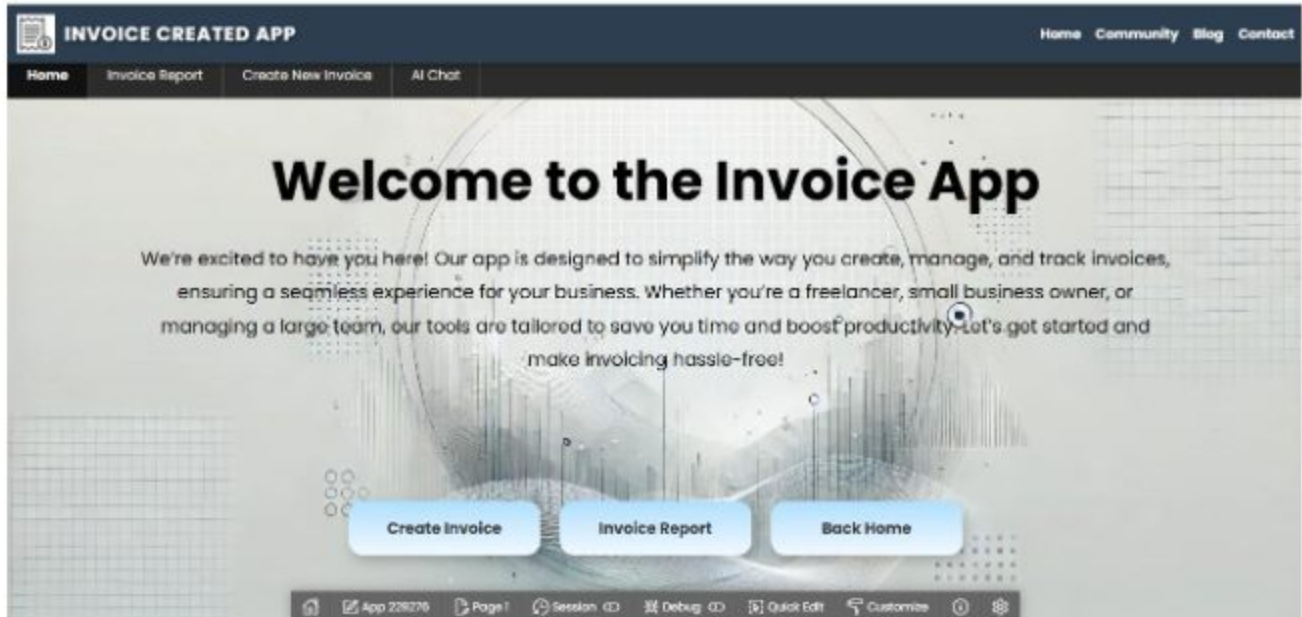


# INVOICE MANAGEMENT SYSTEM

### Application Documentation



Developed By: Md Danish Iqbal

Technology: Oracle APEX & Oracle Database

Date: 07 February 2026

### 1. Project Overview

The Invoice Management System is a comprehensive web-based application developed using Oracle APEX and Oracle Database to manage supplier, buyer, product, and invoice transactions efficiently. The system enables structured invoice creation, automated GST calculation through database triggers, secure user authentication, and generation of print-ready invoice reports.

Additionally, the integration of an AI-powered Chat Agent enhances the application by enabling users to retrieve invoice, supplier, product, and financial information through conversational queries. This transforms the solution from a traditional invoice application into an intelligent, data-driven, and conversational financial management platform.

