



VISVESVARAYA TECHNOLOGICAL UNIVERSITY

Belagavi, Karnataka State, India

A project report on

“Smart Tailor System”

Submitted in partial fulfillment of the degree of

Master of Computer Applications

Submitted by

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DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS (MCA)

BASAVESHWAR ENGINEERING COLLEGE, BAGALKOTE.

2025-2026.



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Belagavi, Karnataka State, India.



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CERTIFICATE

This is to certify that **Ms. Shrusti Mathapati**, bearing USN **2BA24MC043**, has satisfactorily completed the project work entitled '**Smart Tailor System**' submitted to the Basaveshwara Engineering College, Bagalkot, in partial fulfillment of the requirements for the award of Master of Computer Applications (MCA), during the academic year 2025-2026.

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Declaration

I hereby declare that the Final year project entitled “**Smart Tailor System**” is the result of my own work and effort.

This project has been carried out as part of academic requirements for the award of the degree of **Master of Computer Application (MCA) at Basaveshwara Engineering College, Bagalkot during the academic year 2025-2026.**

I further declare that this project has not been submitted for the award of any other degree or diploma and that all the information presented is true to the best of my knowledge and belief.

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Acknowledgment

I would like to express my sincere gratitude to everyone who helped me in the successful completion of my Final Year Project entitled “**Smart Tailor System**”. This project has been carried out as part of the curriculum requirements for the academic year **2025–2026** towards the award of the degree of **Master of Computer Applications (MCA) at Basaveshwar Engineering College, Bagalkot**.

I am deeply grateful to our esteemed **Principal, Dr. B. R. Hiremath**, for providing the necessary facilities and a conducive academic environment to undertake this project.

I extend my heartfelt thanks and sincere appreciation to my **Project Guide, Prof. C. M. Jangin**, for his continuous guidance, valuable suggestions, and encouragement throughout the project.

I would also like to thank our **Project Coordinator, Prof. C.M.Jangin**, for his cooperation and support, and the **Head of the Department, Prof. S.M.Magi.**, for his insightful feedback and encouragement that enhanced the quality of my work.

Finally, I express my gratitude to my family and friends for their support and encouragement during the course of this project.

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Abstract

The Smart Tailor System is a web-based tool that aims to modernize traditional tailoring services. It creates a single platform for managing orders, storing measurements, and facilitating customer-tailor interaction. The system tackles problems like misplaced measurements, a lack of order clarity, manual record-keeping, and limited communication between customers and tailors.

Built with modern web technologies, the Smart Tailor System provides essential features. These include user registration, measurement management, design selection, order placement, order tracking, and delivery scheduling. The platform also includes secure online payment options for a smooth and reliable customer experience.

With a responsive interface and flexible design, the system ensures growth, effective data management, and real-time updates for both customers and tailors. Manual unit and integration testing confirmed the system's functionality, accuracy, and overall usability.

By centralizing tailoring tasks like measurements, stitching orders, and delivery schedules, the Smart Tailor System improves service quality, boosts customer satisfaction, and aids the digital shift of small and medium tailoring businesses.

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Introduction

The tailoring industry is a vital and traditional part of the apparel and fashion sector. It offers jobs to many people and plays a significant role in providing custom-tailoring services to customers. You can find tailoring shops in both rural and urban areas. They cater to customers by offering personalized stitching, alterations, and design modifications tailored to individual preferences. Small and medium-sized tailoring businesses are the backbone of this industry and greatly support the local economy.

Despite its importance, the tailoring the industry is still in the early stages of using it modern digital technologies. Most tailoring shops still rely on manual methods to manage their daily activities. Customer details, body measurements, order information, and payment records are usually maintained in handwritten registers or notebooks. Order updates are often communicated verbally, and delivery dates are remembered based on experience rather than proper tracking systems.

Maintaining records manually creates several problems. Handwritten data can be lost, damaged, or become unreadable over time. Registers may be misplaced, and important customer measurements might not be available when needed. In busy tailoring shops, managing multiple orders at the same time becomes difficult without a proper tracking mechanism. Manual billing and payment calculations may also lead to mistakes, resulting in financial discrepancies and customer dissatisfaction. These issues reduce the productivity of tailors and affect the quality of service provided to customers.

In the last few years, businesses across different industries have transformed the way they operate by adopting digital tools. Customers are now more aware, connected, and demanding. They expect accurate measurements, timely delivery of orders, transparent pricing, and regular updates on order status. With the availability of smartphones and internet services, customers prefer systems that offer convenience and reliability. Businesses that do not meet these expectations may find it difficult to compete with more organized and technology-focused service providers.

However, many small and medium-sized tailoring shops struggle to adopt digital solutions. This is mainly due to limited technical skills, tight budgets, and the lack of software designed specifically for tailoring work. Most general billing or inventory systems do not support important tailoring needs, such as managing customer measurements and tracking orders individually. As a result, many tailors continue to relay on traditional manual methods, even though they are aware of their drawbacks.

The Smart Tailor System is proposed to address these challenges by providing a simple, efficient, and web-based digital platform designed exclusively for tailoring businesses. The main objective of this system is to automate and simplify key tailoring activities such as customer registration, measurement recording, order management, billing, payment tracking, and delivery monitoring. By digitizing these processes, the system helps tailors manage their work in a more organized and professional manner.

The system allows tailors to store complete customer information along with accurate body measurements in a centralized database. Once stored, these measurements can be reused for future orders, saving time and avoiding the need to take measurements repeatedly. This feature improves efficiency and ensures consistency in stitching quality. The order management module helps in tracking each order from booking to stitching and final delivery, reducing confusion and delays.

The Smart Tailor System helps improve transparency for customers. It allows them to easily check their order details, payment status, and expected delivery dates. This reduces the need for frequent phone calls or visits to the shop to ask about order progress. Regular updates also improve communication between the tailor and the customer, which helps build trust and increases customer satisfaction.

Billing and payment management is another key feature of the system. All transactions are stored digitally, which helps reduce calculation mistakes and ensures accurate financial records. Tailors can easily monitor pending payments, completed sales, and the overall financial health of their business. This makes record keeping simpler and supports better financial planning.

To keep the system secure and well-organized, the Smart Tailor System uses role-based access. Each user such as administrators, tailors, and customers can only access features related to their role. Administrators are responsible for managing users, tracking orders, and generating reports. Tailors update customer measurements and order progress, while customers can view their own order details. This clear separation of access helps improve security and makes daily operations more efficient.

The Smart Tailor System is built using modern web technologies along with a well-structured database, which ensures reliable performance, scalability, and strong data security. It is designed to be easy to use and can be accessed through any standard web browser. This makes it suitable even for tailoring businesses with little technical experience. As the business grows, the system can also be expanded to add new features in the future.

In conclusion, the Smart Tailor System provides an effective solution to the problems faced by traditional tailoring businesses. By replacing manual processes with a digital system, it improves accuracy, efficiency, transparency, and customer satisfaction. The proposed system helps small and medium tailoring businesses modernize their operations, reduce workload, and compete successfully in today's digital environment. This project demonstrates how technology can be used to enhance traditional industries and deliver better services to customers.

2. Literature Survey

Smart Tailor System

A literature survey presents a detailed study of existing systems, research works, and technologies related to tailoring management and automation. It helps in understanding how traditional and modern systems function, their advantages, limitations, and the gaps that motivate the development of the proposed Smart Tailor System. Several studies and applications have focused on digitizing small businesses, customer management, and order processing, but tailoring-specific solutions are still limited.

2.1 Existing Systems

1. Traditional Tailoring Management System

In conventional tailoring shops, most operations are handled manually. Customer details, measurements, orders, and payment information are recorded in physical registers or notebooks. Order progress is tracked verbally, and delivery dates are remembered based on experience.

Features:

- Manual customer record maintenance
- Handwritten measurement registers
- Verbal order tracking
- Manual billing and payment calculation

Limitations:

- High chances of data loss and errors
- Difficult to manage multiple customers and orders
- No proper order status tracking
- Poor data security and record retrieval

2. Computerized Billing and Customer Management Systems

Some tailoring shops use basic computer-based billing software or generic customer management systems. These systems help generate bills and store customer contact details.

Features:

- Digital billing and invoice generation
- Basic customer information storage
- Payment record maintenance

Limitations:

- No measurement management
- No order-wise tailoring workflow
- Not customized for tailoring needs
- Limited reporting and tracking features

3. Apparel and Garment Management Systems

Large garment industries use advanced apparel management systems to handle production planning, inventory, and supply chain operations.

Features:

- Automated production workflows
- Inventory and material tracking
- Employee and process management

Limitations:

- Complex and expensive
- Designed for mass production, not custom tailoring
- Requires technical training
- Not suitable for small and medium tailoring shops

4. Mobile-Based Tailoring Applications

Recent research and startups have introduced mobile applications for tailoring services. These allow customers to place orders and tailors to manage requests digitally.

Features:

- Mobile-based order booking
- Customer-tailor communication
- Digital service requests

Limitations:

- Limited functionality for detailed measurements
- Poor data organization
- Not suitable for desktop-based shop environments
- Security and data backup issues

2.2 Problems in Existing Systems

Despite technological advancements, existing tailoring systems suffer from several challenges:

- **Manual Dependency:** Heavy reliance on handwritten records leads to errors and inefficiency.
- **Data Loss:** Physical registers are prone to damage, loss, or misplacement.
- **Lack of Measurement Storage:** Measurements are not stored digitally for reuse.
- **Poor Order Tracking:** No real-time visibility of order status.
- **Customer Dissatisfaction:** Delays and miscommunication affect customer trust.
- **Limited Scalability:** Existing systems cannot support business growth.
- **No Role-Based Access:** Lack of structured access control for staff and administrators.

