ArchiLite Information System Plan

Client: ArchiLite Manufacturing Company

BUDT 723 Business Process Analysis
Professor Sindhu Rajan
Project Team 4
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Group Members:
Sai Bobba
Abdulazeez Olukose
Sherman Sequeira
Tania Sinhasan
Jia-Pei Wu
Shashank Patil

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Executive Summary

This document outlines the details of an Inventory Management information system implemented for the use of ArchiLite, a light manufacturing and retail store based out of Mumbai, India. The primary objective of this system is to streamline the inventory management, making it more efficient and reliable. This will be achieved through a secure database to store inventory levels of the products procured and sold by ArchiLite. The system will be linked to the company's newly revamped website, which will enable customers to browse products, request quotes and place orders seamlessly. The system will also be integrated with the company's manufacturing plants information system for a real-time communication about depleting inventory levels to ensure the inventory data is up-to-date. There will also be an integration with an external payment gateway to securely handle all payments. The methodologies used for development will be Agile and Waterfall. The project is expected to take 167 days to be completed.

System Planning Phase Report

1.0 Introduction

This project aims to create an Inventory Management System for ArchiLite, a light manufacturing and retail company. This system will optimize ArchiLite's inventory management by improving the coordination between their manufacturing unit and retail store, and enabling them to make informed decisions about procurement, stocking and sales. Additionally, this system will offer an enhanced purchasing experience for the customers and improve customer satisfaction, by allowing them to purchase their desired products quickly, efficiently and safely.

2.0 Project Justification

2.1 Client and Industry Background

ArchiLite is a leading light manufacturing company who also have their own retail store in Mumbai, India. It was founded by Mr. Vipul Shah in 1985. The company focuses on providing exceptional lighting solutions to their clients, which include architects, interior designers, and construction companies. The business is operated by a team of 15 employees. What sets Archilite apart is that it has its own manufacturing unit and retail store. This ensures that the company maintains complete control over the quality of its products and eliminates the need for third-party vendors, which ultimately cuts down the pricing for its customers. This unique feature has helped ArchiLite gain a reputation for delivering high-quality lighting products and solutions and build a loyal customer base in Mumbai over the years.

2.2 Opportunity

Currently, ArchiLite relies on a manual process of taking orders over the phone due to an absence of a centralized inventory system. This has led to a cumbersome and time-consuming reconciliation process, causing significant stockouts and overstocking of products. Also, it has led to frequent customer complaints associated to lack of availability of product, delay in service, billing errors and overall inconvenience. To overcome these issues, our proposed centralized system will streamline all inventory-related tasks, significantly reducing the time and effort required to manage orders. The customers will be able to browse products, request quotes and place orders over the company's website and receive real-time information about product availability. Additionally, automating this process will enable the company to eliminate risk of errors associated with manual entry, ensuring accuracy of data.

3.0 Project Objective

The project objective is to develop a centralized, robust web-based inventory management system that will help ArchiLite streamline their operations and accurately track their inventory levels through integration with their existing online website. The system aims to significantly reduce stockouts and overstocking, with a target goal of at least 50% reduction. Additionally, the implementation of a more customer-friendly online ordering process is expected to boost the company sales by minimum 20% by the end of year 2024.

4.0 Project Scope

The Inventory Management system proposed for ArchiLite will be a robust platform that facilitates the efficient handling of inventory-related data, including stock availability, procurement, storage, and product sales. As a web-based system, it will be easily accessible through a user-friendly application, providing authorized users with real-time visibility into inventory levels, sales trends, and other critical metrics.

In addition to providing a streamlined inventory management process for ArchiLite, the system will also include several features that enhance the customer experience. Customers will be able to browse through the products, view product details, and request quotations. The system will also allow them to place orders and track the status of their orders on the website, providing a transparent and user-friendly online shopping experience. The secure payment processing capabilities will ensure that customers can make payments directly online, which will streamline the checkout process and provide a higher level of security for online transactions.

By implementing the Inventory Management system, ArchiLite will have access to accurate and up-to-date inventory data, allowing the company to make informed decisions about procurement, manufacturing, and stocking. This, in turn, will help to eliminate stock shortages and dead stock, reducing

costs and improving overall efficiency. Additionally, the system will provide valuable insights into sales trends, enabling the company to adjust pricing, marketing, and inventory management strategies accordingly.

5.0 Functions

Inventory Management System

1. Inventory Monitoring: The system will have a real-time inventory monitoring feature, which will allow it to understand inventory levels and send out notifications to employees when the levels are low or below the set threshold levels.
2. Manufacturing Planning: The system will also have a manufacturing planning feature that will enable it to send notifications to the manufacturing unit about what products to manufacture and in what quantities they should be manufactured.

3. Customer Account Creation: The system will provide customers with the ability to create an account on the website, allowing them to browse through the products and place orders easily.
4. Order Management: The system will have an order management feature that will enable it to track orders from the point of placement to the point of delivery.
5. Payment Processing: The system will also have a secure payment processing feature that will allow customers to make payments directly on the website.

Integrations

1. Payment Gateway Integration: The system should be integrated with a reliable and secure third-party payment gateway provider to facilitate safe and secure payments from customers. The integration should ensure that all government regulations related to online payments are met.
2. Website Integration: The system should be integrated with the website to ensure that product quantities are accurately reflected on the website.
3. Manufacturing Unit Information System Integration: The system should be integrated with the Manufacturing Unit Information System to ensure that there is real-time communication between both systems. This will allow the Inventory Management System to send notifications to the manufacturing unit about what products to manufacture and in what quantities they should be manufactured.

6.0 Project Methodology

Hybrid Consisting of **Waterfall** and **Agile** methodology.

We will be using a Hybrid methodology for this project, combining the best practices of both Waterfall and Agile methodologies for the development of the system.

The first two stages of the project - Planning and Analysis - will follow a Waterfall model, such that the Planning phase will be followed by the Analysis phase in a sequential manner. Following the Waterfall model for these phases will enable us to establish a solid foundation for the development phase which is critical for this project as an entire new system would be integrated for the first time since the establishment of the company. It will help us to identify any gaps or shortcomings in the initial planning stage and ensure that we have a comprehensive plan before moving onto the development phase. It will also help us to conduct a detailed analysis of system requirements, use cases and other critical aspects by involving all the stakeholders. Once the system requirements are identified in the Waterfall methodology, it is unlikely that any significant changes can be made in the subsequent phases, which would reduce the risk of budget overrun and scope creep.
The Execution and Close-Out phases of the project will follow an Agile methodology. As the development team will be delivering a working prototype of the system in each sprint, it will provide an opportunity to get feedback from the ArchiLite team regarding system look, feel and the overall functionality. This approach will allow us to cut down on wait time for feedback, as any changes or improvements suggested by the ArchiLite team can be incorporated quickly into the next sprint. The Agile methodology will also allow us to test the performance of the inventory management system after its integration with the manufacturing information system and payment gateway. This approach will enable us to detect and address any issues early in the development process, ensuring that the final product meets the required quality standards.

Comparison to other development models is as follows.

Ability to Develop System with	**Waterfall**	**RAD**	**Agile**
Detailed Requirement Gathering	Excellent	Average	Average
Additional User Requirements	Poor	Average	Excellent
System Integration	Poor	Average	Average
Track Project Progress	Poor	Average	Excellent
Short Time Constraint	Poor	Excellent	Excellent

7.0 Project Plan

⊟ArchiLite Information System	**167 days?**	**4/5/23 8:00 AM**	**11/23/23 5:00 PM**
⊟Planning	**19 days**	**4/5/23 8:00 AM**	**5/1/23 5:00 PM**
Project Initiation	1 day	4/5/23 8:00 AM	4/5/23 5:00 PM
Communication Plans	5 days	4/6/23 8:00 AM	4/12/23 5:00 PM
Establish Proj Steering Commitee	5 days	4/13/23 8:00 AM	4/19/23 5:00 PM
Identify Stakeholders	3 days	4/20/23 8:00 AM	4/24/23 5:00 PM
Project Charter Approval	5 days	4/25/23 8:00 AM	5/1/23 5:00 PM
⊟Analysis	**27 days**	**5/2/23 8:00 AM**	**6/7/23 5:00 PM**
⊟Establish Requirements	**8 days**	**5/2/23 8:00 AM**	**5/11/23 5:00 PM**
Business Owner Requirements	2 days	5/2/23 8:00 AM	5/3/23 5:00 PM
Retail Store Requirements	2 days	5/4/23 8:00 AM	5/5/23 5:00 PM
Payment Gateway Requirements	2 days	5/8/23 8:00 AM	5/9/23 5:00 PM
Manufatcuring Unit Requirements	2 days	5/10/23 8:00 AM	5/11/23 5:00 PM
Overall Integration Analysi	5 days	5/12/23 8:00 AM	5/18/23 5:00 PM
Use Case Development	10 days	5/19/23 8:00 AM	6/1/23 5:00 PM
Review Use Cases	2 days	6/2/23 8:00 AM	6/5/23 5:00 PM
Approve Use Cases	2 days	6/6/23 8:00 AM	6/7/23 5:00 PM
⊟Execution	**151 days?**	**4/5/23 8:00 AM**	**11/1/23 5:00 PM**
⊟Inventory Managment System	**151 days?**	**4/5/23 8:00 AM**	**11/1/23 5:00 PM**
Requirement Analysis	5 days	6/8/23 8:00 AM	6/14/23 5:00 PM
⊟Develop Database Design	**14 days**	**6/15/23 8:00 AM**	**7/4/23 5:00 PM**
Database Document Creation	8 days	6/15/23 8:00 AM	6/26/23 5:00 PM
Physical ERD	6 days	6/27/23 8:00 AM	7/4/23 5:00 PM
⊟Development	**45 days**	**7/5/23 8:00 AM**	**9/5/23 5:00 PM**
Website Modification	25 days	7/5/23 8:00 AM	8/8/23 5:00 PM
System Documentation	10 days	8/9/23 8:00 AM	8/22/23 5:00 PM
All Other Documentation	10 days	8/23/23 8:00 AM	9/5/23 5:00 PM
⊟Testing	**150 days?**	**4/5/23 8:00 AM**	**10/31/23 5:00 PM**
Testing Reports	30 days	9/6/23 8:00 AM	10/17/23 5:00 PM
Training	1 day?	4/5/23 8:00 AM	4/5/23 5:00 PM
All Staff Training	10 days	10/18/23 8:00 AM	10/31/23 5:00 PM
System Roll-Out	1 day?	11/1/23 8:00 AM	11/1/23 5:00 PM
⊟Close Out Phase	**16 days**	**11/2/23 8:00 AM**	**11/23/23 5:00 PM**
⊟Track Performance	**16 days**	**11/2/23 8:00 AM**	**11/23/23 5:00 PM**
Development Activities Report	16 days	11/2/23 8:00 AM	11/23/23 5:00 PM
⊟Feedback Analysis	**16 days**	**11/2/23 8:00 AM**	**11/23/23 5:00 PM**
Testing Feedback Report	16 days	11/2/23 8:00 AM	11/23/23 5:00 PM
Post Implementation Review Report	16 days	11/2/23 8:00 AM	11/23/23 5:00 PM

