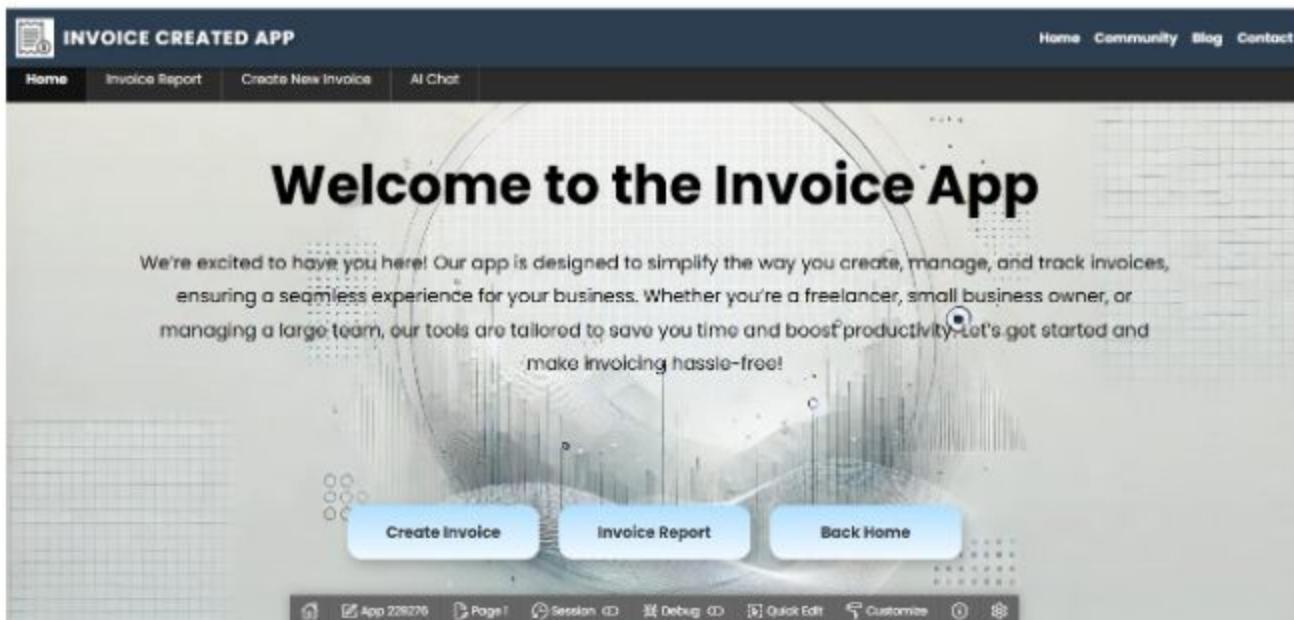


## Invoice Manager Application

# 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

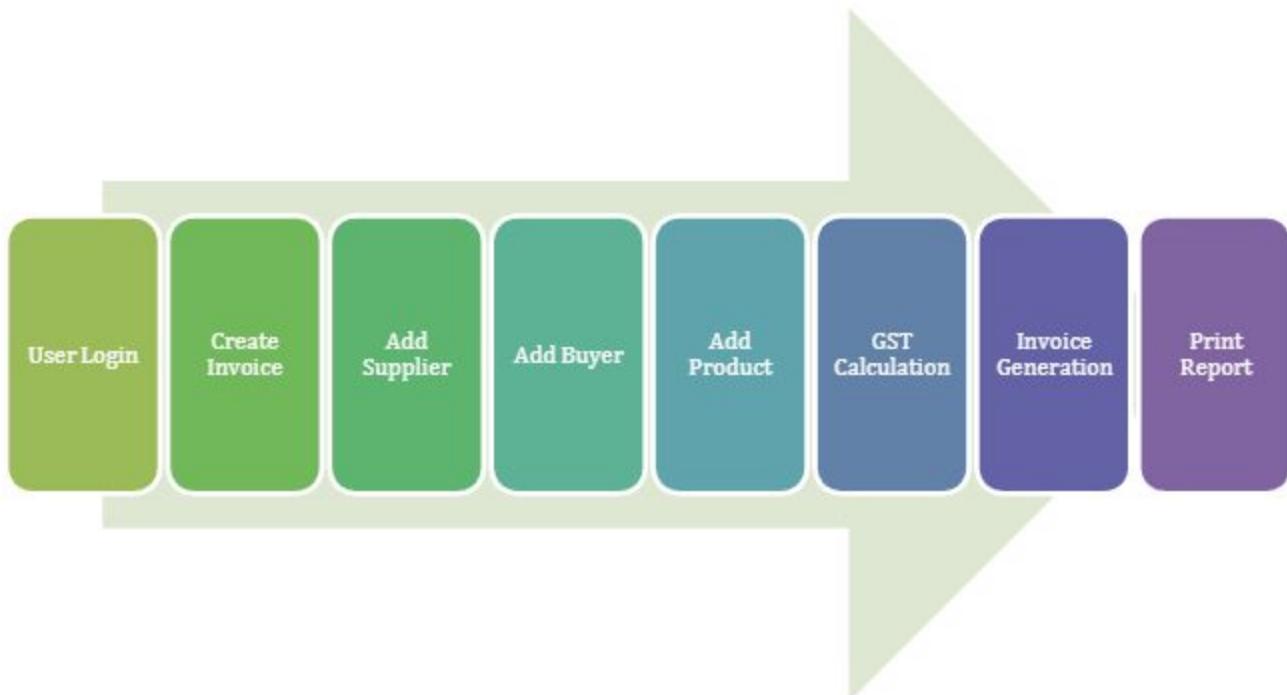
- Oracle APEX
- AI Agent Chat
- RAG / AI Integration
- Oracle SQL
- PL/SQL
- Database Triggers
- Custom Authentication Function
- HTML & CSS (UI Customization)

## 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





## 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  $\text{TOTAL\_PRICE} = \text{QUANTITY} \times \text{UNIT\_PRICE}$  before insert or update.