### 2. Technology Stack

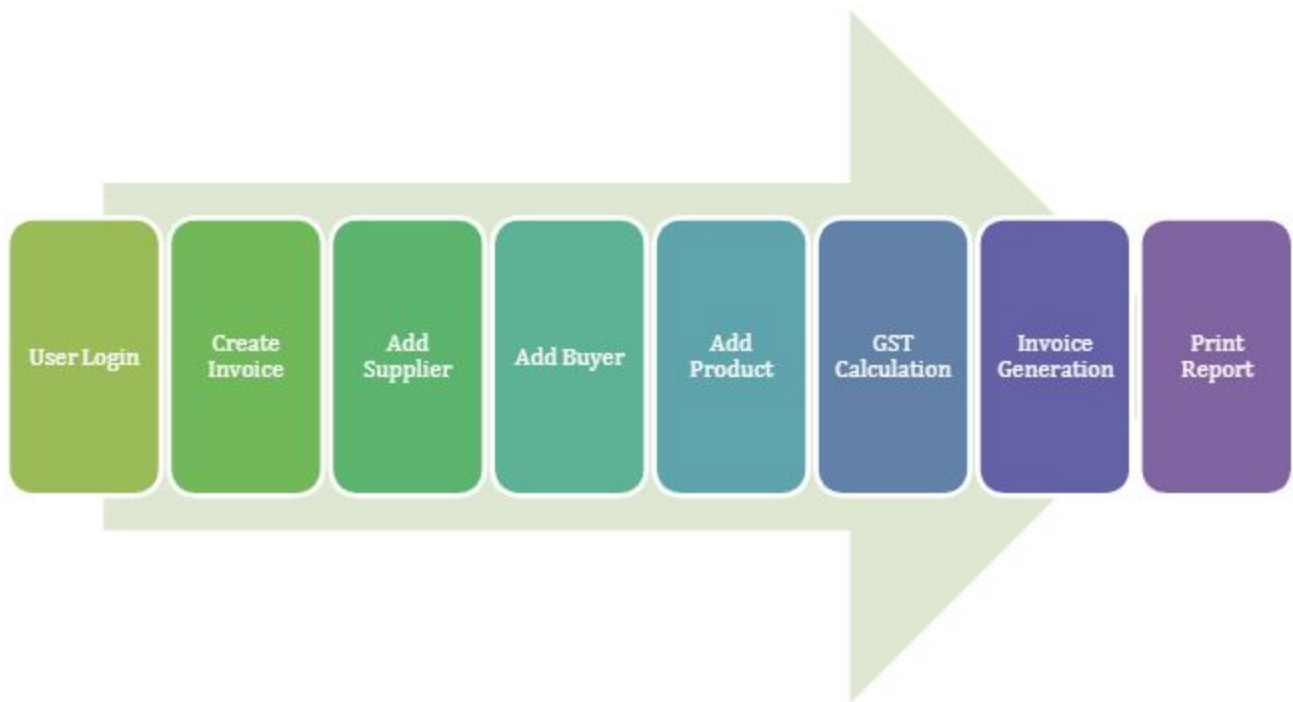
- Oracle APEX
- AI Agent Chat
- RAG / AI Integration
- Oracle SQL
- PL/SQL
- Database Triggers
- Custom Authentication Function
- HTML & CSS (UI Customization)

## Invoice Manager Application

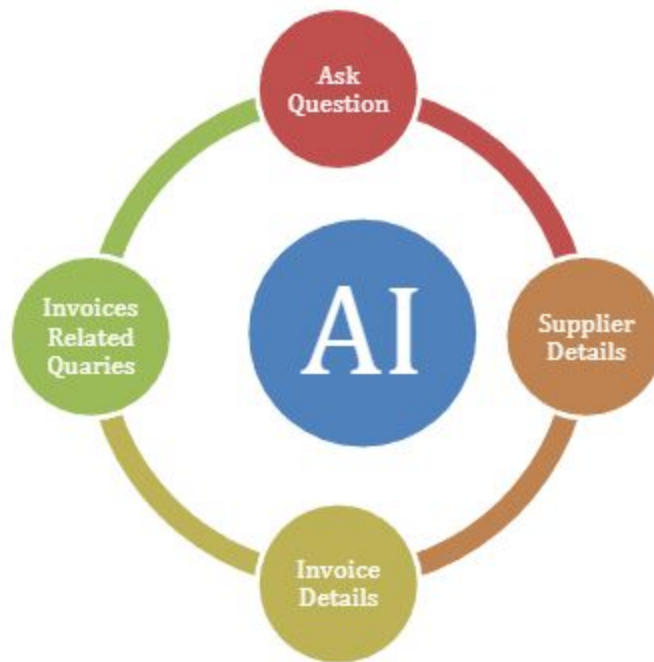
### 3. Application Flow

User Login → Create Invoice → Add Supplier → Add Buyer → Add Product → GST Calculation (Trigger) → Invoice Generation → Print Report

#### Application Flow



## Invoice Manager Application



## 4. Database Design

### **USER\_INVOICE**

Stores user authentication details such as username and password.