System Analysis Phase Report

8.0 Requirements

8.1 Business Requirements

- Create a web-based inventory management system that can handle all data related to available stock, procurement, storage, and product sales.
- Develop a system that can help ArchiLite understand the inventory levels accurately and help manufacture product stock so that there is never a shortage or dead stock.
- Integrate the inventory management system with the website so that customers can browse through the products and place orders with accurate information on product
- Implement a feature in the inventory management system that can generate reports on sales, inventory levels, and procurement, to help ArchiLite analyze the business and make informed decisions.
- The system should be integrated with the company's manufacturing unit to provide accurate and timely information about product demand.
- Implement a payment gateway integration with the help of a third-party provider so that payments can be made securely and in compliance with all government regulations.
- The payment gateway should also be able to handle different modes of payment, such as credit/debit cards, net banking, and mobile wallets, and provide real-time confirmation of successful transactions to customers.
- The payment gateway should allow for refunds and chargebacks, if necessary, and ensure that all sensitive financial information is encrypted and protected.

8.2 User Requirements

Customers

- Customers should be able to register for an account on the website and browse through available products.
- Customers should be able to request a quote of the products.
- Customers should be able to place orders for selected products and make payments via a secure payment gateway.
- Customers should be able to get real-time inventory information from the website, including product availability and anticipated delivery times.
- Customers should be able to check the status of their orders using the system's order tracking tool.
- Customers should be able to access the website from different devices and web browsers as well as the website should have a user-friendly interface that is simple to use and navigate.

Staff Members

- Staff members should be able to process orders.
- Staff members should be able to access customer information.
- Staff members should be able to request the system for Sales reports.
- Staff members should be able to update inventory in the system.
- Staff should be able to access the system from any device.

8.3 Functional Requirements

Process Functional Requirements:

- System should load product search results in under 1 second.
- System should be able to calculate the inventory shortfall or dead stock.
- System should be able to send a notification when the inventory goes below or above a threshold level.
- System should be able to generate the sales report.

Information-Oriented Requirements:

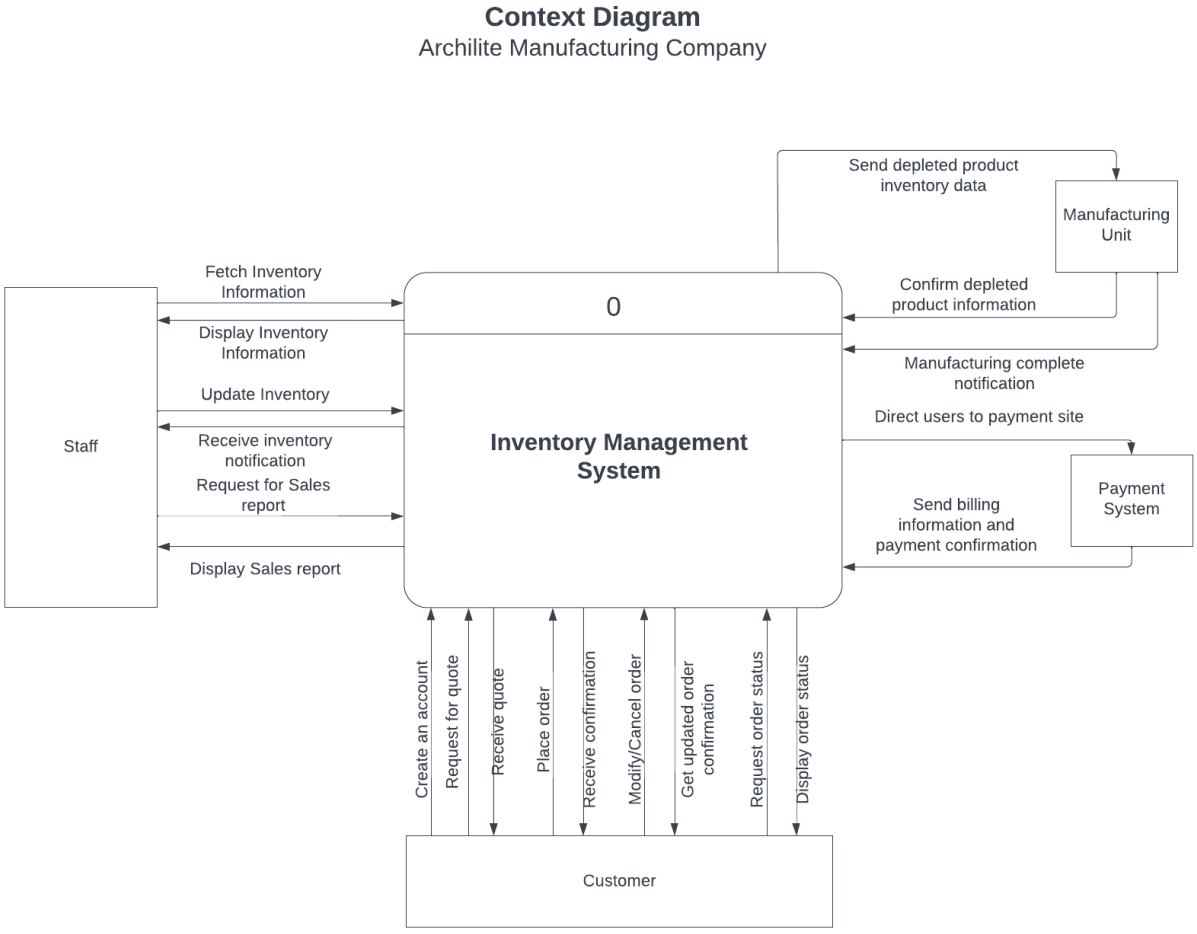
- System should store product information.
- System should store customer information.
- System should capture payment information.
- System should capture the inventory information of the listed products.
- System should capture order information.
- System should capture the manufacturer's information.

8.4 Non-Functional Requirements

- The system should ensure the confidentiality, integrity, and availability of the inventory data. It should have robust access controls and data encryption in place.
- The system should be highly reliable, with a minimal risk of downtime or data loss. There should be regular backups and contingency plans in place.
- The system should be compliant with relevant industry regulations and standards, such as data protection laws.
- The system should be designed to scale as the company grows. This means that it should be able to handle the increasing amount of inventory data and user traffic.
- The system should be able to handle many simultaneous users without experiencing performance issues. Response times should be quick.

- The system should be available 24/7 with minimal scheduled downtime for maintenance and upgrades.
- The system should be able to exchange data with other systems and devices using standard protocols and interfaces. Common data formats need to be supported.

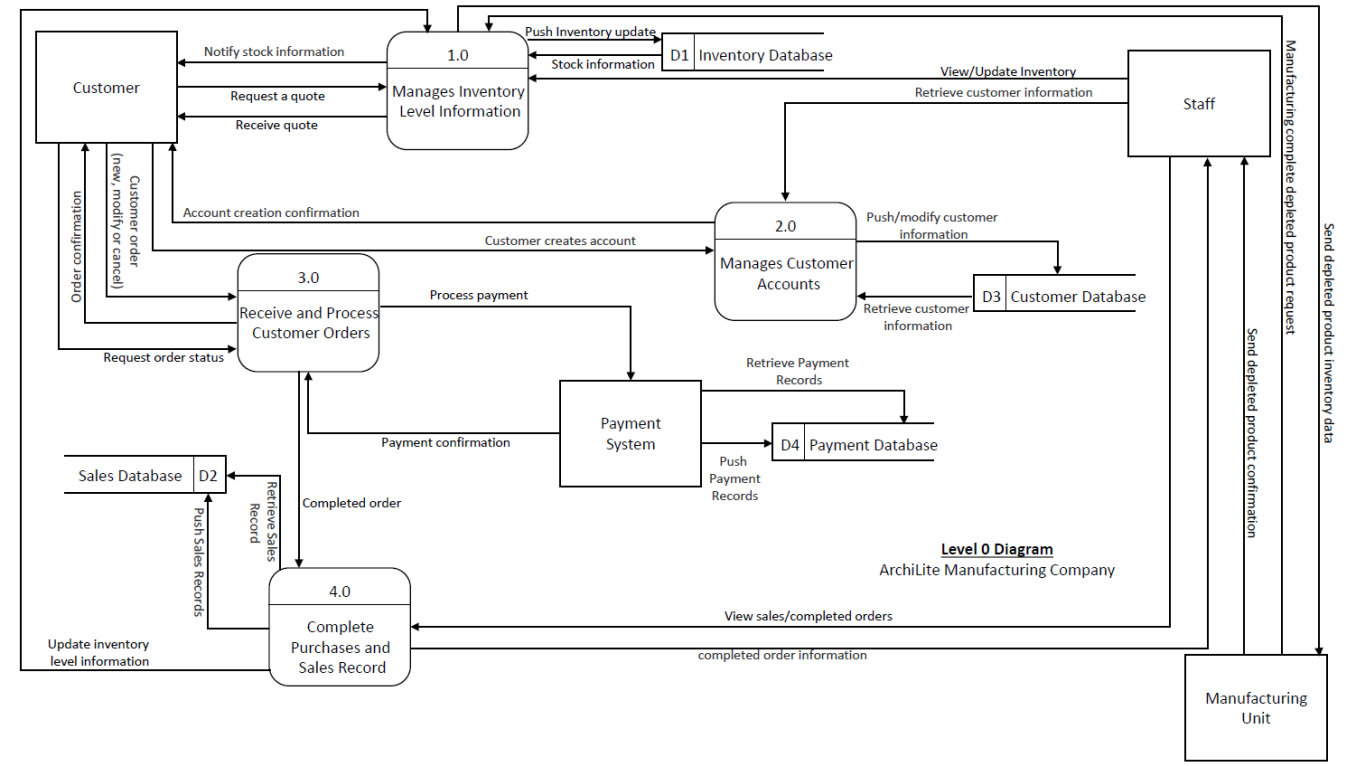
9.0 Data Model - Context Level Diagram



Description:

As shown in the above context diagram, there are 4 entities namely company staff, manufacturing unit, payment system and customer, to and from which information flow happens. The context diagram displays the way information flow happens in between the system and external entities.