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

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

### **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

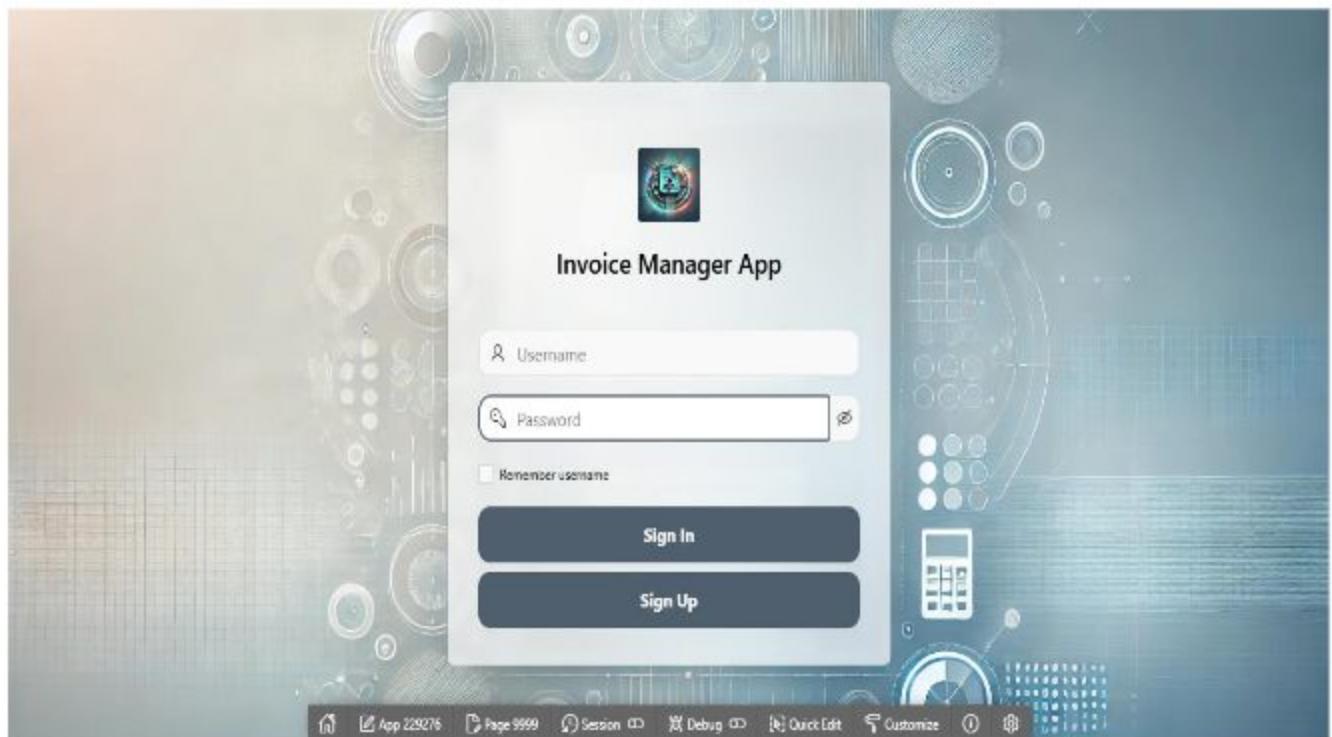
- Reduces report dependency
- Faster decision making
- Improves operational efficiency
- Intelligent invoice analytics
- Modern AI-enabled application