2.3 Available Solutions and Their Features

Several digital solutions attempt to address some of these issues:

1. Web-Based Business Management Systems

Generic web applications manage customers, orders, and payments for small businesses.

Features:

- Centralized data storage
- Web access
- Digital records

Drawbacks:

- Not tailored to tailoring workflows
- No measurement-specific modules

2. Point of Sale (POS) Systems

POS systems are used for billing and transaction handling.

Features:

- Fast billing
- Payment tracking
- Sales reports

Drawbacks:

- No stitching or order lifecycle tracking
- No customer measurement history

3. Role-Based Business Applications

Some systems implement role-based access control for security.

Features:

- Admin and staff access separation
- Secure login

Drawbacks:

- Not integrated with tailoring-specific features

2.4 Proposed solution(Generic)

The proposed Smart Tailor System is designed to overcome the limitations of existing systems by offering a complete, tailoring-specific digital platform.

Key Components:

1. Customer Registration Module

- Stores customer personal details securely
- Maintains long-term customer history

2. Measurement Management System

- Digital storage of body measurements
- Reusable for future orders
- Ensures accuracy and consistency

3. Order Management System

- Order creation with stitching details
- Order status tracking (Received, In Progress, Completed, Delivered)
- Delivery date monitoring

4. Billing and Payment Module

- Automated bill generation
- Payment status tracking
- Financial transparency

5. Role-Based Access Control

- Administrator access for monitoring and reporting
- Tailor access for order and measurement updates
- Customer access for order and payment status

6. Web-Based Interface

- User-friendly dashboard
- Accessible through browsers
- No need for complex installations

2.5 Advantages of the Proposed System

● Reduced Manual Work

Most everyday tasks, including registering customers, storing measurements, managing orders, and generating bills, are carried out automatically by the system. This lowers the reliance on manual record-keeping and significantly reduces errors that can occur due to human mistakes.

● Improved Accuracy

Since all measurements and billing details are entered and stored digitally, the system maintains consistent and correct information. Accurate data leads to better garment fitting and correct pricing, which benefits both the tailor and the customer.

● Faster Operations

The system allows users to create orders, update their status, and track delivery schedules quickly. This streamlines the workflow and enables tailors to handle multiple orders smoothly, avoiding delays or mix-ups.

- **Secure Data Handling**

The system keeps customer and business information safely in a protected database. Only authorized users can access it, which helps safeguard sensitive data from being lost, damaged, or misused.

- **Better Customer Experience**

Customers can conveniently monitor the status of their orders and get updates on time. Stored measurements make it easy to place repeat orders without measuring again, offering greater convenience and building customer confidence.

- **Business Growth Support**

The system can manage a growing number of customers and orders. As the tailoring business grows, the software continues to work smoothly and efficiently without needing significant modifications.

- **Cost-Friendly Solution**

By reducing paperwork, saving time, and avoiding errors, the Smart Tailor System lowers operational expenses. It provides a practical and affordable digital solution suitable for small and medium tailoring shops.

3. Problem Definition

3.1 Problem Definition

The tailoring industry is vital for offering personalized clothing services to customers. However, many small and medium-sized tailoring shops still rely on traditional manual methods to manage their daily operations. Customer details, body measurements, orders, billing, and delivery schedules are often recorded by hand or kept verbally. While this method has been used for years, it creates several challenges in today's fast-moving and competitive market.

One of the major problems in traditional tailoring systems is inefficient customer data management. Customer details and measurements are stored in physical notebooks, which are difficult to organize and retrieve. Over time, these records may get damaged, lost, or become unreadable. When customers place repeat orders, tailors often struggle to find previous measurements, leading to repeated measurement collection and inconsistencies in stitching quality.

Another major problem is the lack of proper order tracking. In manual systems, there is no organized way to monitor the progress of orders. Tailors often rely on memory or verbal communication to keep track of order status and delivery dates. This can cause significant issues when handling multiple orders at once, leading to missed deadlines, delayed deliveries, and unhappy customers..

Billing and payment management is also a challenge in traditional tailoring businesses. Manual billing calculations increase the chances of errors, incorrect totals, and disputes. There is no proper record of pending payments, completed transactions, or overall financial performance. This lack of financial transparency affects business planning and growth.

Lack of transparency and communication between tailors and customers is another major concern. Customers often have no way to know the status of their orders unless they physically visit the shop or make repeated phone calls. This causes inconvenience to customers and increases workload for tailors.

Additionally, data security and privacy are completely absent in manual systems. Physical records can be accessed by anyone, leading to misuse or loss of sensitive customer information. There is no backup mechanism to recover data in case of accidents such as fire, water damage, or theft.

As the demand for digital services increases, customers now expect precise work, on-time delivery, and clear communication. Traditional tailoring methods struggle to meet these expectations, making it harder for small tailoring businesses to compete with modern, technology-driven service providers.

3.2 Proposed Solution(Specific)

The proposed solution is a Smart Tailor System that transforms the traditional manual tailoring process into a fully digital and automated platform. Instead of maintaining handwritten records, the system provides an online environment where all tailoring activities are managed efficiently. Customers can register in the system, place tailoring orders from anywhere, enter their body measurements, select required services, and make payments online. This reduces the need for repeated visits to the tailoring shop and saves time for both customers and tailors.

The system also helps tailors and administrators manage their work effectively. Tailors can view all assigned orders in a single dashboard, update order status, and track delivery timelines easily. The admin plays a key role by managing users, monitoring orders and payments, and ensuring smooth system operations. By integrating customers, tailors, and administrators into one platform, the Smart Tailor System improves accuracy, transparency, and convenience, ultimately providing faster service and better customer satisfaction.

Core Features:

- **Customer Profile Management** – Stores customer details, measurements, and order history securely.
- **Order Management System** – Tracks stitching orders from booking to delivery.
- **Measurement Recording** – Accurately saves measurements for future use.

- **Smart Scheduling and Alerts** – Notifies tailors and customers about delivery dates and updates..
- **Billing and Payment Tracking** – Manages cost details and payment status.
- **User-Friendly Interface** – Easy to use for both tailors and customers.
- **Time-Saving Automation** – Reduces paperwork and manual errors.
- **Improved Customer Satisfaction** – Ensures timely delivery and accurate stitching.

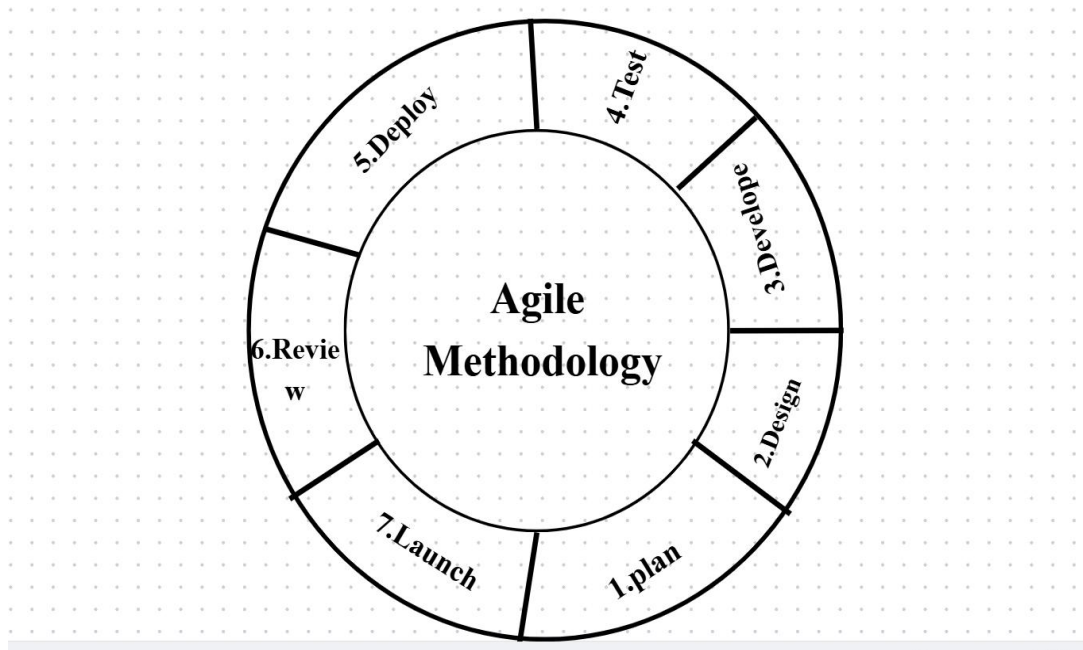
3.3 Development process

Agile Methodology:

The Agile methodology is a flexible, step-by-step approach used to develop the Smart Tailor System. Rather than creating the entire system at once, the project is broken into smaller sections called sprints. Each sprint produces a functional part of the system.

Agile allows continuous improvement by taking feedback from users (tailors and customers) at every stage. This approach is ideal for the Smart Tailor System because requirements may change based on tailoring business needs and customer expectations.