10.0 Level 0 Diagram

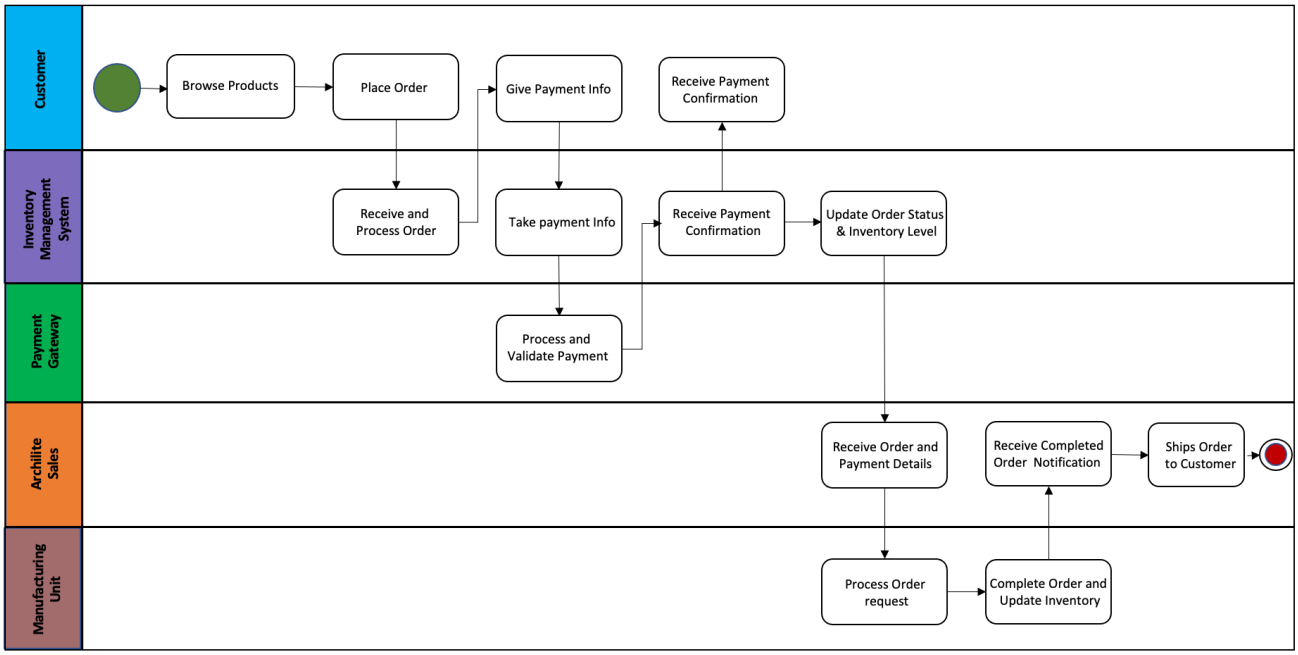


Description

As shown in the above context diagram, there are 4 entities namely company staff, manufacturing unit, payment system and customer, to and from which information flow happens. There are 4 Data Stores namely Inventory Database, Sales Database, Customer Database and Payment Datastore. There are 4 Processes in the system.

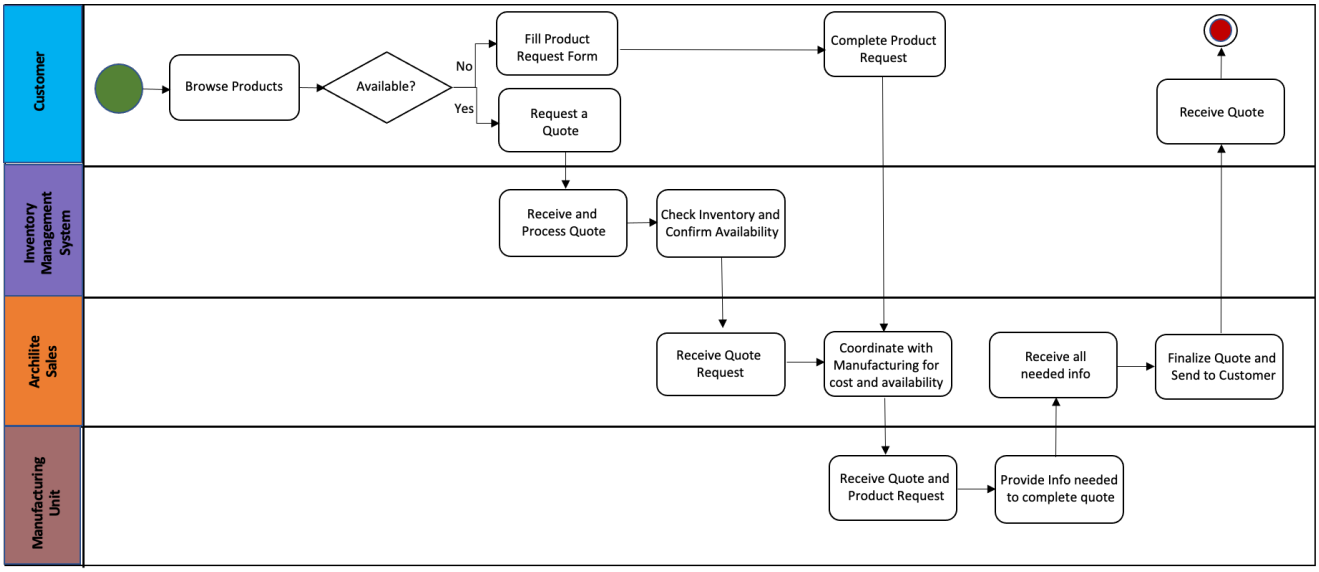
11.0 Swimlane Diagrams

The process of placing an order by a customer



Description: This swimlane diagram illustrates the process of order fulfillment on ArchiLite Manufacturing website, involving key actors such as the customer, inventory management system, payment gateway, ArchiLite sales, and the manufacturing unit. The diagram is designed to provide a clear, visual representation of the steps taken from the moment a customer browses products to the final shipment of the order. The swimlane diagram effectively showcases the seamless coordination and interaction between various actors in the ArchiLite Manufacturing Company's order fulfillment process. This ensures efficient and accurate order processing, ultimately leading to customer satisfaction and loyalty.

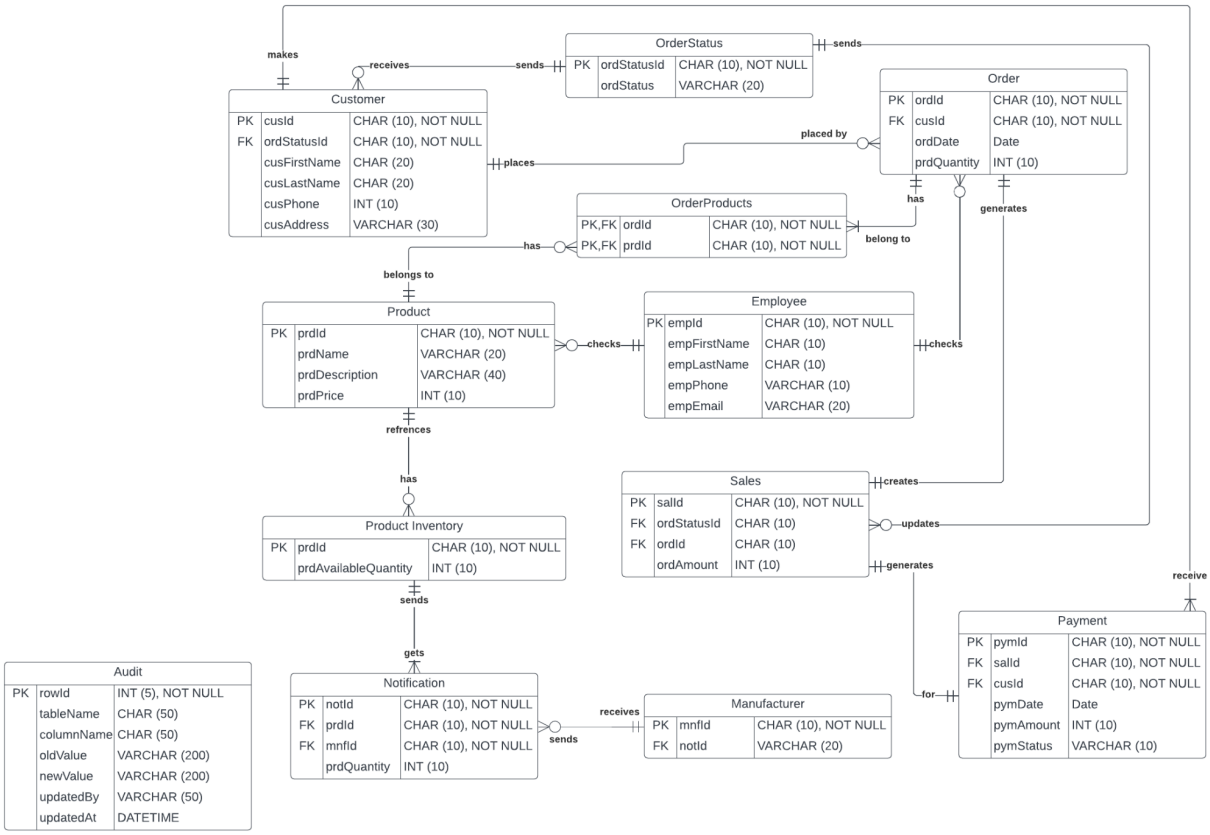
The process of requesting a quote by a customer



Description: The swimlane diagram demonstrates the process of requesting a quote on ArchiLite Manufacturing website, involving key actors such as the customer, inventory management system, Archilite sales, and the manufacturing unit. The diagram is designed to provide a clear, visual representation of the steps taken from the moment a customer browses products to the final delivery of the quote, with a focus on efficient communication and collaboration between the involved parties. The swimlane diagram effectively showcases the seamless communication and interaction between various actors in ArchiLite Manufacturing Company's quote request process. This ensures efficient and accurate quote preparation, leading to a streamlined experience for the customer and fostering trust and satisfaction.

System Design Phase Report

12.0 Physical ERD



Description: There are a total of 12 entities in this physical ER diagram. Namely Customer, Product, Product Inventory, Notification, Audit, Manufacturer, Payment, Sales, Employee, Order, OrderProducts and OrderStatus.