### **SUPPLIER\_DETAILS**

Stores supplier master data including GSTIN, PAN, and contact details.

### **BUYER\_DETAILS**

Stores buyer and consignee information for invoice processing.

### **BANK\_DETAILS**

Stores bank details used in invoice payment processing.

### **OTHER\_DETAILS**

Stores invoice-level details like invoice date, payment terms, and additional charges.

### **PRODUCT\_DETAILS\_HEADER**

Stores product master information.

### **PRODUCT\_DETAILS\_LINE**

Stores invoice line items including quantity, price, GST, and total amount.

## **5. Business Logic Implementation**

### **TOTAL\_PRICE\_TRIG**

Automatically calculates  $TOTAL\_PRICE = QUANTITY \times UNIT\_PRICE$  before insert or update.

### **TOTAL\_PERCENTAGE\_TRIG**

Automatically calculates  $GST\_TAX\_AMOUNT = QUANTITY \times UNIT\_PRICE \times GST\% / 100$ .

### **AUTH\_INV Function**

Validates username and password from USER\_INVOICE table and controls login authentication using apex\_util.set\_authentication\_result.

## **6. Security Features**

- Custom authentication function
- Controlled login validation
- Database-driven validation logic



### 7. Key Features

- Automated GST Calculation
- Dynamic Invoice Generation
- Professional UI Design
- Modular Database Architecture
- Print-Ready Invoice Report

### 8. Future Enhancements

- Role-based access control
- AI chat for user Queries
- Email invoice functionality
- Dashboard analytics
- REST API integration
- PDF auto-generation and email feature

## 9. AI Chat Agent Integration

### 9.1 Overview

The application includes an integrated AI Chat Agent capable of answering invoice-related queries in real time.

The AI agent interacts with invoice data and provides dynamic responses based on user questions.

### 9.2 Purpose of AI Chat

- Improve user experience
- Reduce manual searching
- Provide quick invoice insights
- Enable conversational access to invoice data
- Support decision-making with real-time responses

### 9.3 AI Capabilities

The AI Chat Agent can answer queries related to:

#### Invoice Information

- Total number of invoices
- Invoice by invoice number
- Invoice date details
- Invoice status
- Total invoice amount

#### Supplier Queries

- Supplier details by name
- GSTIN and contact details
- Invoices related to specific supplier
- Supplier-wise total billing amount
- Buyer Queries
- Buyer information
- Buyer-wise invoice history
- City/state-based invoice filtering

#### Product & Line Items

- Product-wise sales
- Quantity sold
- Unit price details
- GST tax amount per product
- Total invoice calculation

### Financial Queries

- Total GST collected
- Total invoice value
- Invoice summary report
- Monthly billing summary

### 9.5 Technical Implementation

- AI Chat UI created in Oracle APEX
- Backend integration with invoice tables
- Dynamic SQL queries for data retrieval
- Business logic validation
- Real-time response display

### 9.6 Business Value

- Reduces report dependency
- Faster decision making
- Improves operational efficiency
- Intelligent invoice analytics
- Modern AI-enabled application