Agile Process Steps:



4. Software Requirements Specification

4.1 Purpose

The primary goal of the Smart Tailor System is to digitalize and automate the everyday operations of a tailoring business. Traditional tailoring shops rely heavily on handwritten records, verbal instructions, and manual calculations, which can lead to mistakes, delays, and a less satisfactory experience for customers.

This system is created to help tailors handle customer information, securely store body measurements, track orders, generate bills, and monitor delivery status—all through a single web-based platform. The Smart Tailor System is designed to reduce manual work, improve accuracy, save time, and boost customer satisfaction by offering a well-organized and dependable digital solution.

Scope

The scope of the Smart Tailor System includes the development of a web-based application that supports all major tailoring operations. The system allows tailors and shop administrators to register customers, record and update measurements, place and track orders, manage payments, and generate bills.

The application will keep all data safely in a centralized database, making it easy to access and maintain records over time. Role-based access ensures that administrators, tailors, and staff can only use the features that relate to their roles. The system is designed for small and medium tailoring businesses and can be used for any type of garment.

4.2 Product Overview

The Smart Tailor System consists of multiple integrated modules that work together to support tailoring workflows:

- [Admin Module](#)

The admin has full control of the system, including managing users such as tailors and staff, accessing all customer information, overseeing orders, and creating business reports.

- [Tailor Module](#)

Tailors can take stitching orders given by admin, track progress, and update order status.

- [Customer Management Module](#)

Stores customer personal details such as name, contact number, address, and measurement history for future reference.

- [Order & Billing Module](#)

Handles order creation, garment details, stitching charges, payment status, and bill generation.

- [Database System](#)

All data such as customers, measurements, orders, and payments are securely stored for easy retrieval and auditing.

4.3 Functional Requirements

The Smart Tailor System must provide the following functionalities:

- [Secure Login and Authentication](#)

The system must support secure login for admins and tailors using usernames and passwords. Unauthorized users should not be allowed access.

- [Customer Registration](#)

The system must allow tailors to add new customers with basic details such as name, mobile number, and address.

- [Measurement Management](#)

The system should allow storing, editing, and reusing customer body measurements accurately for different garments.

- [Order Management](#)

Tailors must be able to create new orders by selecting customers, garment types, delivery dates, and stitching requirements.

- [Order Tracking](#)

The system should track the order status such as “Pending”, “In Progress”, “Completed”, and “Delivered”.

- [Billing and Payment Tracking](#)

The system must calculate stitching charges, record advance and final payments, and display payment status clearly.

- [Report Generation](#)

Admins should be able to view reports related to orders, income, pending deliveries, and customer details.

4.4 Performance Requirements

To ensure smooth functioning and a reliable experience for tailors, customers, and administrators, the Smart Tailor System must meet the following performance standards.

1. Application Speed and Responsiveness

The system should react quickly to user actions such as logging in, adding customer details, entering measurements, placing orders, and generating bills. These activities should be completed within 3 to 5 seconds during normal operation.

Notifications related to order updates or delivery status should appear without noticeable delay. Uploading and retrieving customer or garment information should also be handled efficiently based on network conditions.

2. Multi-User Handling Capability

The application should support simultaneous access by multiple users, including tailors and administrators, without affecting performance.

As the number of users and orders grows, the system should continue to operate smoothly. The architecture must allow easy expansion to accommodate future business growth.

3. Processing of Business Operations

Key actions such as customer registration, measurement updates, order creation, payment entry, and bill generation should be processed immediately and stored correctly in the database.

Tasks such as updating order status or generating invoices are expected to be completed within 3 to 5 seconds, even when multiple users are using the system simultaneously.

4. Information Storage and Access Efficiency

The system should be capable of storing large volumes of data, including customer profiles, measurements, order records, and payment history, without performance degradation.

Searching records, retrieving previous measurements, or generating reports should take no more than 10 seconds, even with extensive data.

5. System Availability and Recovery

The Smart Tailor System should be available almost all the time, ensuring a minimum of 99% uptime.

In case of maintenance or unexpected system failure, recovery should be quick to minimize disruption to daily tailoring activities.

4.5 Exception Handling

To maintain system stability and user confidence, the Smart Tailor System must be able to manage unexpected errors gracefully.

Common Error Scenarios and Handling

1. Authentication Errors

If incorrect login details are entered, the system should show clear and helpful error messages. Repeated failures may trigger temporary security restrictions.

2. Incomplete or Incorrect Order Information

If mandatory fields such as delivery date or garment type are missing or invalid, the system should prompt the user to correct the details before proceeding.

3. Duplicate Data Entries

The system should prevent repeated customer records using the same contact details to maintain data accuracy.

4. Technical Failures

In cases of server or database issues, the system should display informative messages instead of crashing and should resume normal operation once the issue is resolved.

5. Input Validation Issues

If required fields like customer name or measurements are left blank, the system should guide the user to complete them correctly.

4.6 Acceptance criteria

User Authentication and Security

- The system should support smooth user registration, login, and logout using valid login details.
- Password information must be stored safely, and incorrect login attempts should display proper warning messages.
- Necessary security controls should be applied to protect the system from unauthorized access.

Customer Details and Measurement Handling

- Tailors must be able to create, update, and view customer profiles without system errors.
- Each customer profile should maintain accurate body measurements for repeated use in future stitching orders.
- Measurement records must remain properly connected to the correct customer at all times.

Order Creation and Delivery Tracking

- The system should enable tailors to place stitching orders by selecting customer information, garment type, and expected delivery date.
- Order progress must be updated correctly through stages such as Pending, In Progress, Completed, and Delivered.
- Delivery timelines should be monitored to ensure orders are completed on time.

Pricing and Payment Management

- Stitching costs must be calculated accurately based on the order specifications.
- The system should allow recording of advance payments as well as final payment details.
- Payment status should be clearly displayed for both tailors and administrators.

Data Storage and Record Control

- The application should support saving and accessing important records such as bills and measurement details.
- Incorrect, missing, or duplicate data entries must be identified and restricted from being stored.

Interface Design and User Experience

- The system's interface should be simple and easy to use, even for users who have little or no technical experience.
- The application must run smoothly on desktops and tablets without design or layout problems.
- Alerts related to order progress and delivery dates should be generated reliably.

System Administration and Monitoring

- Administrators should be able to manage accounts for tailors and other users of the system.
- Admins should be able to view system usage details, order summaries, and basic reports.
- The system should provide tools for monitoring overall performance and data accuracy.

4.7 Design Hints and Guidelines

To build a dependable, scalable, and user-friendly Smart Tailor System, the following design principles should be followed.

- **Interface Design Principles**

The interface should be simple, clean, and easy to understand, allowing tailors with basic technical knowledge to use the system confidently.

Responsive design should be applied so the system works well on desktops and tablets. Clear menus, icons, and dashboards should support smooth navigation.

- **Data Structure and Management**

A well-organized relational database should be used to avoid data duplication and ensure accuracy.

Proper indexing techniques should be applied to improve data search speed. Relationships between tables such as Customers, Orders, Measurements, and Payments must be clearly defined.

- **Application Structure and Architecture**

The system should follow a modular development approach, where each major feature is built as an independent unit.

This structure supports easier debugging, maintenance, and future improvements. The architecture should also allow incremental updates without affecting existing features.

- **Security and Protection Measures**

Passwords and sensitive data must be protected using secure encryption methods.

All inputs should be validated to prevent security vulnerabilities. Secure communication protocols should be used to protect data during transmission.

- **Performance Optimization Strategies**

Efficient database queries and optimized backend logic should be implemented to ensure fast system performance.

Frequently accessed data may be cached to improve response time and reduce system load.

- **Future Expansion Considerations**

The system should be designed to support future enhancements such as mobile applications, automated notifications, and intelligent tailoring suggestions.

Cloud-based deployment may be considered to improve scalability, availability, and system maintenance.

4.8 Glossary of terms

- **Admin**
The system user with complete control over the Smart Tailor System, responsible for managing users, accessing reports, and overseeing system activities.
- **Billing Module**
The part of the system responsible for calculating stitching charges, recording payments, and generating bills.
- **Customer**
A person who places stitching orders and whose details and measurements are stored in the system.
- **Customer Profile**
A digital record that stores customer information such as name, contact details, and measurement history.
- **Database**
A structured storage system used to save customer details, measurements, orders, and payment records securely.
- **Delivery Date**
The expected date on which a stitched garment is to be delivered to the customer.
- **Login**
The process by which a registered user enters valid credentials to access the system.
- **Measurement Records**
Stored body measurements of a customer used for stitching garments accurately.
- **Order**
A request created for stitching, including customer details, measurements, and delivery date.
- **Order Status**
The current stage of an order, such as Pending, In Progress, Completed, or Delivered.
- **Payment Status**
Indicates whether a payment is pending, partially paid, or fully paid.
- **Role-Based Access**
A security method that limits system access based on the user's role.

- **User Interface (UI)**

The design and layout of the system that enables users to interact with the application.

- **Validation**

The process of verifying user input to make sure it is accurate and complete before the data is saved.