The relationship between all entities is indicated by the cardinality.

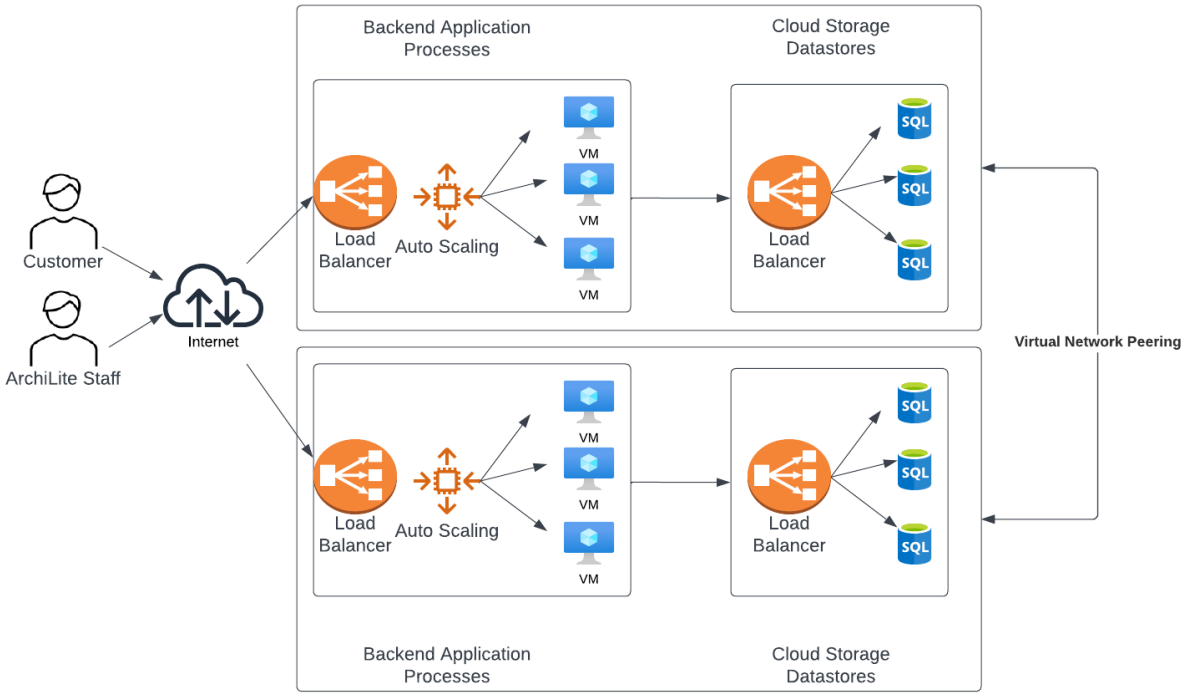
13.0 Architecture Proposal

For ArchiLite, a company that is still in the process of growing, it may not be feasible to have its own internal IT team. Outsourcing the development of an inventory management system, in this case, can provide the company with the necessary expertise and resources without the overhead cost of hiring and maintaining an internal IT team.

One of the major advantages of outsourcing the development of an inventory management system is the time it saves. When a company outsources the development of such a system, they are essentially hiring a team of professionals who have already developed similar systems for other companies. As a result, there is no need to spend time and resources on training staff or any other unnecessary delays. The development process can be streamlined and completed in a shorter time frame, allowing the company to start using the system sooner.

Another advantage of outsourcing the development of an inventory management system is the technical expertise that comes with using a professional team. The team will have a deep understanding of the technical aspects of the development process, and their expertise can help prevent technical issues that could arise during the development of the system. This expertise can help ensure that the system is developed correctly, without errors or bugs that could potentially cause issues down the line.

Taking all of this in mind we have decided to go ahead with **Autoscaling Cloud Based Architecture** for this project. The main advantage of using this is that it will be extremely cost effective as autoscaling allows the company to pay only for the resources it needs at any given time. This means that there is no need to over-provision resources in anticipation of future growth, which can result in significant cost savings. Second, as the demand is ever changing autoscaling allows the infrastructure to automatically adjust to the changing demands of the system. This means that when there is a sudden increase in traffic or workload, the system can automatically scale up to meet the demand without any manual intervention. This ensures that the system is always available and performs optimally, even during peak usage periods.



- All users can access the system through their desktop.
- The desktop is connected to the cloud-based system via the internet and communication occurs through the internet gateway.
- The Load Balancer easy handling of clients' requests by passing the request made to the least busy application processing instance.
- Backend Application Processes are the actual Inventory Management Systems application that is made up of the logic that connects the website to the backend cloud-based databases.
- The Cloud Storage Datastores handle all the updates and insert new data requests. This will basically act as the master database. Security features such as encryption, multi-factor authentication, and automated backups ensure that data is kept secure, while collaboration features enable teams to work together more efficiently. The system will operate in a master slave format to ensure there is a high level of reliability and efficiency. The access to these datastores will be through the Internet.

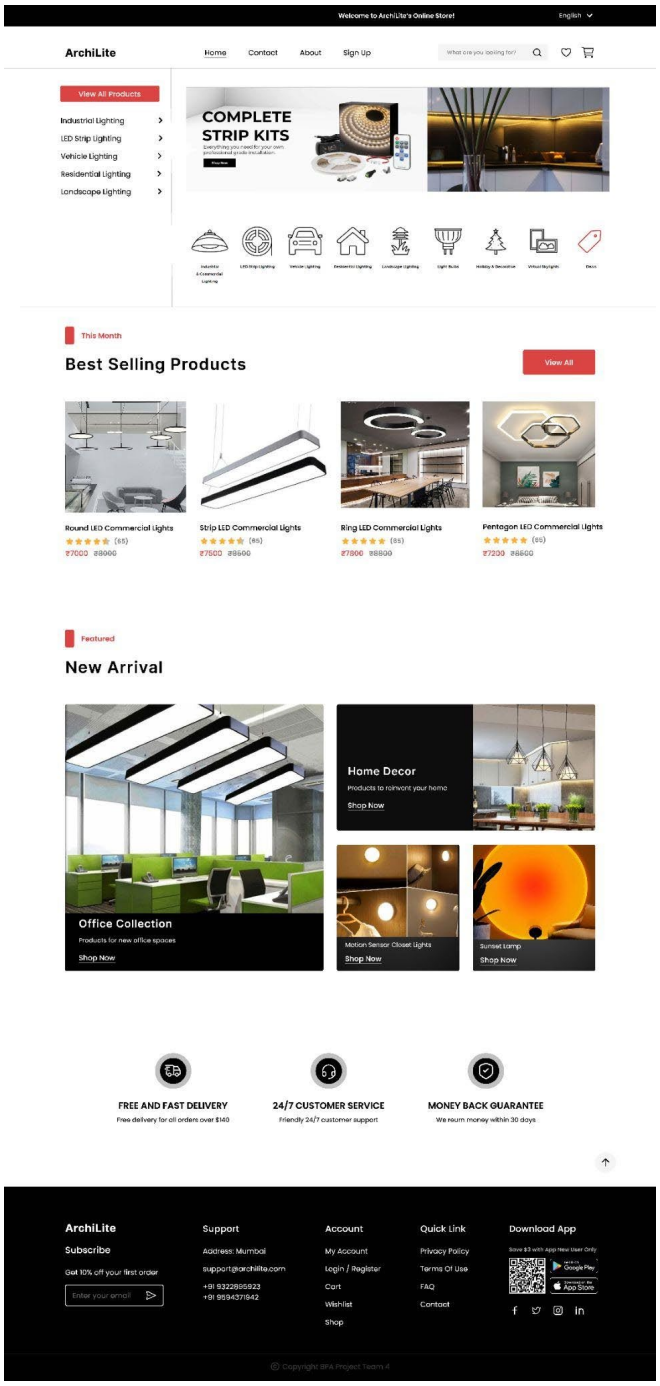
Software Systems:
Data Storage - Tabular cloud based database
Data Access Logic - SQL
Application Logic - Inventory Management System
Presentation Logic - ArchiLite Website

14.0 User Interface

14.1 Home Page

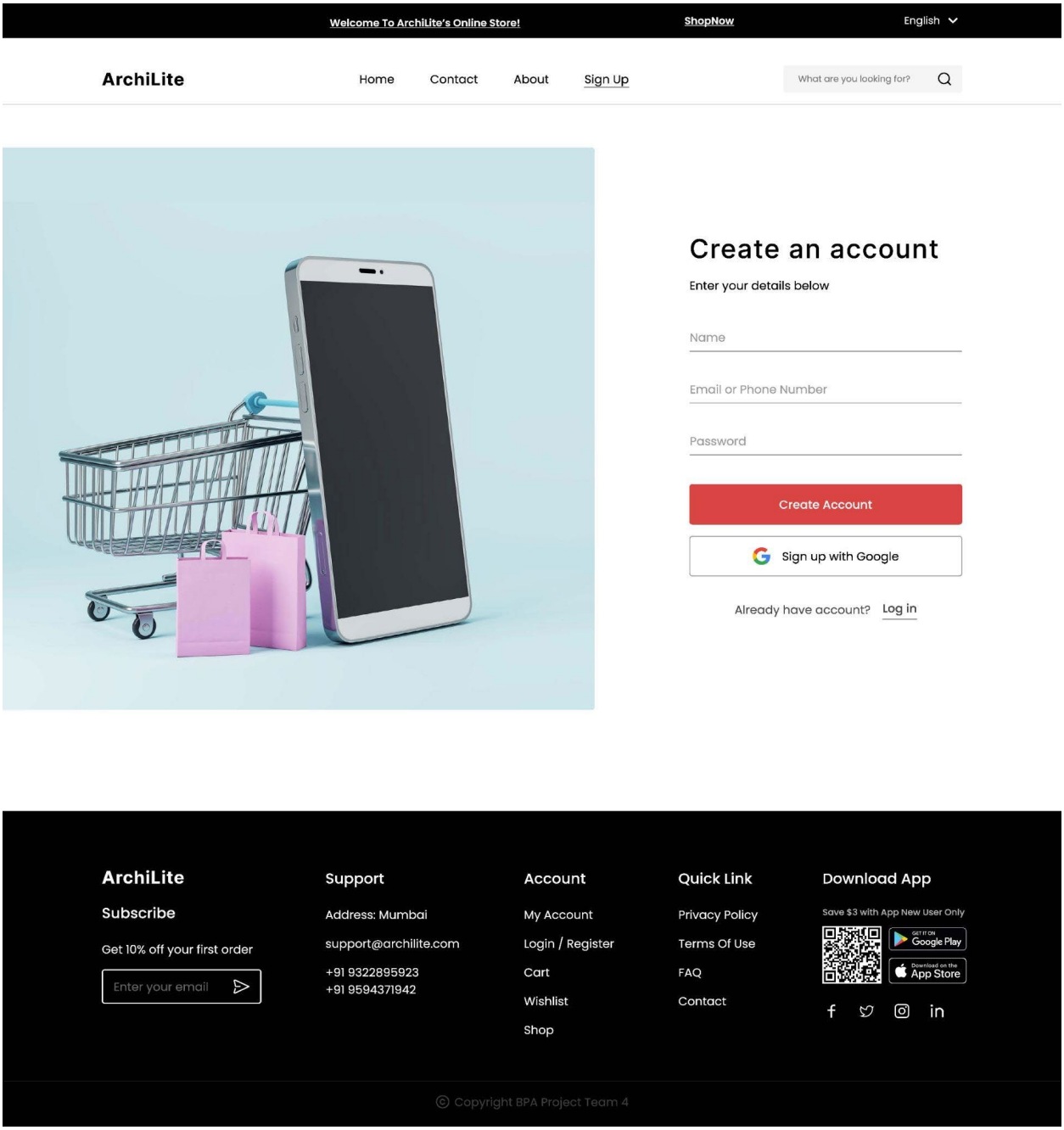
The following screen is the Home Page of the company website. It is accessible to everyone (even if the user does not have an account). It includes details such as:

- Various product categories, from where the customer can view product thumbnails
- Product thumbnails in section for best selling products and in section for newly arrived products
- User can access various options: sign in, cart, account info, about company, contact information etc.



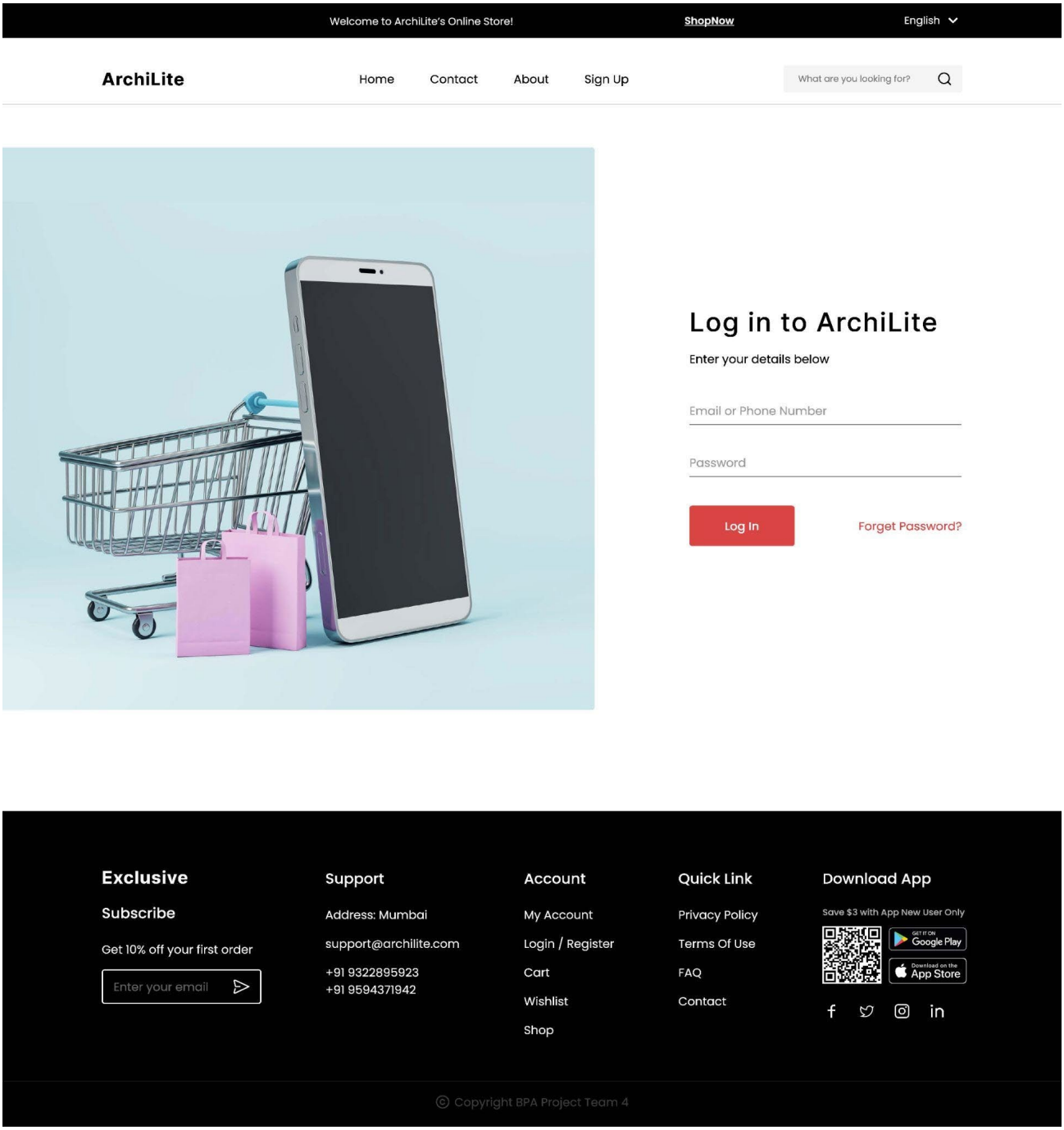
14.2 Sign up Page

The following screen is the Sign Up Page which will be available to both the customers as well as the staff. New account can be created by entering user details such as Name, Email/Phone no and password.



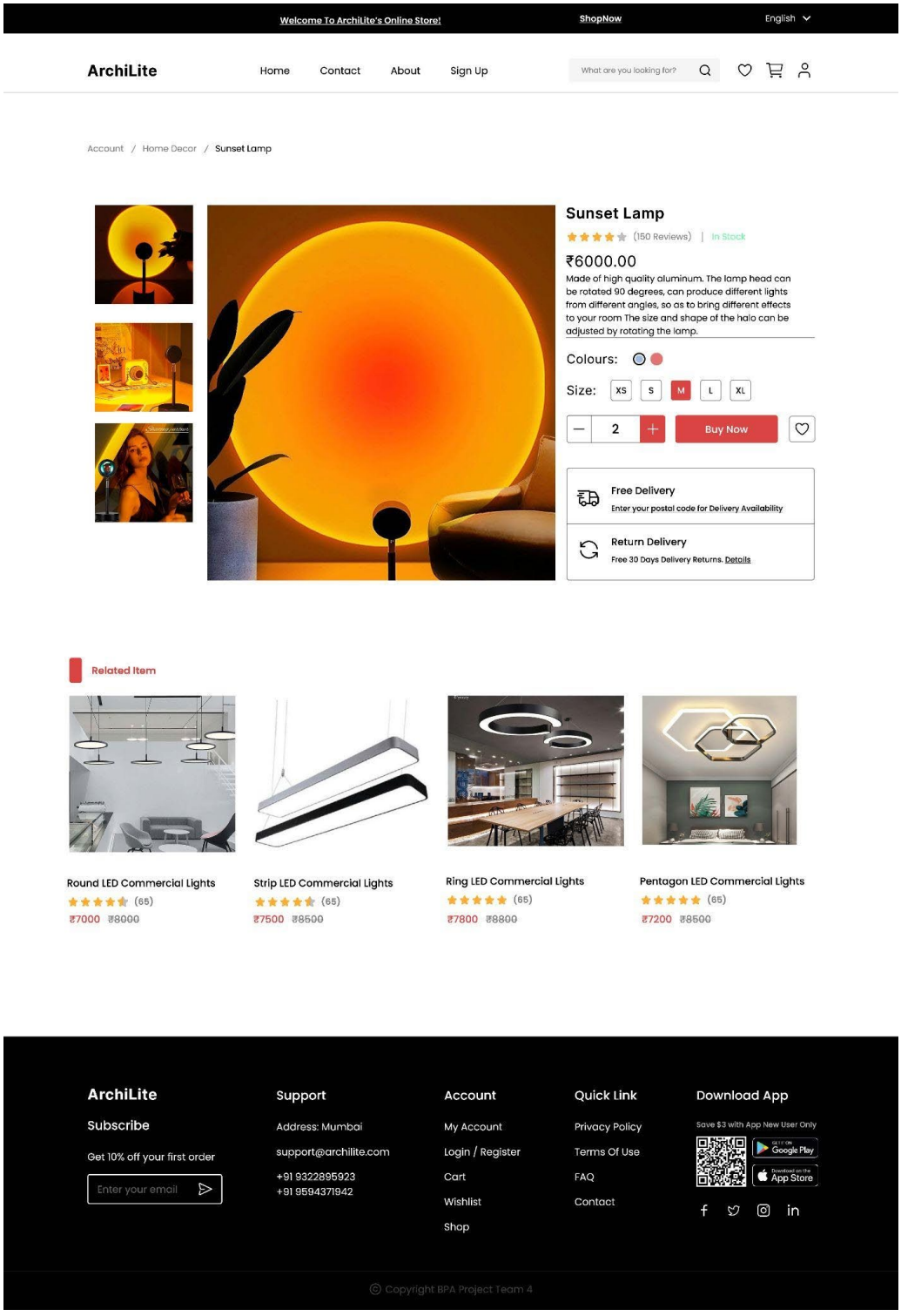
14.3 Log in Page

The following screen is the Log in Page which will be available to both the customers as well as the staff. If the user already has an existing account, the user can log into his account using this page by entering Email/Phone number and associated password.



