Clojure ,node.js and php.
- Heroku, a Platform-as-as-Service solution, is generally easy-to-use.
- Heroku is more popular and most beneficial to businesses in specific situations.
- Heroku has a free service model for small projects.
- Also, tiered service packages exist for cases where more complex business needs must be addressed. [13]

TIME-LINE



MONTHLY PALN

PDF Today June 2021

Day Week Month Agenda

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
30	31	01	02	03	04	05
06	07	08	09	10	11	12 #17 - First Group Meeting
13	14	15 #3 - Discuss the project	16	17 #4 - Select a client for the project #2 - Discuss about clients	18	19
20	21	22	23 #15 - Meet the Client	24	25	26
27	28	29 #24 - Draw a simple diagram #34 - Group Meeting	30 #30 - Finalize the functions	01 #25 - Draw a meaningful diagram	02	03 #26 - Select a technology
04	05	06	07	08 #27 - Charter Document	09	10 #31 - Use case diagram

PDF Today July 2021

Day Week Month Agenda

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
27	28	29	30	01	02	03
		24 - Draw a simple diagram 34 - Group Meeting		30 - Finalize the functions 25 - Draw a meaningful diagram		26 - Select a technology
04	05	06	07	08	09	10
				27 - Charter Document		31 - Use case diagram
11	12	13	14	15	16	17
27 - Charter Document 31 - Use case diagram				32 - Activity Diagram		
18	19	20	21	22	23	24
32 - Activity Diagram		29 - Scrum Activity 33 - ER Diagram 28 - Finalized Charter Document				
25	26	27	28	29	30	31
29 - Scrum Activity 36 - Create project proposal slides			35 - Create the project proposal document			
01	02	03	04	05	06	07

PDF Today August 2021

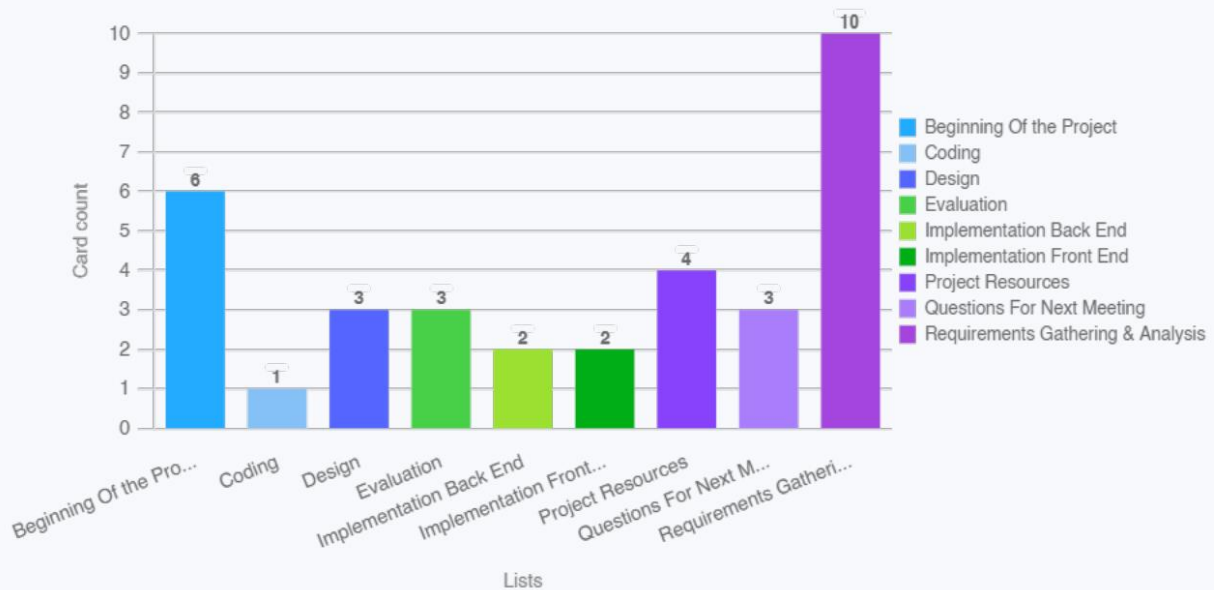
Day Week Month Agenda

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
25	26	27	28	29	30	31
29 - Scrum Activity			35 - Create the project proposal document			
36 - Create project proposal slides						
01	02	03	04	05	06	07
36 - Create project proposal slides						
35 - Create the project proposal document						
37 - Back end design planing						
08	09	10	11	12	13	14
35 - Create the project proposal document						
38 - Back end implementation & design						
15	16	17	18	19	20	21
38 - Back end implementation & design						39 - Front end design planing
22	23	24	25	26	27	28
39 - Front end design planing			40 - Front end implementation & design 23 - Finalize the client			
29	30	31	01	02	03	04
40 - Front end implementation & design				42 - Coding		

PDF Today ◀ ▶ September 2021 Day Week Month Agenda

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
29	30	31	01	02	03	04
#40 - Front end implementation & design				#42 - Coding		
05	06	07	08	09	10	11
#42 - Coding						
12	13	14	15	16	17	18
#42 - Coding						
19	20	21	22	23	24	25
#42 - Coding		#41 - Work evaluation			#43 - Client visit	
26	27	28	29	30	01	02
#44 - Testing						
03	04	05	06	07	08	09

B Cards by List Casanova Project Management



ACCEPTANCE OF PROPOSAL

To: Dheegayu Rambandara

Please inspect the above scope, description of work and terms for your project, and indicate your acceptance with your signature below. We trust this proposal satisfies your needs, but should anything need clarification or adjustment, please don't hesitate to let us know.

**On behalf of the client (authorized signature)*

Dheegayu Rambandara

DATE: **07/08/21**

CASANOVA (PVT) Ltd.

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THANK YOU!