4.9 Technology Requirements

Software Requirements Specification(SRS)

Hardware requirements	
Ram	8GB or above
Hard Disk	256 GB SSD OR ABOVE
Processor	Intel core i3 or above

- Software requirement

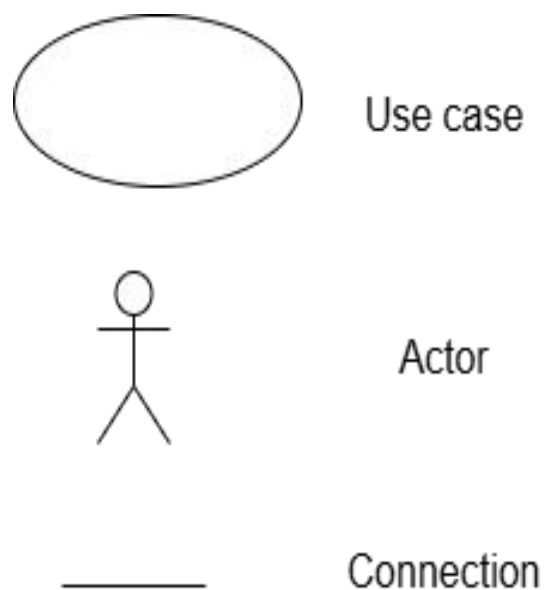
Operating system	Windows 11 or above
Frontend	React.js
Backend	python(3.12),flask
Database	MySQL
IDE	Visual Studio Code

5. SYSTEM DESIGN

5.1 Use Case Model

A use case model explains how users interact with the Smart Tailor System and what actions they can perform. It focuses on the functional behavior of the system from the user's point of view, rather than technical implementation details.

The following notations are used in use case:

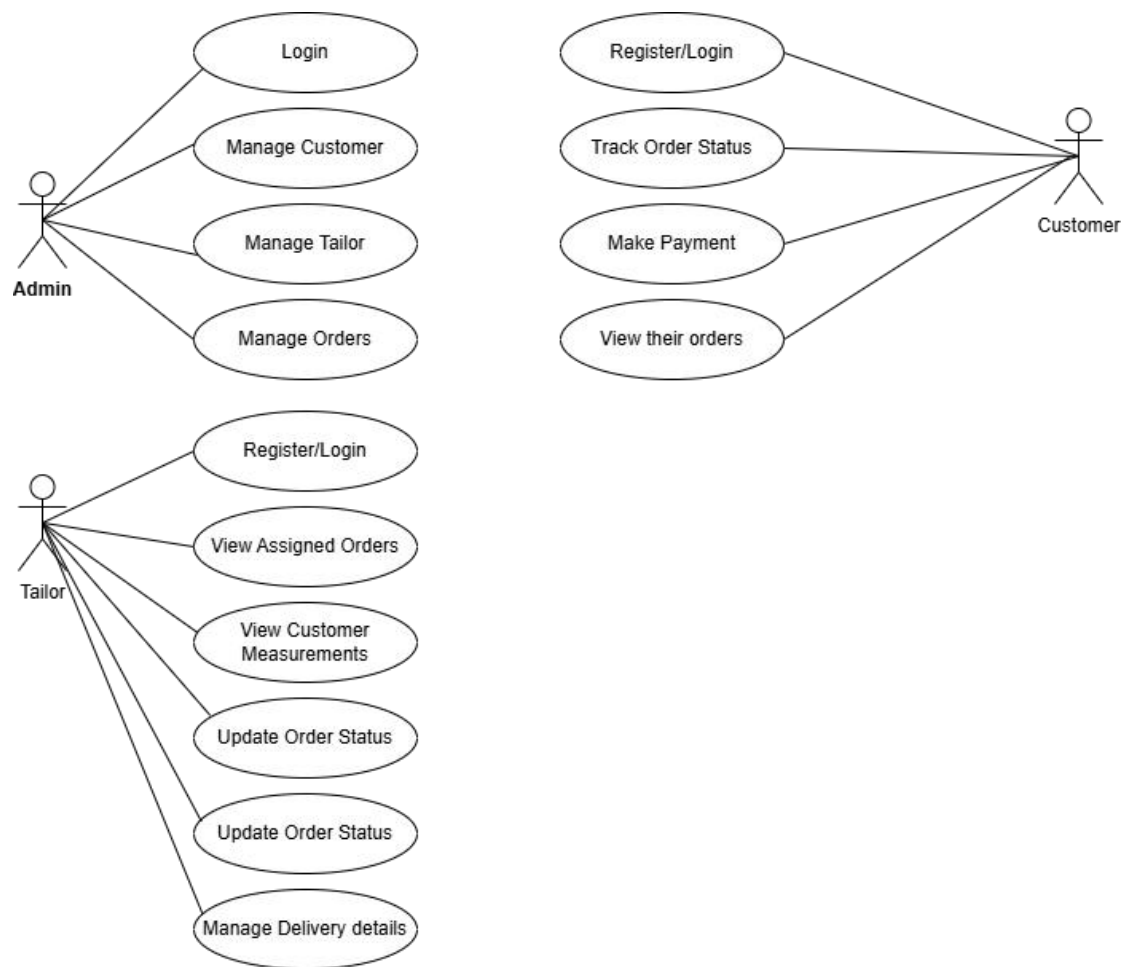


In a use case diagram:

- Actors represent different types of users of the system.
- Use cases represent the services or actions provided by the system.
- The diagram shows how actors and use cases are connected.

The Smart Tailor System brings together all tailoring activities—like managing customers, storing measurements, processing orders, and handling billing—into one platform. The following use cases explain how each user interacts with the

system.



Actors in the Smart Tailor System

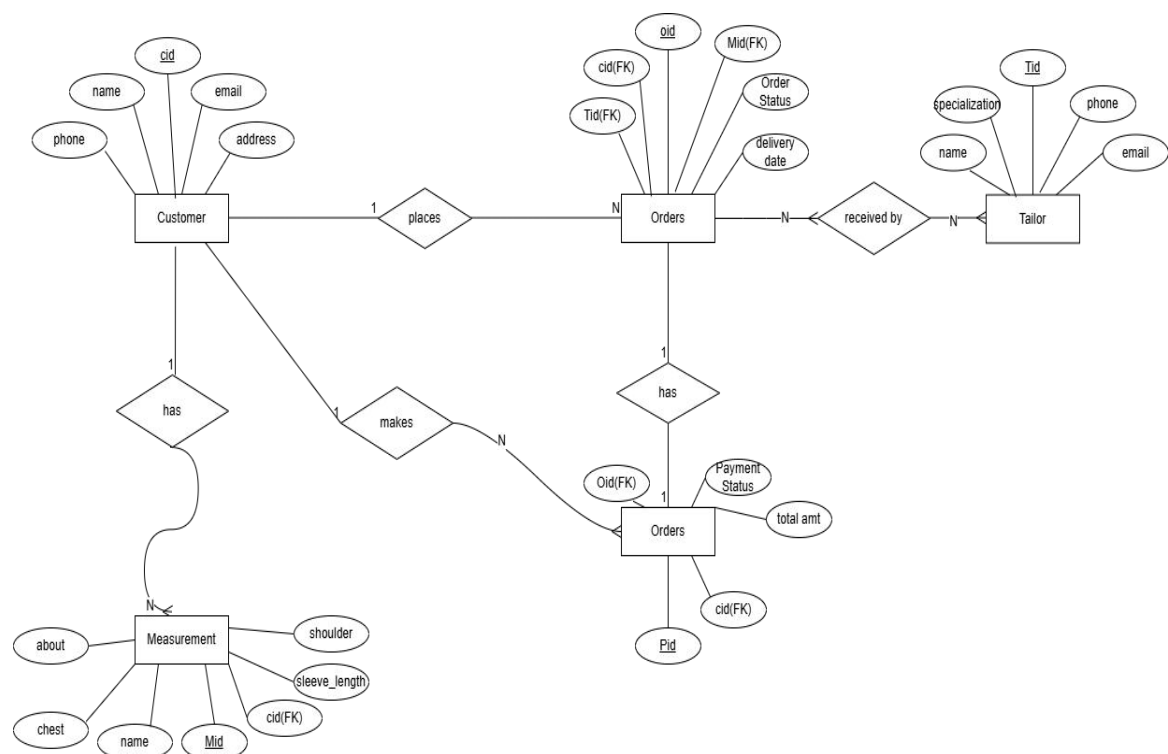
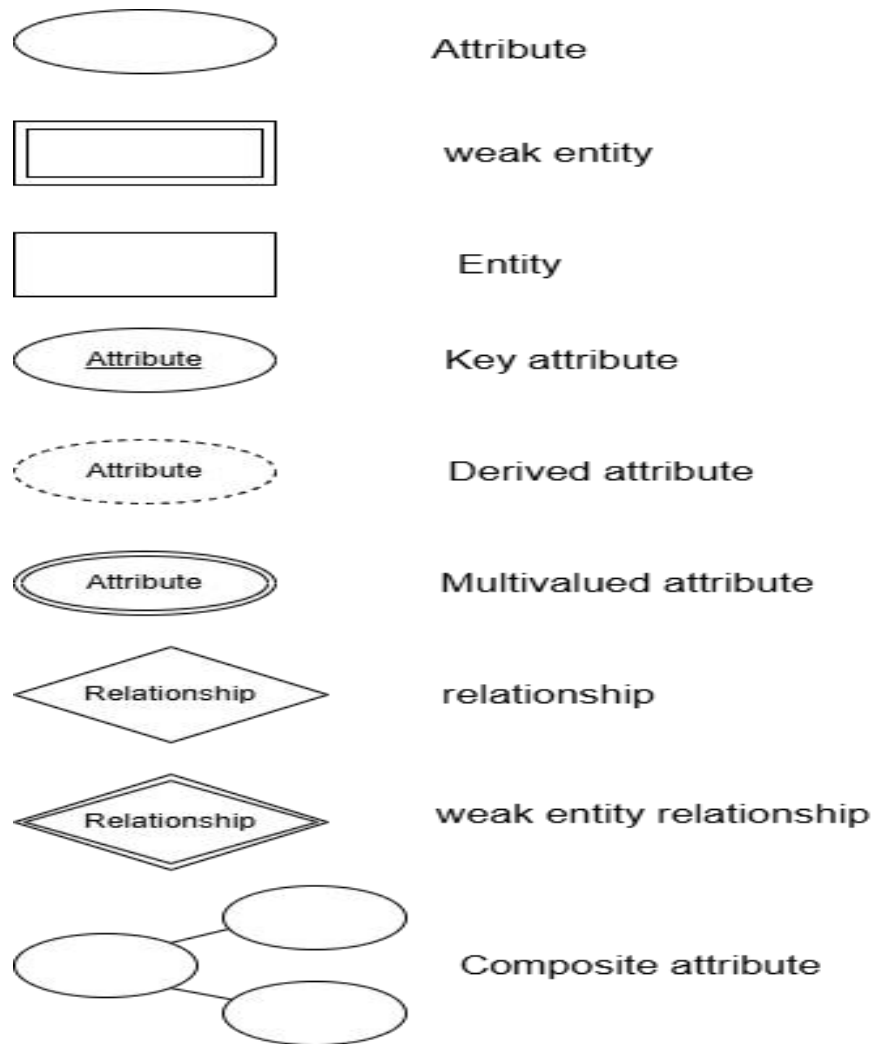
- Customer
- Tailor
- Admin