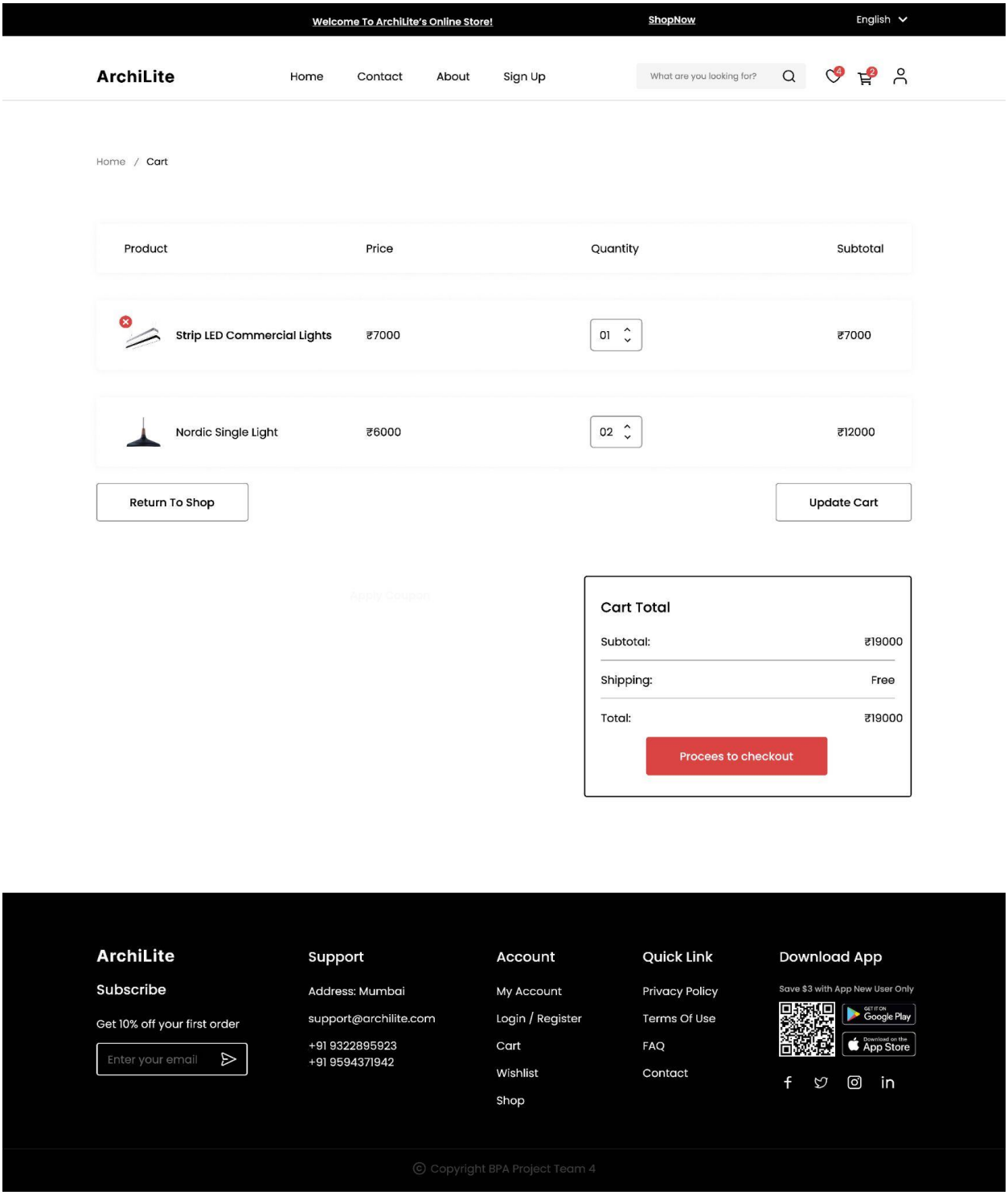
14.4 Product Details Page

The following screen is the Product Details Page which will be available to both the customers as well as the staff. Upon clicking on any product's thumbnail on home page, the following screen will appear with given product's details, availability, price, images, size, colors etc. The user can add the product into cart for processing their order. The user can also see related products to the given product.



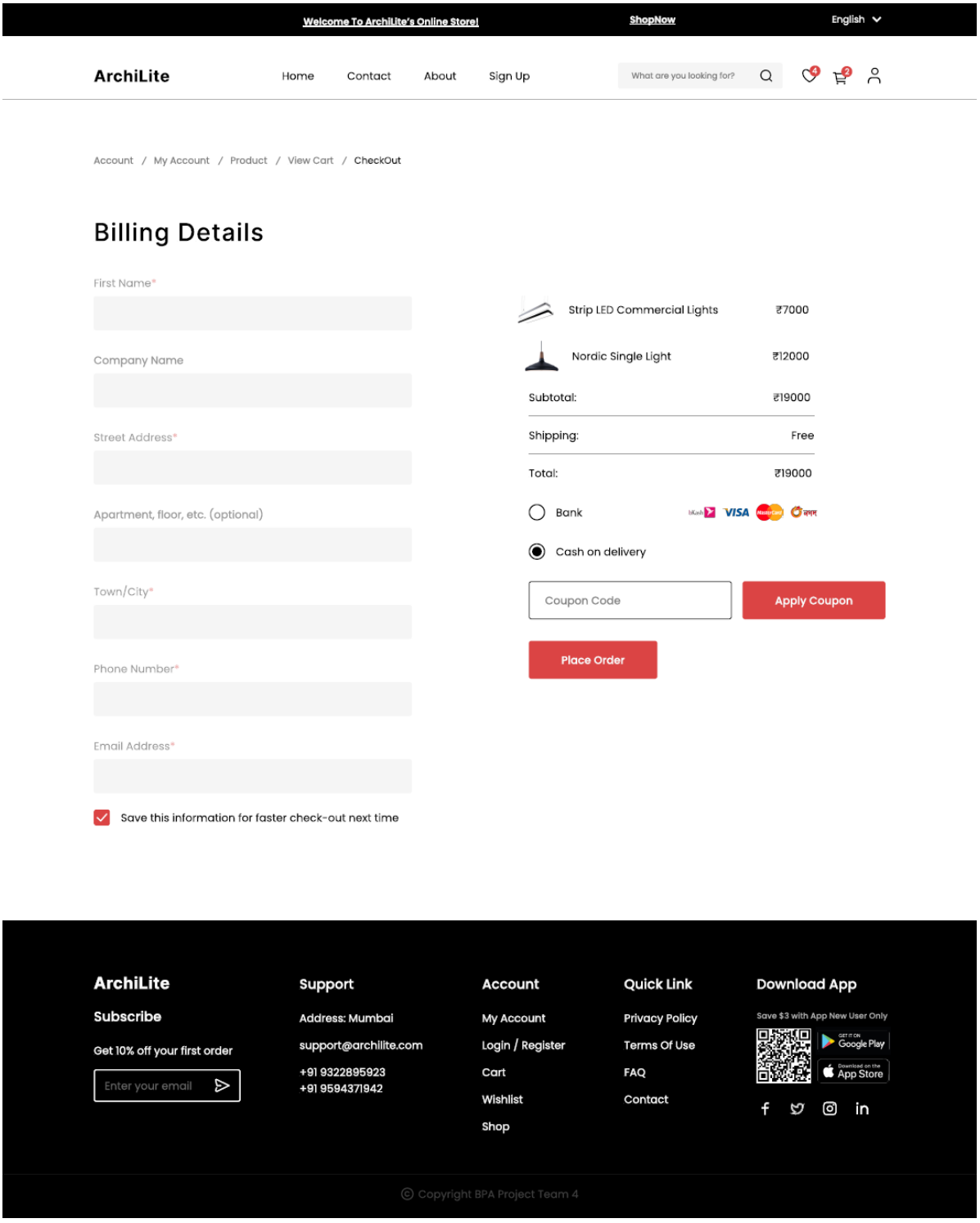
14.5 Cart Page

The following screen is the Cart Page which will only be accessible to users after they log in to their accounts. The user can view the products that he/she added into the account's cart. The user can add products into cart, view the total amount and shipping charges and further process their order.



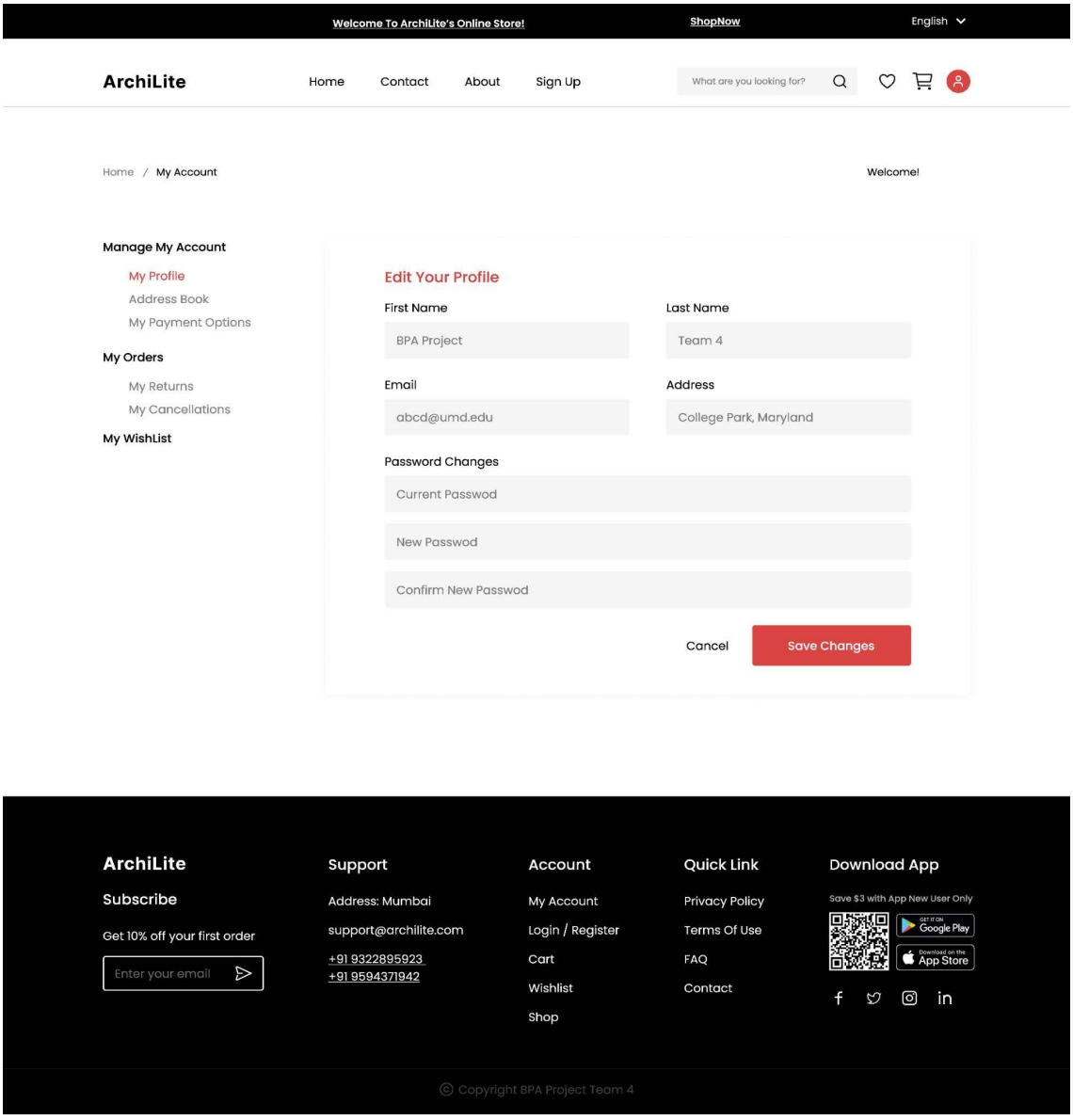
14.6 Checkout Page

The following screen is the Checkout Page which will only be accessible to users after they log in to their account. The user can check out the products that he/she added into the account's cart. The user can provide shipping address and details. The user can choose a payment method and the following screen will link to the payment gateway.



