

Real-time Ecommerce Application in ASP.NET Core MVC

We will develop a robust ASP.NET Core MVC application that manages customer orders and dynamically generates invoices. The system supports both customer-facing order and payment flows as well as admin functionalities for managing invoice templates. It uses modern technologies such as Entity Framework Core for data access, CKEditor for rich text editing, and IronPdf for PDF generation.

User Authentication & Authorization:

- **Customer Registration and Login:** The application provides a basic authentication mechanism using cookie-based authentication. Customers can register, log in, and log out, with their credentials stored in the database.
- **Admin Access:** Admin-specific pages (such as the template management screens) are accessible only to authorized users (using role-based checks or specific claims).

Customer Order and Payment Flow:

- **Order Creation:** Customers can browse available products, adjust quantities via a dynamic interface, and place orders. The system calculates the total order amount in real time and stores only valid order items.
- **Payment Processing:** Once an order is placed, customers proceed to a payment page where they select a payment method (Credit Card, PayPal, or COD). The application simulates payment processing, updates the order status (Completed, Cancelled, or Pending), and generates an invoice based on the order details.
- **Invoice Generation:** Invoices are generated as PDF documents using IronPdf. The HTML invoice templates contain placeholders (such as {CustomerName}, {OrderDate}, etc.) that are dynamically replaced with real order data when generating the final invoice.
- **Order Confirmation:** After processing payment, customers are redirected to an order confirmation page that displays the complete order summary and details. They also have the option to download or view the invoice.

Admin Management of Invoice Templates:

- **CRUD Operations:** Admin users can manage invoice templates via a dedicated CRUD module. They can create, edit, and delete invoice templates using a form that integrates CKEditor for rich HTML content editing.
- **Template Customization:** The invoice templates allow the use of placeholders to insert dynamic order data. A side panel displays a list of allowed placeholders and descriptions, ensuring that admins use the correct format for generating invoices.

Technology Stack:

- **ASP.NET Core MVC:** Provides a clean separation of concerns with Controllers, Views, and Models.
- **Entity Framework Core:** Manages data access, mapping domain models to a SQL Server database.
- **SQL Server:** The backend database to store and manage the data.
- **IronPdf:** Generates high-fidelity PDF invoices from HTML templates.
- **CKEditor 5:** Enables rich text editing for invoice templates.
- **Bootstrap:** Ensures a responsive and professional user interface across devices.

The following Pages we are going to develop as part of the Real-time application.

Customer Registration Page:

Create Your Account

Full Name

Enter your full name

Email

you@example.com

Password

Choose a secure password

Phone

(555) 123-4567

Billing Address

Your billing address

Register

Already have an account? [Login here](#)

Customer and Admin Login Page:

Customer Login

Email

you@example.com

Password

Enter your password

Login

Don't have an account? [Register here](#)

Customer Order List Page:

| My Orders | | | | |
|------------------------|------------------|-----------|------------|----------------------------------|
| Order Number | Order Date | Status | Total | Actions |
| ORD-638753696730385166 | 17-02-2025 06:14 | Completed | ₹ 1,498.98 | Download Invoice |
| ORD-638753725053822242 | 17-02-2025 07:01 | Completed | ₹ 2,097.98 | Download Invoice |
| ORD-638753737927974474 | 17-02-2025 07:23 | Cancelled | ₹ 99.98 | Download Invoice |
| ORD-638753738378026096 | 17-02-2025 07:23 | Completed | ₹ 699.98 | Download Invoice |
| ORD-638753738861701566 | 17-02-2025 07:24 | Completed | ₹ 2,699.96 | Download Invoice |
| ORD-638753740146405894 | 17-02-2025 07:26 | Cancelled | ₹ 2,447.97 | Download Invoice |
| ORD-638753761994322832 | 17-02-2025 08:03 | Completed | ₹ 2,397.99 | Download Invoice |
| ORD-638753821712138265 | 17-02-2025 09:42 | Pending | ₹ 1,498.00 | Download Invoice |
| ORD-638753913781493034 | 17-02-2025 12:16 | Completed | ₹ 2,646.99 | Download Invoice |

Place Order Page:

Place Order

Review your order before submitting.