6. Detailed design

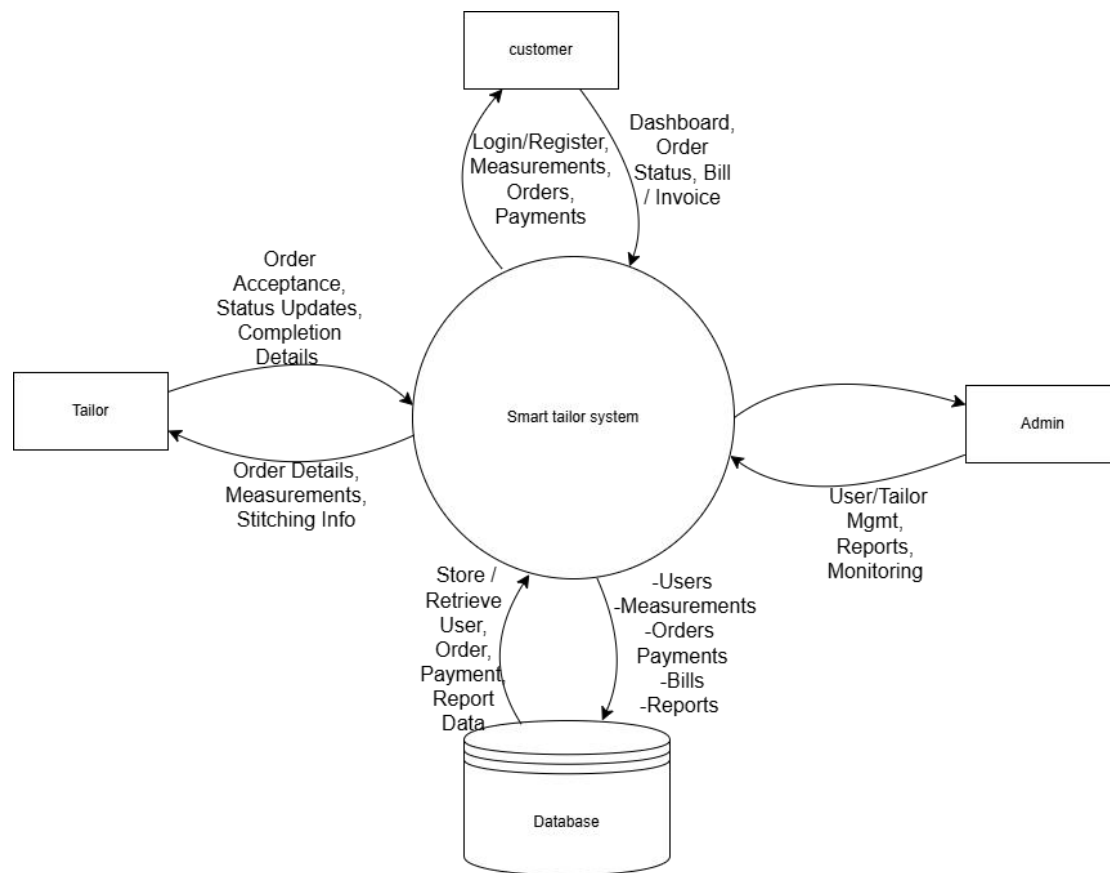
6.1 High level design

- **ER model**

An ER diagram shows the connections between customers, measurements, orders, and payments in the Smart Tailor System. It helps in creating a well-organized and reliable database.



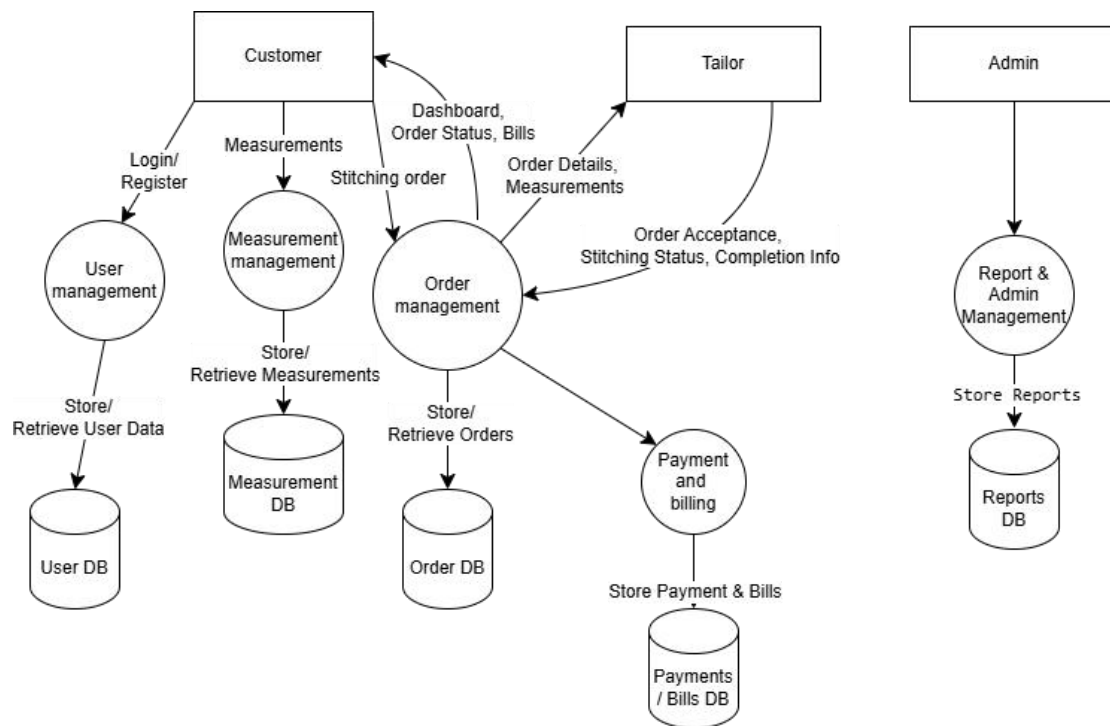
- **Dataflow diagram Level 0(DFD)**



1. Introduction

A Data Flow Diagram (DFD) shows how data travels inside the Smart Tailor System. It explains how information is exchanged between customers, tailors, administrators, the system, and the database. This diagram gives a clear picture of the system's working process and helps in understanding how different parts of the system work together to deliver tailoring services smoothly.