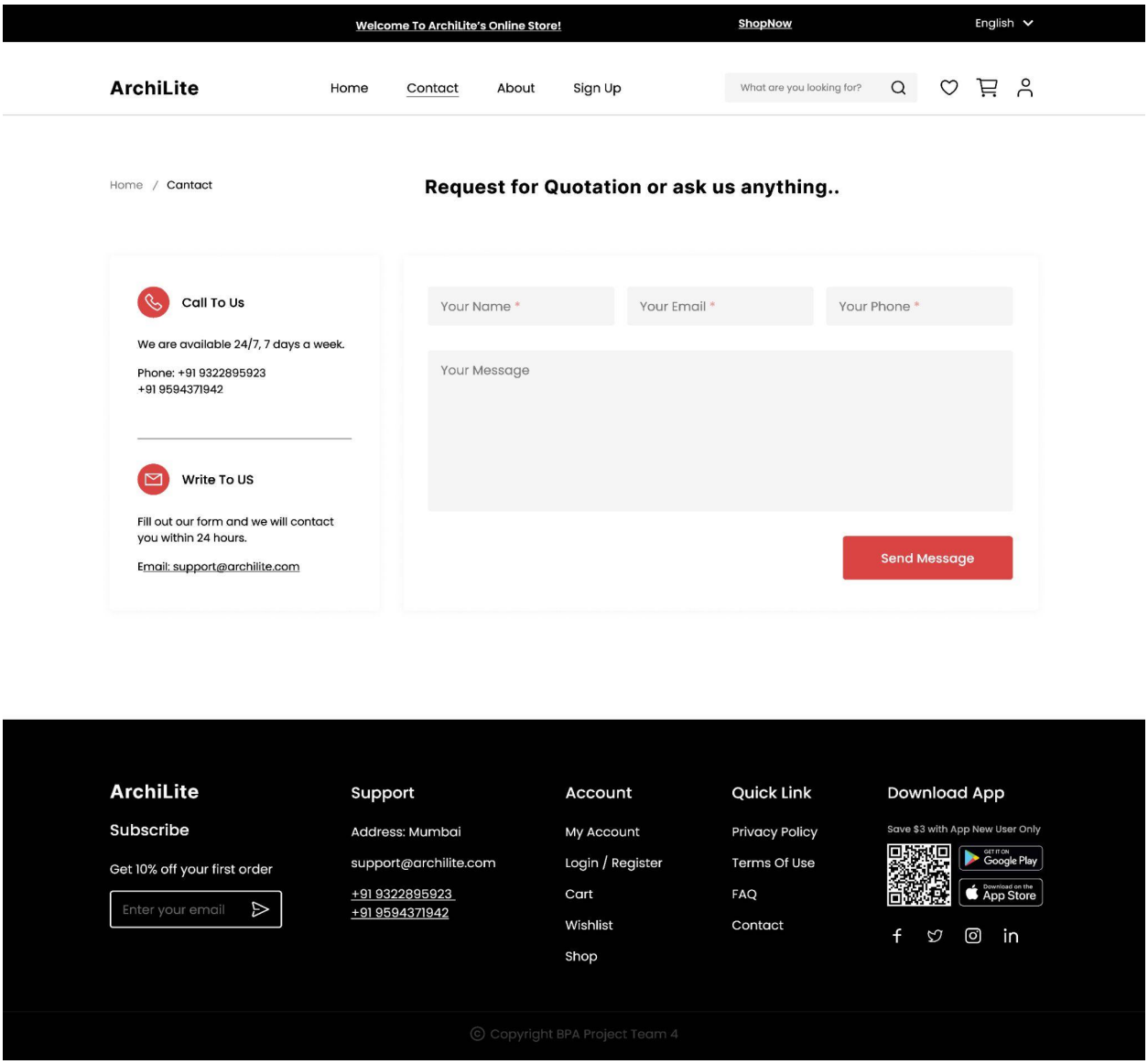
14.7 Account Page

The following screen is the Account Page which will only be accessible to users after they log in to their account. The user can update account information such as password, email address, etc. He/she can view their past orders and returns.



14.8 Request for Quotation / Contact Us Page

The following screen is the Request for Quotation / Contact Us Page. It is accessible to everyone (even if the user does not have an account). The user can request quotations for products and contact the company for any issues/requests via text message after providing their name, email and phone. The company can further contact them using these details for the given issue/request.



15.0 Testing Plans

15.1 Unit Testing

During unit testing, we will be testing individual units of each function or process to ensure that they are working as expected and that there are no issues present. Individual units or components of the portal are tested to detect if there are any flaws in the code during the early stages of testing. Unit testing is an important step in the Software Development Life Cycle as it helps identify issues in early stages of development which may become hard to identify in later stages.

Test Case #	**Test Case Name**	**Test Case Description**	**Inputs**	**Expected Output**
1.	Account Creation with phone number on Sign Up page	Checking creation of user accounts	Valid user phone number, valid user Password	User account must be successfully created
2.	Account Creation with email id on Sign Up page	Checking creation of user accounts	Valid email id, valid user Password	User account must be successfully created
3.	Account Login	Checking login of existing user accounts	Valid existing user email id, valid existing user password	User must be able to log into their account successfully
4.	Edit User password	Checking if user can modify password with existing credentials	First and Last name, email id, Address, valid current and new valid password	User must be able to change password successfully
5.	Edit User password	Checking if user can modify password with existing credentials	First and Last name, email id, Address, invalid current password, new valid password	Error message displayed “Invalid Credentials. Please enter a valid password.”
6.	Edit Cart	Checking if the cart accurately reflects updated information	Increase the quantity by 1 using the up arrow	The cart must update to show the increased quantity and the new subtotal for that product
7.	Removing item from Cart	Checking if an item is deleted from cart	Set the quantity to 0 using the down arrow	The item must be removed from the cart

				and total should be updated
8.	Applying promo	Checking if user can successfully apply promo	Valid promotion code	User must be able to successfully apply promo and the new total reflected after promo discount
9.	Delivery availability	Checking if the user can enter zip code to check availability	Valid zip code	The display should show the “delivery by” date if the zip code is serviceable OR display “Zip Code not serviceable” message if zip code is not available for delivery
10.	Selecting Product Category	Checking if the user can view items in a product category	Click on Product category of choice	It should lead to listings under that product category
11.	Account Creation (White Box Testing)	Appropriate Error messages should be displayed for the following conditions: 1.Invalid email 2.Non-conforming password 3.Already registered email/phone number	Invalid email/non-conforming password/registered email or phone	Appropriate error codes are generated by the code and the error messages are displayed successfully

12.	Account Login (White Box Testing)	Appropriate Error messages should be displayed for the following conditions: 1.Invalid email/phone 2.Invalid password	Invalid email or phone/invalid password	Appropriate error codes are generated by the code and the error messages are displayed successfully

15.2 Stress Testing

Stress testing is used to validate the reliability and stability of software systems at peak system loads. The goal of Stress testing is measuring software on its robustness and error handling capabilities under extremely heavy load conditions and ensuring that software doesn't crash under crunch situations.

Test Case #	**Test Case Name**	**Test Case Description**	**Identify**
1.	Account Creation	Checking creation of user accounts	● Maximum number of accounts that can be created. ● Maximum number of accounts that can be created simultaneously.
2.	Account Login	Checking login of existing user accounts	● Maximum number of logins that can be made per account. ● Maximum number of logins that can be made simultaneously.
3.	Invalid Account Logins	Checking the maximum number of attempts the user has, to log in	● Maximum number of invalid logins attempts per user.

4.	Change of login credentials	Checking the maximum number of times, the user can change credentials within 24 hours	● Maximum number of password changes that the user can make to his profile within a 24-hour window
5.	Addition of Addresses	Checking if user can successfully add address	● Maximum number of addresses the user can add in the Address book
6.	Addition of Payment Options	Checking if user can successfully add payment options	● Maximum number of credit/debit cards that the user can save for faster checkout
7.	Placing order	Checking if the user can place an order	● Maximum number of orders the user can place withing a 24-hour window

15.3 Integration Testing

As part of Integration testing, we evaluate the integrations between different systems like the external payment system and the manufacturing unit. The goal is to test each interface separately and test the navigation between all interfaces to ensure that the payment portal connects successfully with the main inventory management system.

Test Case #	Test Case Name	Test Case Description	Inputs	Expected Output
1.	Inventory Management System and Manufacturing Unit Integration	Checking if the manufactured goods info is sent to Inventory Management system based on depleted inventory notification previously received	Depleted inventory of a product	The Inventory Management system should send a notification to the manufacturing unit which in turn sends notification after production of the depleted product is completed
2.	Click Download App button	Checking if it redirects the user to the Google Play Store or Apple store	Click on Download App button	Should redirect the user to Apple Store or Google Play Store
3.	Payment Portal Redirection	Checking if portal redirects to payment site	Click on the Place order button	The user should be redirected to the payment gateway site
4.	Payment Confirmation	Checking if payment confirmation is received	Make the payment on the payment portal	Payment confirmation should be sent to both admin and the user

15.4 Systems Testing

During systems testing, we intend to make sure the entire system functions as desired; as opposed to testing individual functionalities like before, we aim to ensure that successful use of one functionality prepares the user to use the next functionality. This testing is done by the development team before launching the system for acceptance testing to be done by end users.