## 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?"

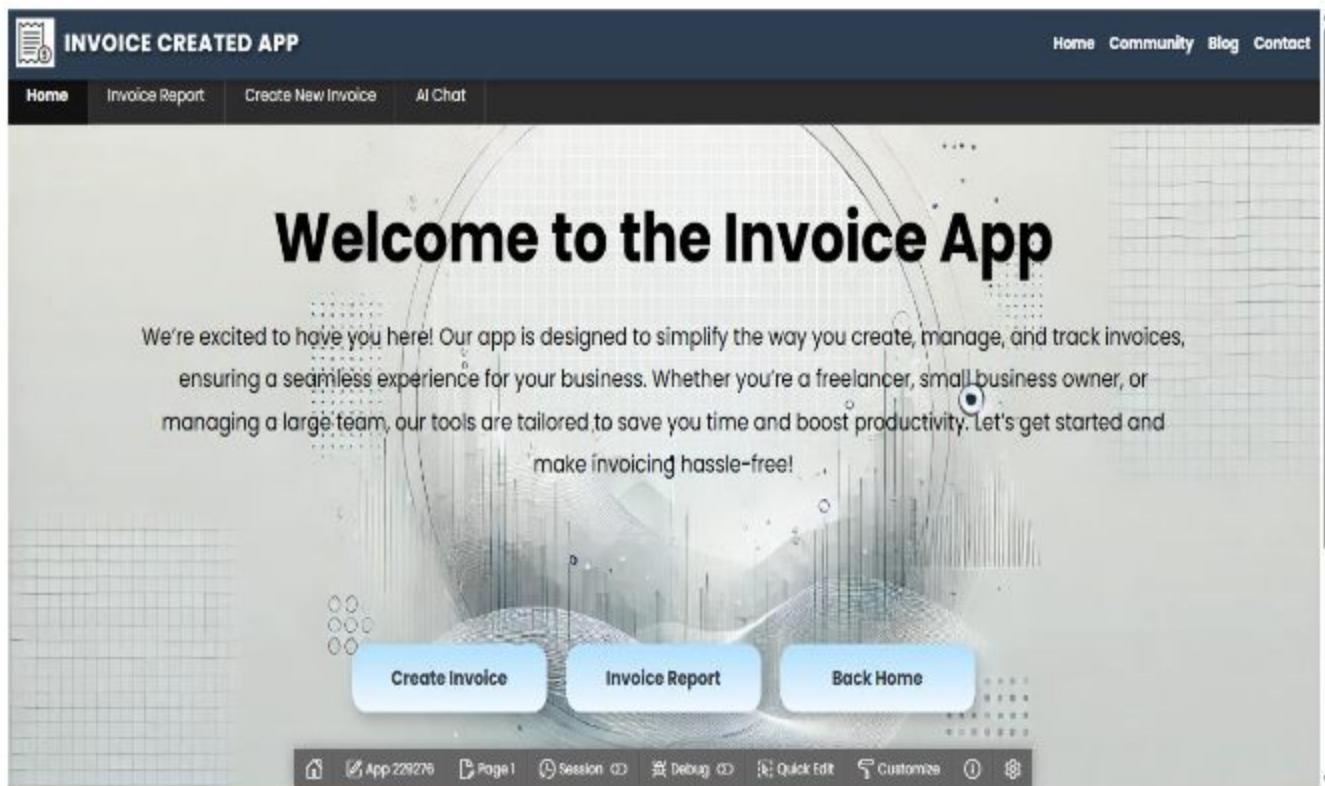
## Application Sanp Shot

### 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"/>	
Supplier Address	* E-Mail	City	Pin Code
<input type="text"/>		<input type="text"/>	
Buyer Details			
GSTIN	* Buyer Name	* Mobile Number	Address
<input type="text"/>		<input type="text"/>	
* E-Mail	City	State	Pin Code
<input type="text"/>		<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"/> 	
<a data-bbox="204 1362 301 1383" href="#">Delete Row</a>			

# Invoice Manager Application

**Deletes Row**

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

1 rows selected Total 1

## Bank Details

Bank Name	Branch Name	IFSC Code
<input type="text"/>	<input type="text"/>	<input type="text"/>
Account Number	Account Holder Name	Create Date
<input type="text"/>	<input type="text"/>	<input type="text"/>

## Other Details

Payment Terms	Remarks	Chalan Number
<input type="text"/>	<input type="text"/>	<input type="text"/>
Currier Charge	Packing Charge	Other Charge
<input type="text"/>	<input type="text"/>	<input type="text"/>

**Cancel** **Create**

USER Invoice Form – FillUP

# Invoice Manager Application

Application Logo Text

Home | Invoice Report | **Create New Invoice** | AI Chat | [Install App](#) | [Logout](#)

### Supplier Details

GSTIN	<b>* Supplier Name</b>	PAN Number	Mobile Number
AKSP186NCJ	DNS MANGO	AKSP186NCJ	7887487817
Supplier Address	<b>* E-Mail</b>	City	Pin Code
MUAFFARPUR BIHAR	DANISHIQBAL@GMAIL.CO	MUAFFARPUR	842002

### Buyer Details

GSTIN	<b>* Buyer Name</b>	<b>* Mobile Number</b>	Address
PKSP186NMI	TPC FRUITS	9879874859	ARA BATNA
<b>* E-Mail</b>	City	State	Pin Code
TPC.FRUTTS@GMAIL.COM	PATNA	Bihar	800001

Application Logo Text

Home | Invoice Report | **Create New Invoice** | AI Chat | [Install App](#) | [Logout](#)

### Products Header Details

<b>Item Type</b>	<b>Product Type</b>	<b>Creation Date</b>
<input checked="" type="radio"/> Goods	<input type="radio"/> Service	FRUITS
		2/10/2026

[Delete Row](#)