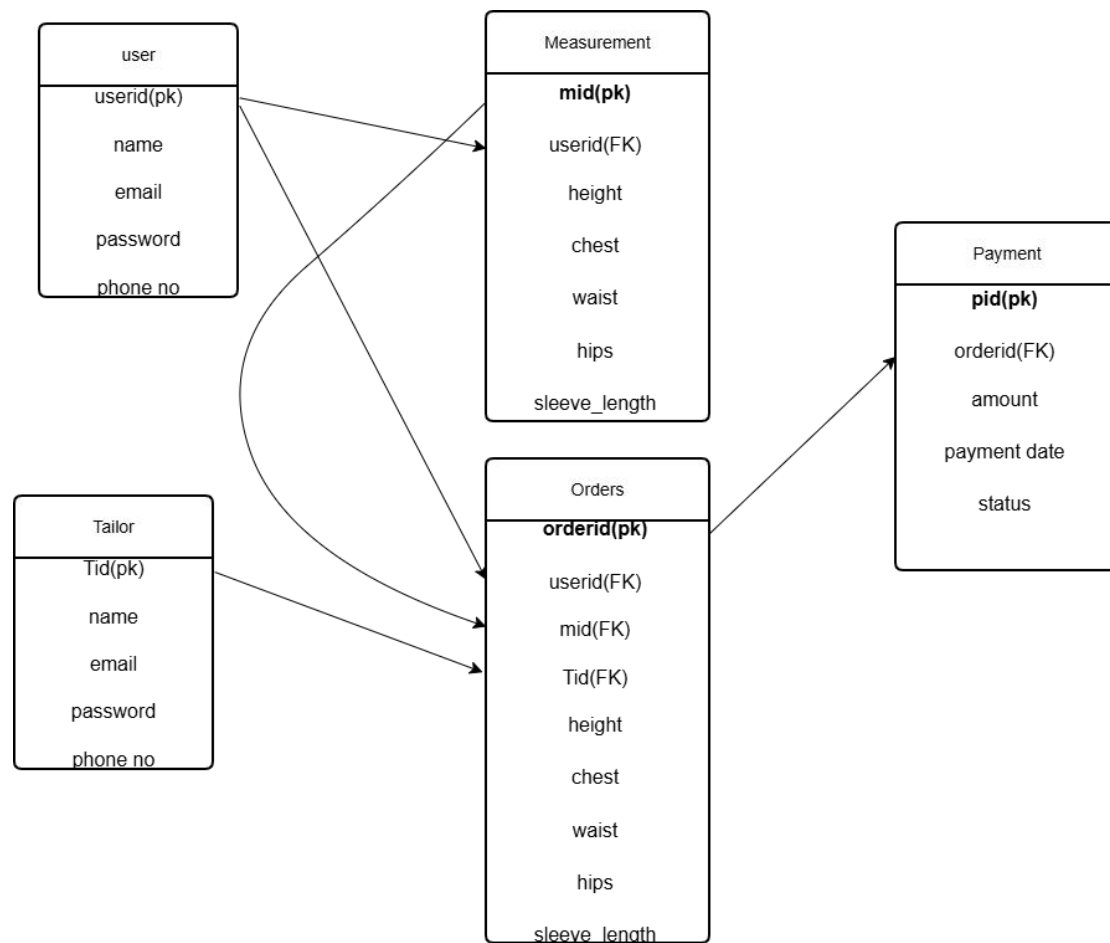
DataFlow Diagram Level1



The Level 1 DFD of the Smart Tailor System provides a detailed view of the system's main operations. It illustrates how customer requests are handled by the system's key modules and how information moves between these modules and the databases.

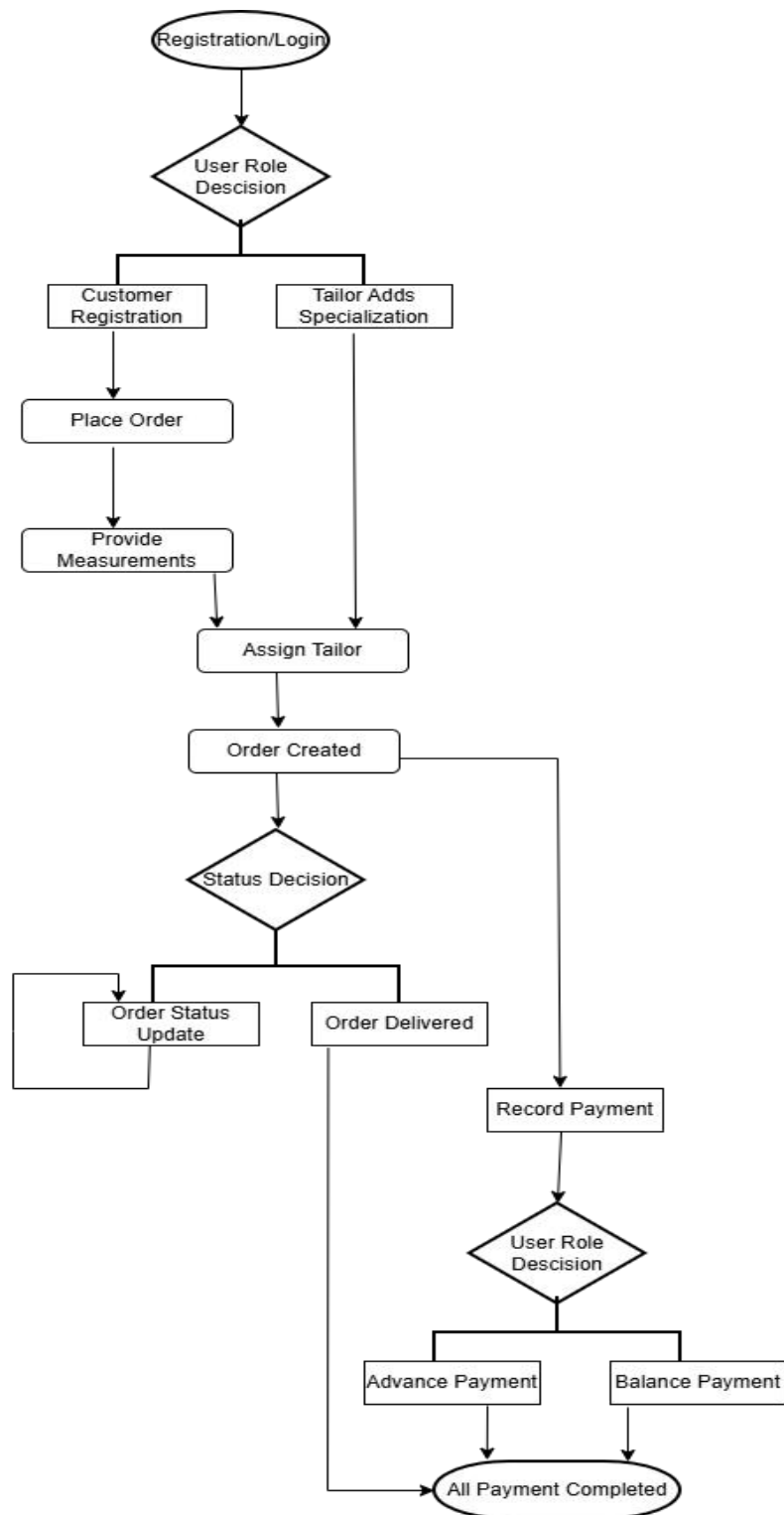
6.2 Low Level design

Relational model:



The Smart Tailor relational model is based on its ER diagram and arranges all system data into organized tables. Each table has a primary key to uniquely identify its records, and foreign keys are used to link related tables together, showing how different pieces of data are connected.

6.2 Flow Chart



6.3 Pseudo-code

1. User registration and login

DISPLAY "Welcome to Smart Tailor System"

IF user is new THEN

 INPUT Name, Email, Phone, Password

 STORE user details in User_Database

 DISPLAY "Registration Successful"

ELSE

 INPUT Phone, Password

 IF credentials match User_Database THEN

 DISPLAY "Login Successful"

 ELSE

 DISPLAY "Invalid Login"

 RETURN to Login

 ENDIF

ENDIF

2. Measurement

IF admin selects Add Measurements THEN

 INPUT Chest, Waist, Hip, Length, Sleeve

 SAVE measurements in Measurement_Database

DISPLAY "Measurements Saved Successfully"

ENDIF

3. Tailor processing

TAILOR logs into system

VIEW new orders

FOR each order DO

CHECK measurements and design

START stitching process

UPDATE Order_Status = "In Progress"

END FOR

4. View order status

IF user selects View Order Status THEN

FETCH Order_Status from Order_Database

DISPLAY current status

ENDIF

5. Order completed

IF stitching completed THEN

UPDATE Order_Status = "Completed"

NOTIFY Customer

ENDIF

6. Admin dashboard

BEGIN AdminDashboard

DISPLAY "Admin Login Page"

INPUT Admin_Username, Admin_Password

IF Admin credentials are valid THEN

 DISPLAY "Admin Dashboard"

 DISPLAY Options:

1. Manage Users
2. Manage Tailors
3. Manage Orders
4. Manage Measurements
5. Manage Payments
6. View Reports
7. Logout

INPUT Admin_Choice

IF Admin_Choice = Manage Tailors THEN

 DISPLAY Tailor List

 ADD / UPDATE / REMOVE Tailor

 ASSIGN Orders to Tailors

 SAVE changes to Tailor_Database

ENDIF

IF Admin_Choice = Manage Orders THEN

 DISPLAY Order List

 UPDATE Order Status

 ASSIGN Orders to Tailors

 SAVE changes to Order_Database

ENDIF

IF Admin_Choice = Logout THEN

 DISPLAY "Logged Out Successfully"

 END Session

ENDIF

ELSE

 DISPLAY "Invalid Admin Credentials"