### 9.7 Example Questions Supported

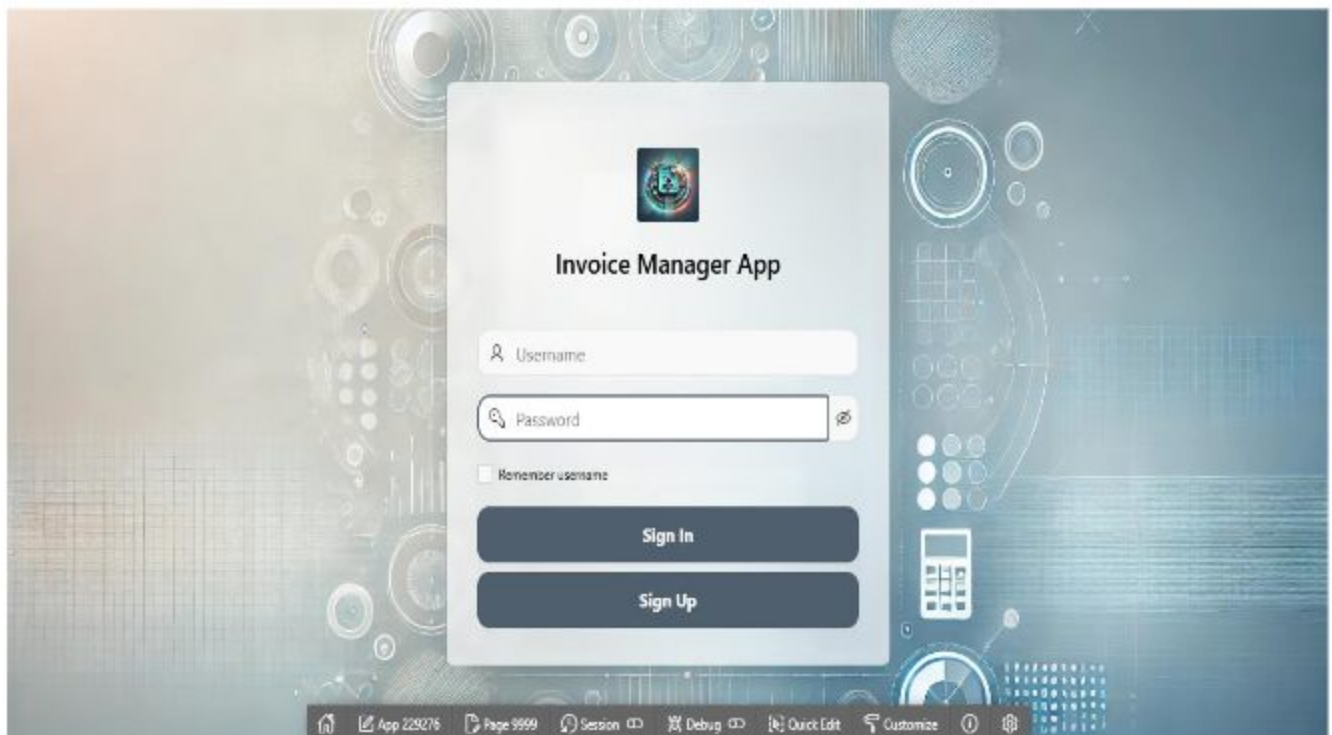
- You can add examples like:
- "What is the total invoice amount?"
- "Show invoices for Supplier ABC."
- "How much GST was calculated?"
- "Give me product-wise total sales."
- "Show buyer details for invoice INV1001."
- "What is the total billing for this month?"