Action	Item Name	Quantity	Unit Price	Total Price	Gst Tax Amount	GST Slab (%)
<a href="#">Edit</a>	Mango Naya	20	160	3200	224	2
<a href="#">Edit</a>	Mango Langra	40	80	3200	1760	5
<a href="#">Edit</a>	Lichi Safi	10	1200	12000	1615	5
<a href="#">Edit</a>	Mango Bambari	50	500	25000	500	2

1 rows selected | Total: 4

# Invoice Manager Application

The screenshot shows a web-based application interface for managing bank details. At the top, there is a navigation bar with links for Home, Invoice Report, Create New Invoice, and AI Chat. The main content area is titled 'Bank Details' and contains the following fields:

Bank Name	Branch Name	IFSC Code
Pepperfmidt Bank	Muzaffarpur	PLNB0258500
Account Number	Account Holder Name	Create Date
25E1001700787	DANISH IQBAL	2/04/2026

Below this is a section titled 'Other Details' with the following fields:

Payment Terms	Remarks	Chalan Number
NET 30		
Carrier Charge	Packing Charge	Other Charge
600		

At the bottom of the form are buttons for 'Cancel', 'Print', and 'Create'.

## Print Invoice

The screenshot shows a web-based application interface for printing invoices. At the top, there is a navigation bar with links for Home, Invoice Report, Create New Invoice, and AI Chat. The main content area is titled 'Print Invoice Report' and contains a search bar with the placeholder 'INVOICE NUMBER' and a dropdown menu. To the right of the search bar is a blue 'Print' button.

## 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

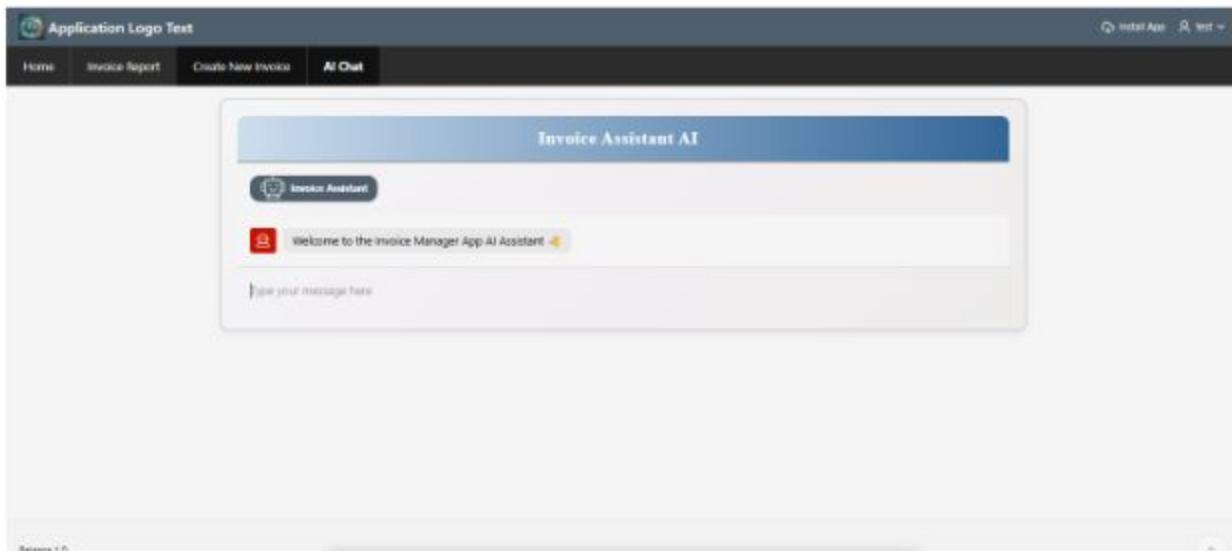
(Authorized Signatory)