 RETURN to Admin Login

ENDIF

END AdminDashboard

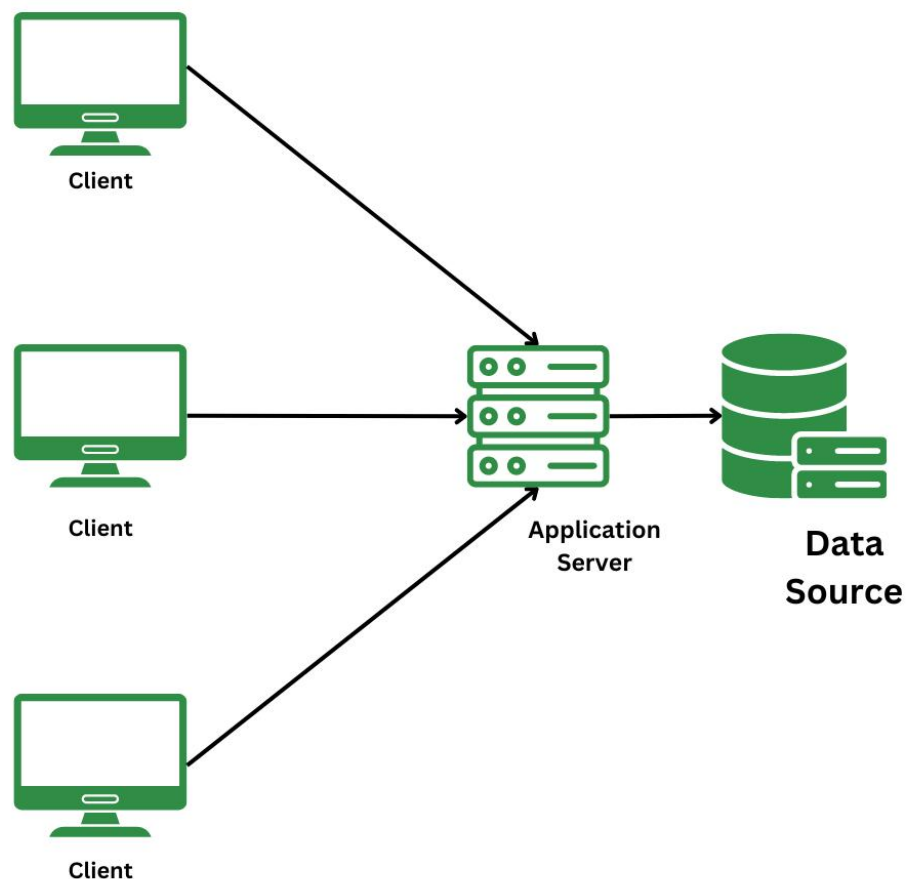
7. IMPLEMENTATION

The Smart Tailor System uses a database to neatly store and manage all tailoring-related information.

Layer architecture:

Breaking a software system into different layers, with each layer having a specific role. Each layer operates on its own, but they communicate with one another in a clear manner.

Three Tier Architecture



1.Presentation Layer (Client Layer)

This is what the user sees and uses.Built using React (Front-end). It only displays data and takes user input.

Shows pages like:

- Login / Register
- Measurement form
- Order status
- Payment page

2. Application Layer (Business Logic / Server Layer)

This is the brain of the system.Developed using Python Flask (Back-end). Decide what data to store or fetch

Responsibilities:

- Validate user data
- Process orders
- Calculate cost
- Handle login authentication

3.Data Layer (Database Layer)

The application is developed using a Relational Database Management System (RDBMS), where data is organized into several connected tables. Each table has a primary key to uniquely identify records, while foreign keys are used to connect related tables.

Using an RDBMS helps in handling data efficiently by allowing quick access, secure storage, and easy updates. This organized structure supports smooth coordination between different parts of the system, including users, measurements, tailors, orders, payments, and reports.

8. Testing and Results

Testing is the process of checking whether a software system works correctly or not. It helps us find errors, bugs, and problems before the system is given to users.

Types of testing:

1. Unit Testing

Checking small pieces of the software one by one. Each function or module is tested separately. Done to make sure each small part works correctly.

2. Integration Testing

Checks whether different parts of the software work together properly. Modules are combined and tested. Focus is on data flow between modules.

3. System Testing

It means testing the entire software as a whole. All features are tested together. Done after integration testing.

4. Acceptance Testing

It checks whether the software is ready to be used by real users. Done by customers. Confirms the system meets their needs.

User registration and login

id	Test case	Input	Result
01	Register with valid details	Name,email,password,phone-number	User register successfully
02	Register with existing email	Existing email	Error message
03	Login with valid credentials	Correct phone-number and password	Login successful
04	Login with invalid credentials	Wrong phone-number and correct password	Login failed
05	Login with wrong phone-number and password	Wrong phone-number and password	Login failed

Customer module

id	Test case	Input	Result
01	Add customer details	Customer information	Details saved successfully
02	Edit customer details	Update customer data	Customer details updated
03	Delete customer details	Customer id	Customer record deleted
04	View customer details	Customer id	Correct details displayed

Body measurement module

id	Test case	Input	Result
01	Add body measurements	Chest,wauist,hip,length	Measurement saved successfully
02	Leave measurement field empty	Missing value	Error message
03	View saved measurements	Customer id	Measurement displayed
04	Delete measurements	Customer id	Measurement deleted successfully

Tailor module

Id	Test case	Input	Result
01	Assigned order to tailor	Tailor id	Order assigned successfully
02	Updated stitching status	In progress/completed	Status updated

Order management

Id	Test case	Input	Result
01	Create order with correct values	Customer,measurement,amount and date	Information saved successful
02	Order with incorrect values	Missing values	Error message
03	View saved orders	Order id	Order view successful
04	Update item status without values	Values not given	Error message

9. Conclusion

In conclusion, the Smart Tailor System is a modern solution that significantly improves the traditional tailoring process. By using technology, it makes tasks like taking accurate body measurements, selecting designs, and placing orders much easier and more reliable. Customers no longer have to worry about fitting issues or miscommunications, as the system ensures precision and personalization in every garment. This not only saves time but also provides customers with a more convenient and enjoyable experience, enabling them to receive clothes that perfectly match their preferences.

The system also offers significant advantages for tailors. It makes managing multiple orders, tracking measurements, and organizing customer information much easier, reducing mistakes and stress. By handling administrative tasks efficiently, tailors can spend more time focusing on creating high-quality clothing. Overall, the Smart Tailor System combines traditional tailoring with modern technology, making the process smoother, faster, and more enjoyable for both customers and tailors. It demonstrates how innovation can make long-standing services more accurate, efficient, and user-friendly.

10. Future Enhancement

1. Mobile App Integration

A dedicated mobile app would let users take measurements, explore designs, and place orders directly from their smartphones, anytime and anywhere. This makes the system more convenient and accessible for customers who cannot always visit the tailor in person.

2. AI-Powered Style Suggestions

Artificial intelligence can study customer preferences, body shape, and current fashion trends to suggest suitable fabrics, colors, and designs. This helps customers make informed decisions and ensures the finished garment suits their style.

3. Voice-Assisted Measurements

Voice guidance can help users take accurate measurements at home without confusion. This makes the system easier to use, especially for first-time customers or those unfamiliar with tailoring.

4. 3D Virtual Try-On

By creating a 3D model of the customer's body, the system could allow users to virtually try on clothes before they are made. This reduces fitting errors and increases customer satisfaction.

5. Wearable Device Integration

Smart devices or wearable could track body changes over time, such as weight or posture changes, so that clothing measurements remain accurate for future orders.

6. Advanced Analytics for Tailors

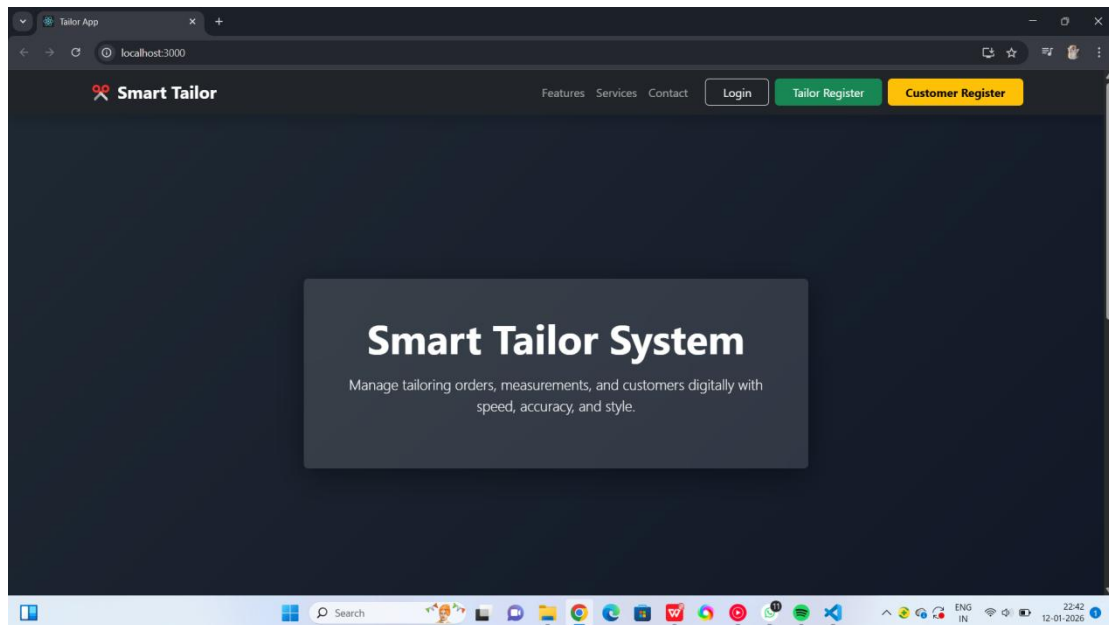
Tailors could get insights into popular designs, order trends, and customer preferences. This helps them plan better, reduce wastage, and offer more personalized services.