# Invoice Manager Application

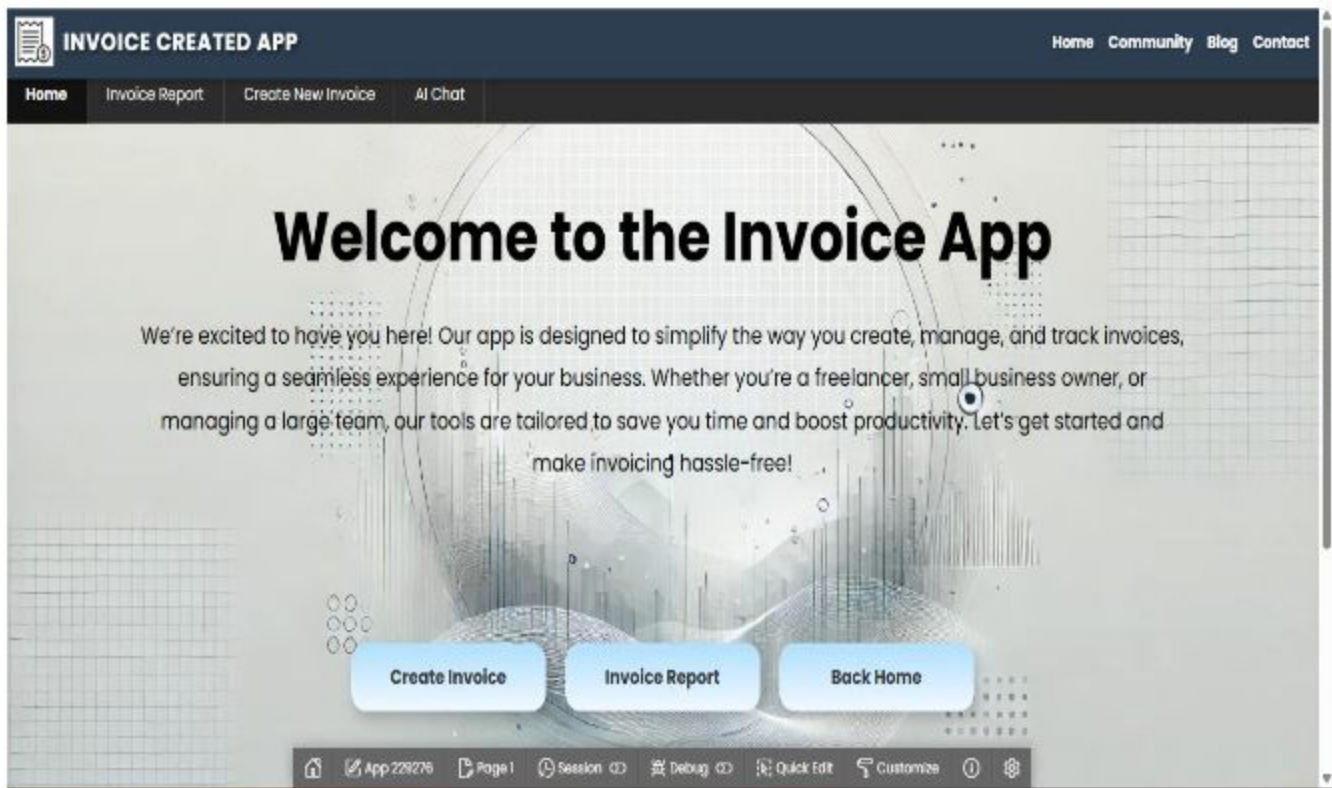
## Application Sanp Shot

### Login Page:-



# Invoice Manager Application

## Home Page



# Invoice Manager Application

## Create Invoice Form

Supplier Details			
GSTIN	* Supplier Name	PAN Number	Mobile Number
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Supplier Address	* E-Mail	City	Pin Code
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Buyer Details			
GSTIN	* Buyer Name	* Mobile Number	Address
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
* E-Mail	City	State	Pin Code
<input type="text"/>	<input type="text"/>	<input type="text" value="v"/>	<input type="text"/>

Products Header Details		
Item Type	Product Type	Creation Date
<input type="radio"/> Goods <input type="radio"/> Service	<input type="text"/>	<input type="text" value="v"/>

Delete Row

## Invoice Manager Application

Delete Row

Actions

Edit

Add Row

Reset

Item Name	Quantity	Unit Price	Total Price	Gst Tax Amount	GST Slab (%)

1 rows selectedTotal 1

Bank Details

Bank Name

Branch Name

IFSC Code

Account Number

Account Holder Name

Create Date

Other Details

Payment Terms

Remarks

Chalan Number

Currier Charge

Packing Charge

Other Charge

Cancel

Create

USER Invoice Form – FillUP

# Invoice Manager Application

Application Logo Text

Install App

test

HomeInvoice ReportCreate New InvoiceAI Chat

Supplier Details

GSTIN

AKSP186NCJ

\* Supplier Name

DNS MANGO

PAN Number

AKSP186NCJ

Mobile Number

7987487817

Supplier Address

MUAFFARPUR, BIHAR

\* E-Mail

DANISH IQBAL@GMAIL.CO

City

MUAFFARPUR

Pin Code

842002

Buyer Details

GSTIN

PKSP186NMI

\* Buyer Name

TFC FRUITS

\* Mobile Number

9879874859

Address

ARA, PATNA

\* E-Mail

TFC.FRUIT@GMAIL.COM

City

PATNA

State

Bihar

Pin Code

800001

Application Logo Text

Install App

test

HomeInvoice ReportCreate New InvoiceAI Chat

Products Header Details

Item Type

☒ Goods ☐ Service

Product Type

FRUITS

Creation Date

2/10/2026

Delete Row

Action

Edit

Add Row

Reset

Item Name	Quantity	Unit Price	Total Price	Gst Tax Amount	GST Slab (%)
Mango Raja	20	560	11204	224	2
Mango Laxna	40	880	36980	1760	5
Litchi Sahi	19	1700	32915	1615	5
Mango Bamba	50	500	25000	500	2