Use the + or - buttons to adjust quantities, and click **Remove** if you no longer want an item.

| Product | Unit Price | Quantity | Item Total | Actions |
|----------------------------|------------|----------|------------|------------------------|
| Apple iPhone 13 | ₹ 799.00 | - 1 + | 799.00 | Remove |
| Samsung Galaxy S21 | ₹ 699.00 | - 2 + | 1398.00 | Remove |
| Sony WH-1000XM4 Headphones | ₹ 349.99 | - 1 + | 349.99 | Remove |

Grand Total: ₹2546.99

Place Order

Order Payment Page:

Payment

Order Number:

ORD-638753928574108675

Total Amount:

₹ 2,546.99

Payment Method

Credit Card

Pay Now

Please review your order details before making the payment.

Order Confirmation, Failed, Pending Page:

Order Placed Successfully!

Thank you for your purchase.

ORDER NUMBER

ORD-638753928574108675

ORDER DATE

February 17, 2025

STATUS

Completed

TOTAL AMOUNT

₹ 2,546.99

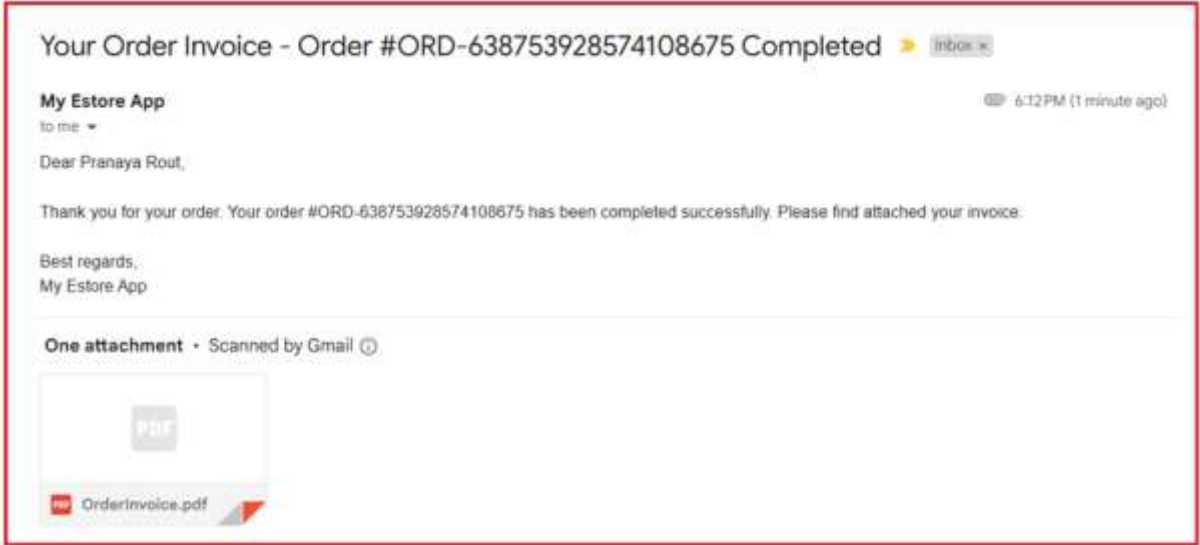
Order Items

| Product | Quantity | Unit Price | Total |
|----------------------------|----------|------------|------------|
| Apple iPhone 13 | 1 | ₹ 799.00 | ₹ 799.00 |
| Samsung Galaxy S21 | 2 | ₹ 699.00 | ₹ 1,398.00 |
| Sony WH-1000XM4 Headphones | 1 | ₹ 349.99 | ₹ 349.99 |