### **TERM AND CONDITION :**

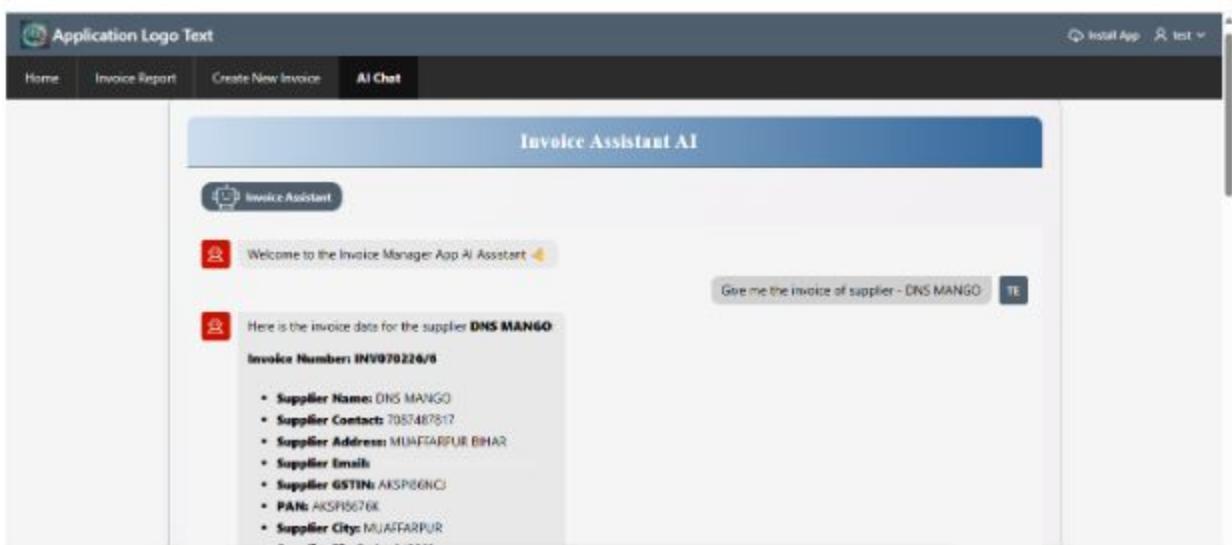
Payment should be made within 30 days from the invoice date

**AI Assistant for Invoice Queries**

# Invoice Manager Application



The screenshot shows the AI Chat interface within the Invoice Manager Application. The top navigation bar includes 'Home', 'Invoice Report', 'Create New Invoice', and 'AI Chat'. The AI Chat window has a blue header bar with the text 'Invoice Assistant AI'. Below this is a button labeled 'Invoice Assistant'. The main area displays a message: 'Welcome to the Invoice Manager App AI Assistant'. A text input field below the message box is labeled 'Type your message here'. At the bottom of the window, there is a small note: 'Balancing V.T.'.



The screenshot shows the AI Chat interface within the Invoice Manager Application. The top navigation bar includes 'Home', 'Invoice Report', 'Create New Invoice', and 'AI Chat'. The AI Chat window has a blue header bar with the text 'Invoice Assistant AI'. Below this is a button labeled 'Invoice Assistant'. The main area displays a message: 'Welcome to the Invoice Manager App AI Assistant'. A text input field below the message box contains the text 'Give me the invoice of supplier - DNS MANGO'. The AI response is displayed below the input field: 'Here is the invoice data for the supplier **DNS MANGO**' followed by 'Invoice Number: INV070226/6'. A list of supplier details is provided: 

- Supplier Name: DNS MANGO
- Supplier Contact: 7057487817
- Supplier Address: MUAJFARPUR BIHAR
- Supplier Email:
- Supplier GSTIN: AKSP166NCJ
- PAN: AKSP1667K
- Supplier City: MUAJFARPUR

## Invoice Manager Application

Application Logo Text

Install App

Home Invoice Report Create New Invoice AI Chat

3. **Item Name:** Uchi Sahi

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

4. **Item Name:** Mango Bambai

- **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

Info There are 6 unique invoices in the provided data.

Type your message here.