1 rows selected

Total:4



# Invoice Manager Application

Application Logo Text

Install App

test

Home

Invoice Report

Create New Invoice

AI Chat

Bank Details

Bank Name

Payen National Bank

Branch Name

Mazafarpur

IFSC Code

PUNB0258500

Account Number

2583001700787

Account Holder Name

DANISH IQBAL

Create Date

2/08/2026

Other Details

Payment Terms

NET 30

Remarks

Chalan Number

Carrier Charge

4000

Packing Charge

Other Charge

Cancel

App 22/02/26

Page 14

Session ID

Debug ID

Quick Edit

Customer

Create

## Print Invoice

Application Logo Text

Install App

test

Home

Invoice Report

Create New Invoice

AI Chat

Print Invoice Report

INVOICE NUMBER

INV070226/6

Print

## Invoice Report

# Invoice Manager Application

Report Run Date & Time :- 07 FEB 2026 20:38

## **INVOICE**

Invoice No. INV070226/6

Invoice Date 07-FEB-2026

### **Supplier Information**

**Name :-** DNS MANGO

**GSTIN :-** AKSPI86NCJ

**Address :-** MUAFFARPUR BIHAR

**Mobile No :-** 7087487817

### **Buyer Information**

**Name :-** TFC FRUITS

**GSTIN :-** PKSPI86NMI

**Address :-** ARA PATNA

**Mobile No :-** 9879874659

S.NO	Item Name	Qty	Unit Price	GST (%)	GST Amount	Total Price
1	Mango Najra	20	560	2%	224	11200
2	Mango Langra	40	880	5%	1760	35200
3	Lichi Sahi	19	1700	5%	1615	32300
4	Mango Bambai	50	500	2%	500	25000