11. References

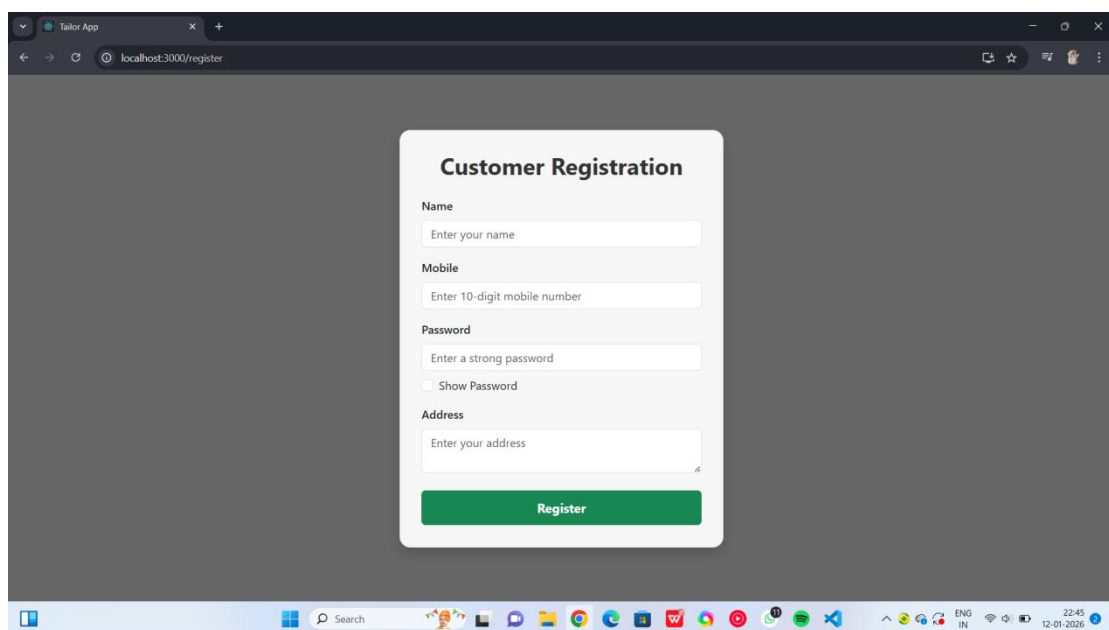
- Bootstrap Documentation
[Online]. Available: <https://getbootstrap.com/docs/5.3/getting-started/introduction/>
- TutorialsPoint – ASP.NET Core & Web Development
[Online]. Available: https://www.tutorialspoint.com/asp.net_core/index.htm
- Medium Articles – Smart Tailoring and Fashion Tech Trends
[Online]. Available: <https://medium.com/tag/fashion-technology>
- React official site (latest docs & guides) – <https://react.dev/>
- GitHub – Open Source Blazor Projects Reference
[Online]. Available: <https://github.com/dotnet/blazor>

12. Appendices

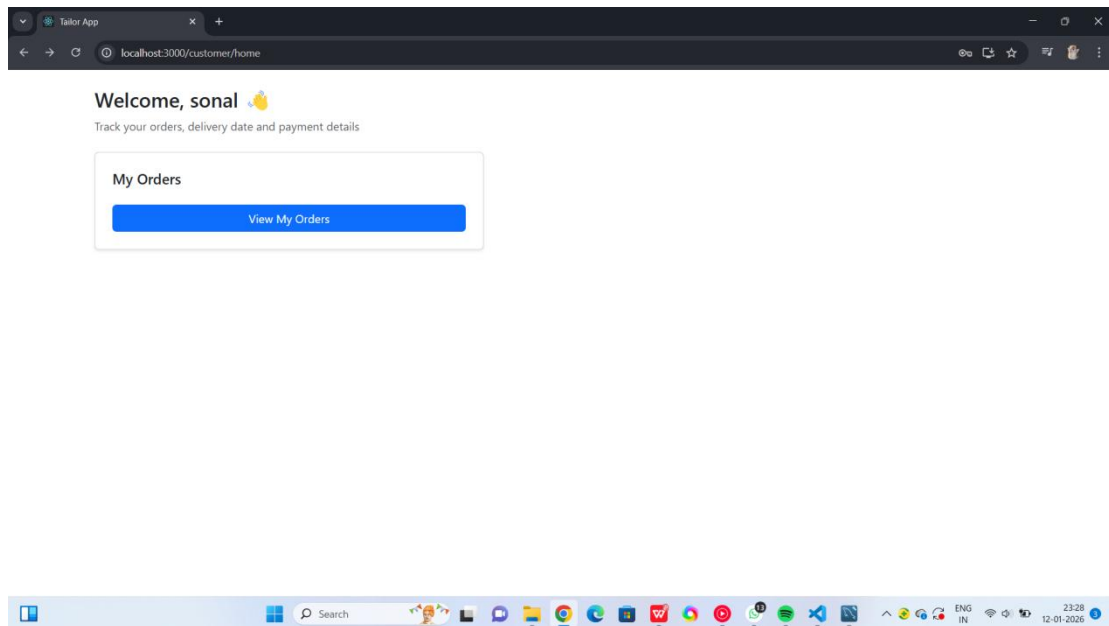
Landing page



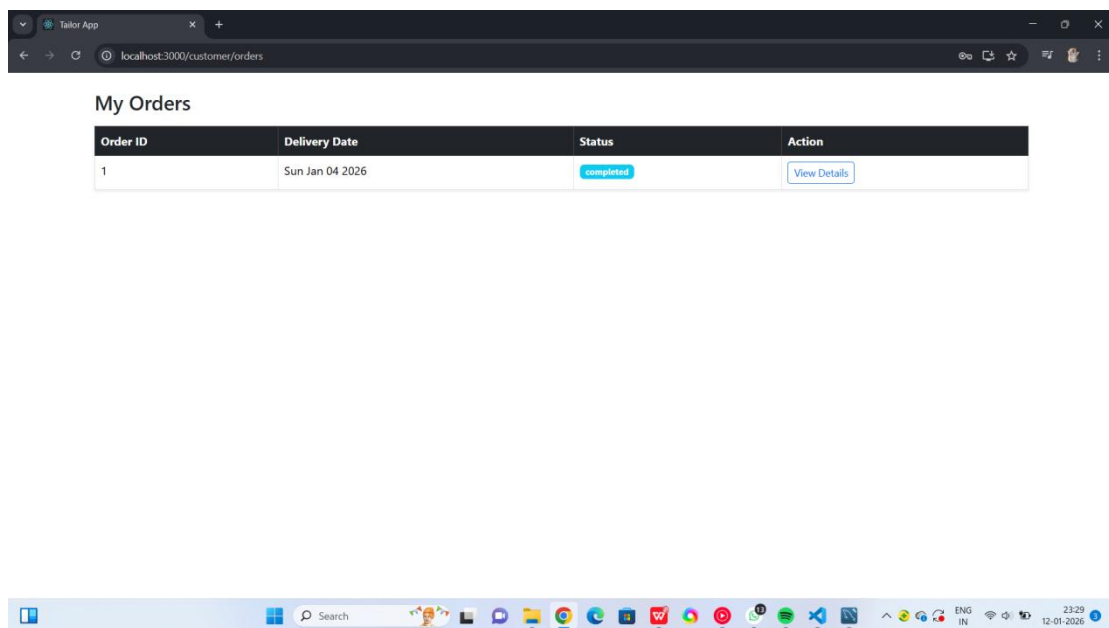
Customer registration page



Dashboard



Customer orders



Customer order details

The screenshot displays the 'Order #1' details in a web browser. The browser's address bar shows 'localhost:3000/customer/orders/1'. The page content includes:

- Order #1**
Delivery Date: Sun Jan 04 2026
- Billing**
Total: ₹400.00
Advance Paid: ₹100.00
Balance: ₹300.00
- Order Items**

Item	Tailor	Status	Notes
Kurta	Shrusti	ready	

The bottom of the image shows a Windows taskbar with various application icons and a system clock indicating 23:29 on 12-01-2026.

Tailor register

The screenshot displays the 'Tailor Registration' form in a web browser. The browser's address bar shows 'localhost:3000/tailor-register'. The form is centered on a dark gray background and contains the following fields:

- Name**
Enter your full name
- Mobile**
Enter 10-digit mobile number
- Password**
Eg: Tailor@123
☐ Show Password
- Address**
Enter your address

A green 'Register' button is located at the bottom of the form. The bottom of the image shows a Windows taskbar with various application icons and a system clock indicating 22:48 on 12-01-2026.

Tailor dashboard

The screenshot shows a web browser window with the URL `localhost:3000/tailor/home`. The page title is "My Assigned Stitching Work". It displays details for a "Kurti" order:

- Customer:** sonal
- Delivery Date:** Sun Jan 04 2026
- Current Status:** ready
- Measurements:**
 - Length: 24.00, Waist: 23.00, Hip: 12.00
 - Chest: 23.00, Sleeve: 23.00, Neck: 10.00
- Instructions:** body fit
- Update Status:** A dropdown menu with "-- Select Status --" and a downward arrow.

Invoice

The screenshot shows a web browser window with the URL `localhost:3000/admin/order-billing`. The page title is "Smart Tailor - Invoice". It displays the following information:

- Customer:**
- Mobile:**
- Order ID:**
- Date:** 01/01/2026
- Table:** A table with columns "SI No", "Item", and "Amount (₹)". It currently shows "No items added".
- Total Amount:** ₹ 0
- Message:** 🙏 Thank you for choosing Smart Tailor 🌟
- Customer Details:** Input fields for "Customer Name", "Mobile", and "Order ID".
- Add Item:** Input fields for "Item Name" and "Price", with an "Add Item" button.
- Generate & Print Bill:** A green button.