Test Case #	Test Case Name	Test Case Description	Prerequisite Function	Expected Output
1.	Account Registration	Users are able to create a new account	Access portal via the Internet	Successful completion leads to login screen; failure leads to error message
2.	User Login Process	User can login using the credentials entered when registering	Registered account	Leads to user's dashboard upon success; error message upon failure
3.	Modifying Cart	Customers are able to edit cart through the portal	Successful Login	Leads to updated cart
4.	Update Login Credentials	Customers are able to change their existing passwords	Successful Login	Successful completion leads to login screen; failure leads to error message
5.	Place Order	Customers can place orders and make payments.	Successful Login	Successful completion leads to an order status page and confirmation message to the user

15.5 Acceptance Testing

During the Acceptance testing phase, a subset of end users is randomly selected to test the UI and system functionality in place to identify any errors or glitches in the UI and system. The users' satisfaction with the UI is evaluated and feedback collected. In the following updates, the feedback is accommodated, and errors fixed.

Test Case #	**Test Case Name**	**Test Case Description**	**Required User Sign-Off**
1.	Login Procedure	Ensure existing users are able to login to the portal using their credentials	● Existing Customers
2.	Account Creation Process	The customers are able to create new accounts to gain access to the portal	● New Customers
3.	Appointment Scheduling, Editing, and Canceling Process	Patients, admin team and medical staff are able to make, edit, and cancel appointments through the portal	● Patients ● Admin/Support ● Doctors and Medical Staff
4.	Browsing items, adding to cart, and placing an order	The customers can browse items, add items to cart and successfully place the order	● Existing Customers
7.	Account and Settings Editing Process	Once an account exists, users can edit their account information (i.e. update passwords, addresses, payment information, preferred name, etc.)	● Existing Customers
8.	Payment process	Customers are able to make the payment using the available payment options to complete placing an order	● Existing Users

16.0 Implementation Plan

16.1 Objectives

Primary: Successfully develop and deploy the Inventory Management System for ArchiLite to streamline inventory management, enhance customer experience, and integrate the system with the existing website and manufacturing plant information system.

Supporting Objectives: Training end users, preparing for system maintenance and operations, and ensuring seamless integration of the Inventory Management System and external payment gateway to ArchiLite existing website.

16.2 Details and Deliverables

Tasks	**Deliverables**	**Developed By**	**Approved By**
Inventory Management System Development	A secure database and web-based interface for managing inventory, orders, and payments	Development Team	Project Manager/Project Sponsor
Website Integration	Seamless integration between the Inventory Management System and ArchiLite's website for browsing products, requesting quotes, and placing orders	Development Team	Project Manager/Project Sponsor
Manufacturing Unit Integration	Real-time communication between the Inventory Management System and the Manufacturing Plant Information System to maintain up-to-date inventory data	Development Team	Project Manager/Project Sponsor
Payment Gateway Integration	Secure and reliable integration with a third-party payment gateway provider for online payment processing	Development Team	Project Manager/Project Sponsor

User Training	Comprehensive training for end users, including ArchiLite employees and customers	Project Manager/Training Team	Project Sponsor
System Maintenance and Operations	Preparation for ongoing system maintenance, updates, and support	Development Team	Project Manager/Project Sponsor

16.3 Implementation Plan Schedule

Task Name	Owner	Date	Status
Development Activities			
Inventory Management System Development	Development Team	3/10/2023	In Progress
Database Development	Development Team	4/5/2023	In Progress
User Interface	Development Team	5/2/2023	In Progress
Website Modification and Integration	Development Team	5/25/2023	Pending
Manufacturing Unit Integration	Development Team	6/5/2023	Pending
Payment Gateway Integration	Development Team	6/15/2023	Pending
Testing Activities			
Testing Planning	System Analyst/Project Manager	6/25/2023	Pending
Unit Testing	Development Team	6/30/2023	Pending
Integration Testing	Development Team	7/1/2023	Pending
Stress Testing	Development Team	7/2/2023	Pending
System Testing	Development Team	7/4/2023	Pending

Acceptance Testing	Development Team	7/5/2023	Pending
Documentation Prep			
Developer Documentation	Development Team	7/3/2023	Pending
User Documentation	Development Team	7/3/2023	Pending
Training			
Training Planning	System Analyst	7/6/2023	Pending
User Training Development	System Analyst	7/7/2023	Pending
User Training Review	System Analyst	7/8/2023	Pending
User Training Rollout	System Analyst	7/9/2023	Pending
Rollout			
System Architecture Planning	Development Team	7/11/2023	Pending
Infrastructure Prep	Development Team	7/12/2023	Pending
Deployment	Development Team	7/13/2023	Pending
Data Migration	Development Team	7/14/2023	Pending
User Set up	Development Team	7/20/2023	Pending
User Training	Development Team	7/23/2023	Pending
Rollback Plan	Development Team	7/30/2023	Pending
Day 0 Deployment	Development Team	7/31/2023	Pending
Support Set up	Development Team	8/2/2023	Pending
Week 1 support plan	System Analyst/Project Manager	8/7/2023	Pending
Week 1 daily review	Development Team	8/14/2023	Pending

Post Rollout	System Analyst/Project Manager	8/22/2023	Pending
Post Deployment Support	Development Team	8/22/2023	Pending

16.4 Migration and Rollback Plan

Since there is no existing system there won't be any migration that will be taking place. However, going forward if there are any issues with the system the Rollback plan between the versions will be as follows:

The first step in the rollback plan should be to identify the cause of the problem and assess its impact on the system. Once the issue has been identified, the next step is to decide whether to roll back to the previous system or continue to troubleshoot the new system.

If the decision is made to roll back to the previous system, the following steps should be taken:

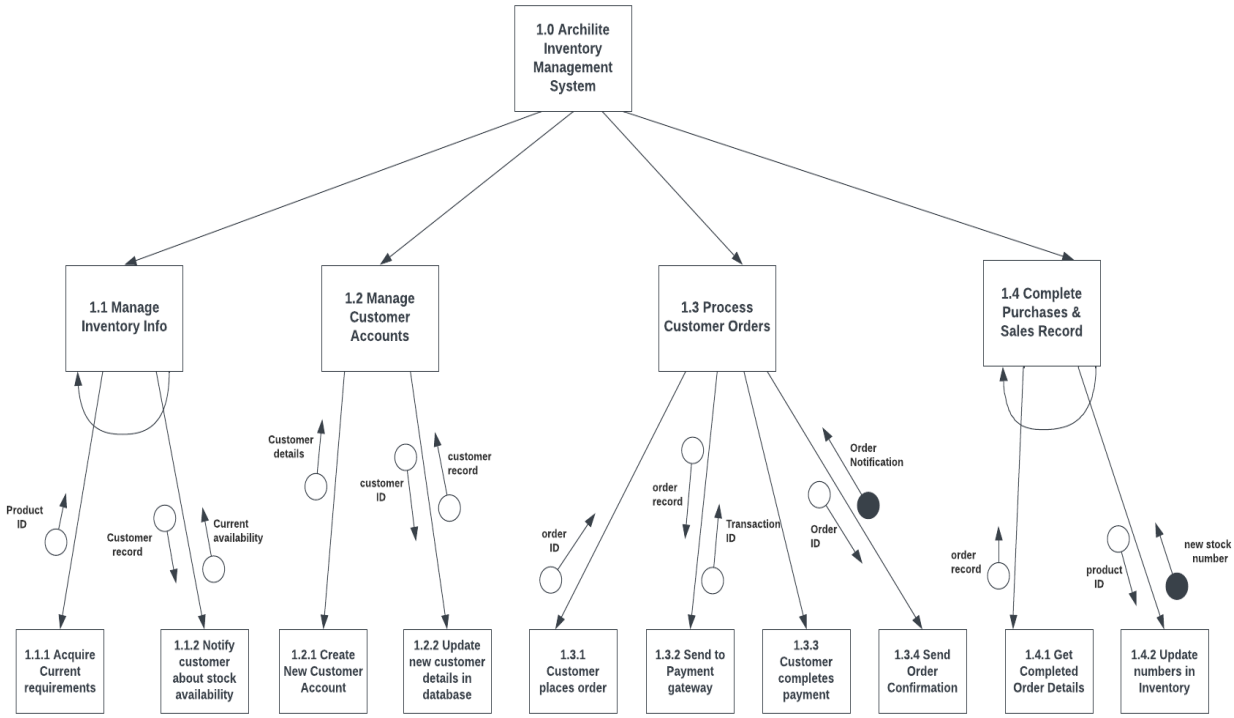
- Stop the migration process and any other activities related to the new system.
- Identify and isolate any data that has already been migrated to the new system.
- Restore the previous system to its previous state, including all data and configurations.
- Verify that the previous system is functioning correctly, and that all data is intact.
- Notify all stakeholders of the rollback and the reasons behind it.
- Develop a plan to address the issue that caused the rollback and re-evaluate the timeline for the new system's implementation.

16.5 Business Continuity Plan

The first step in this process is to identify the risks that are present. In this case natural disasters like floods are the most prevalent. The second step would be ensuring that proper backup and recovery procedures are in place. Since our system for ArchiLite’s will be using a cloud-based system they need to ensure that the backups are in a secure location that is separate from the primary location. They also need to check the availability and reliability of the internet and power supply when deciding where to store their backups.

There also needs to be a clear communication plan when it comes to the disaster recovery plan that all the employees are aware of and understand how to implement. Special training can be conducted to ensure that all employees are aware.
For data management there will be regular backups, data encryption, and access controls to prevent unauthorized access to sensitive information. This will help for data recovery in the event of a data breach or other security incident.

17.0 Structure Chart



Description:

The above structure diagram depicts the 4 major modules that are involved in the system, namely: managing inventory information, managing customer accounts, processing customer orders, and completing purchases & sales records. Each of these major modules act as control modules by themselves and call their respective subordinate modules. Managing inventory information and completing purchases & sales records are repeating modules that are run continuously. They are represented here with the help of a curved arrow. There are several couples depicted in the chart to represent the direction of information passage between the control modules and their respective subordinates. There are data couples like product ID and customer ID passing fields of data and Stamp couples like customer record and order record passing entire record structures. Additionally, there are also control couples such as order notification and new stock numbers.

18.0 Conclusion

After due diligence and discussion with the client, the requirements for the inventory management system have been finalized. This system is the core part of the information system housing various other actors and external systems like payment gateway. A robust information system design is put in place to meet the project objectives and enhance the experience of the customers of ArchiLite. It will also simplify the day-to-day operations for ArchiLite staff with the integration of the manufacturing unit with the inventory management system. The information has also been designed to cater to the long-term needs of ArchiLite and its customers.