**Total Amount:-** 103,700.00

**Total GST Amount:-** 4,099.00

**Grand Total (including GST):-** 107,799.00

For DNS MANGO

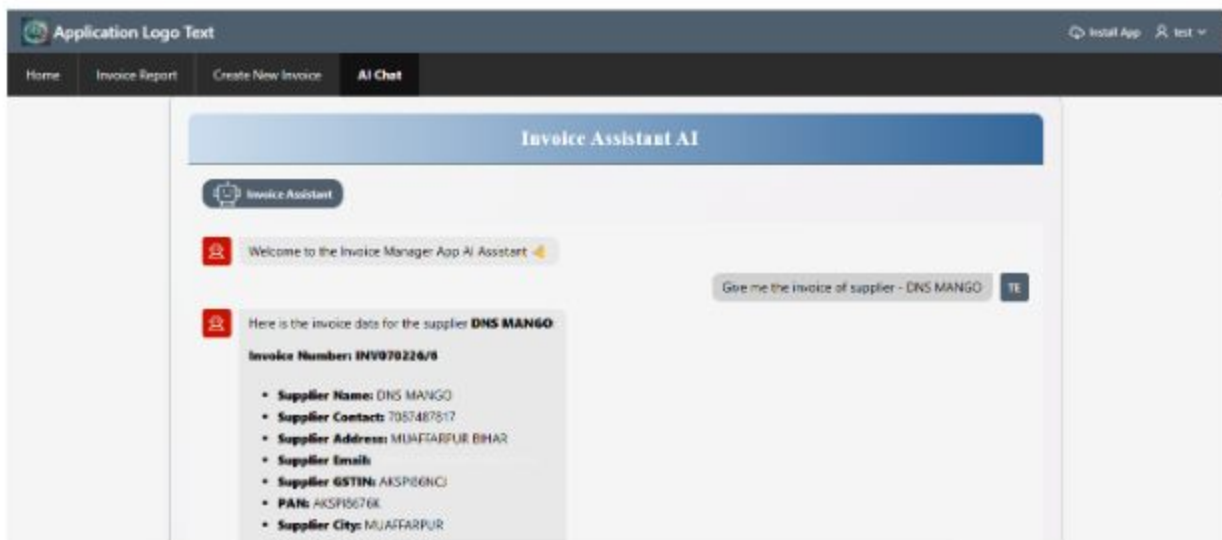
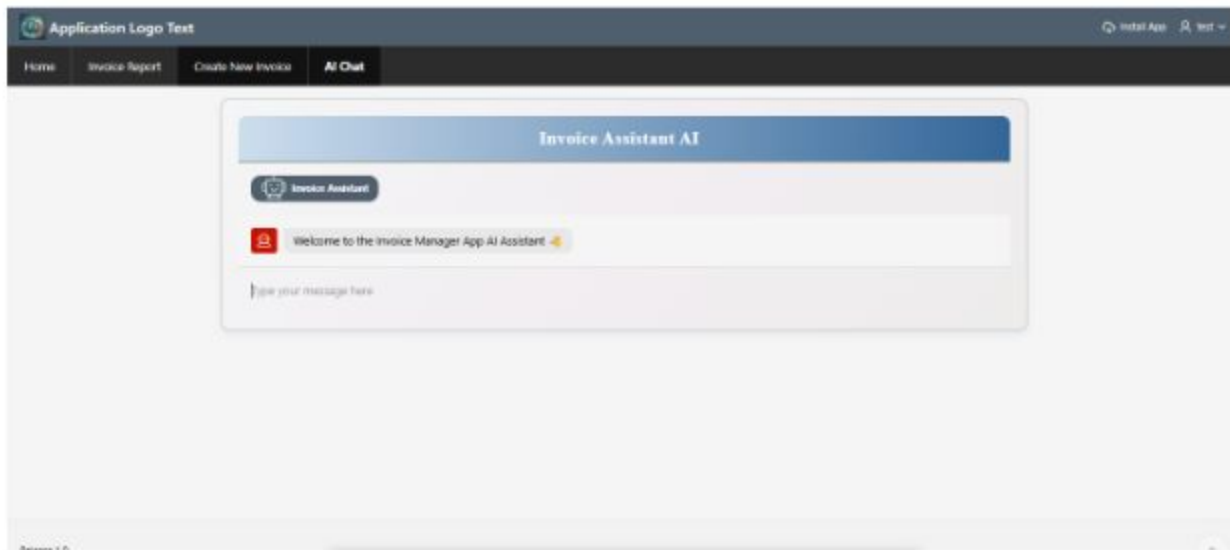
(Authorized Signatory)

### **TERM AND CONDITION :**

Payment should be made within 30 days from the invoice date

**AI Assistant for Invoice Queries**

# Invoice Manager Application



# Invoice Manager Application

Home	Invoice Report	Create New Invoice	AI Chat
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Account Number: 12345678901234567890




- **IFSC Code:** PUNB0258500
- **Branch Name:** Muzaffarpur
- **Account Holder:** DANISH IQBAL

**Other Details:**

- **Invoice Date:** 2/7/2026
- **Payment Terms:** NET 30
- **Courier Charge:** 6000
- **Packing Charge:** 0
- **Other Charge:** 0

**Product Details:**

1. **Item Name:** Mango Najra
  - **Quantity:** 20
  - **Unit Price:** 560
  - **Total Price:** 11200
  - **GST Tax Amount:** 224
2. **Item Name:** Mango Langra
  - **Quantity:** 40

 Application Logo Text				 Install App	
Home	Invoice Report	Create New Invoice	AI Chat		

3. **Item Name:** Lichi Sahi

- **Quantity:** 19
- **Unit Price:** 1700
- **Total Price:** 32300
- **GST Tax Amount:** 1615


4. **Item Name:** Mango Bamba

- **Quantity:** 50
- **Unit Price:** 500
- **Total Price:** 25000
- **GST Tax Amount:** 500

**Invoice Grand Total:** 107799

Let me know if you need further details!

Count the total number of invoices **TE**

 There are 6 unique invoices in the provided data.

Type your message here :