View Invoice

Back to Orders

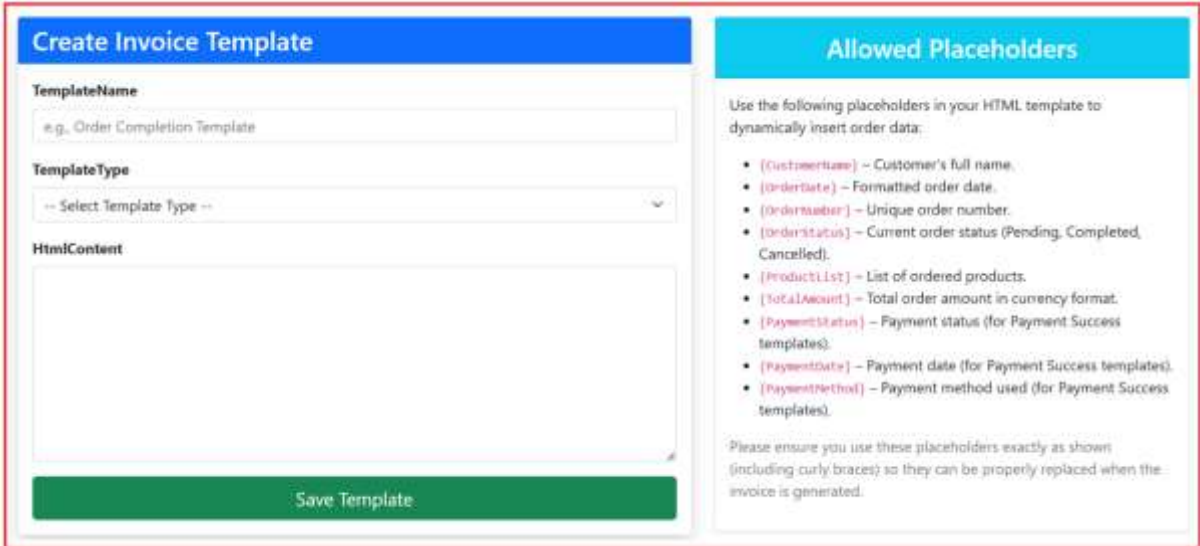
Order Confirmation Email with Order Invoice Attachment:



Manage Invoice Template Page: (Only for Admin user)



Order Create Invoice Template Page:



Order Edit Invoice Template Page:

Edit Invoice Template

TemplateName

TemplateType

OrderCompletion

HtmlContent

```
<html>
<body style="font-family: 'Segoe UI', Tahoma, Geneva, Verdana, sans-serif; margin:0; padding:0; background:#f7f7f7;">
<div style="max-width:800px; margin:30px auto; background:#ffffff; border:1px solid #e0e0e0; box-shadow:0 0 10px rgba(0,0,0,0.1);">
<!-- Header -->
<div style="padding:20px; border-bottom:1px solid #e0e0e0; text-align:center;">
<h1 style="margin:0; font-size:28px; color:#007bff;">Invoice</h1>
<p style="margin:5px 0; font-size:16px; color:#007bff;">Order Completed</p>
```

Update Template

Allowed Placeholders

Use the following placeholders in your HTML template to dynamically insert order data:

- {CustomerName} – Customer's full name.
- {OrderDate} – Formatted order date.
- {OrderNumber} – Unique order number.
- {OrderStatus} – Current order status (Pending, Completed, Cancelled).
- {ProductList} – List of ordered products.
- {TotalAmount} – Total order amount in currency format.
- {PaymentStatus} – Payment status (for Payment Success templates).
- {PaymentDate} – Payment date (for Payment Success templates).
- {PaymentMethod} – Payment method used (for Payment Success templates).

Please ensure you use these placeholders exactly as shown (including curly braces) so they can be properly replaced when the invoice is generated.

Order Delete Invoice Template Page:

Delete Template

Are you sure you want to delete this template? This action cannot be undone.

| | |
|----------------|------------------|
| Template Name: | Order Pending |
| Template Type: | OrderPending |
| Created Date: | 17-02-2025 11:43 |
| Created By: | Admin |

Delete

Cancel