Hands-On for Case Study for ASP.NET MVC
Online Shopping Portal (SunbeamEstore)

Aim

- To develop a web portal for online shopping SunbeamEStore.
- Customer can view Shopping Items through Product Catalog.
- Customer can order one or more products.
- SunbeamEStore staff can keep track of orders and dispatch them.

Technologies used

- MVC framework:
  - ASP.NET MVC
- ADO.NET:
  - CRUD operations, HQL, Entity Relations, ADO.NET Data Access Logic Layer
- Database:
  - Local Database SQL

Duration

- 20 Hours

Requirements

- This web application comprises two modules i.e. customer module and staff module.
- **Customer module provides following functionalities (to the customers):**
  - To View Electronic Products which are categorized. There are multiple sub-categories like:
    - Veg: Mobile Phones, Tablets, Laptops, etc.
  - To select any product from above sub-categories and view its details.
  - To add selected product to cart. Customer can go back to product Catalog to choose more products.
  - To Register a New User (along with personal details)
  - To Sign In (with email ID and password)
  - To view the cart and purchase selected items (if customer is already logged in). If customer is not logged in yet, he/she should be redirected to login screen and then should be able to complete the purchase process.
  - Note that purchase facility is not to be implemented (just to be emulated) i.e. customer order will be added into database, so that it can be viewed by SunbeamEStore staff. Scope of this application does not include accounting or business analysis of the SunbeamEStore.
- **Staff module provides following functionalities (SunbeamEStore):**
  - To view the pending orders in descending order by date.
  - To select an order from the pending orders list and see its details. Staff can change the status of order to emulate that order is dispatched.
  - To see already dispatched orders.
  - Note that purchased Shopping Items delivery (i.e. status = delivered) is not included in the scope of this application.

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Design

- **Database design:**
  - Tables: Categories, Products, Orders, OrderDetails, Payments
  - Each table has primary key which is auto generated using SQL Server Auto Increment feature.
  - Tables have One to Many & Many to One relationships.
- **Data Access Logic Layer design:**
  - POCO classes :Categories, Products, Orders, OrderDetails, Payments
  - All relations are bi-directional (i.e. One-To-Many → Many-To-One) except last one:
    - Customer 1 → * Order
    - Order 1 → * OrderDetails
    - Order 1 → * Payment
    - Category→ * Product
    - OrderDetails→ * Product
  - Implement DAL (Data Access Logic Layer) classes with given functionalities as follows:
    - CustomerDAL:
      - Get a Customer Details
      - Get All Customer Details
      - Add a new Customer
      - Update Existing customer
      - Delete existing customer
    - ProductDAL:
      - Get Products based on category
      - Get Products based on low Stock
      - Get All Product Details
      - Add a new Product
      - Update Existing Product
      - Delete existing Product
    - OrderDAL:
      - Get OrderDetails of customer
      - Get Orders based on status i.e. Pending or Dispatched
      - Get All Orders Details
      - Add a new Order
      - Update Existing Order
      - Delete existing Order
    - OrderDetailsDAL
      - Get OrderDetails of existing Order
      - Get All Orders Details
      - Add a new OrderDetail
      - Update Existing OrderDetail

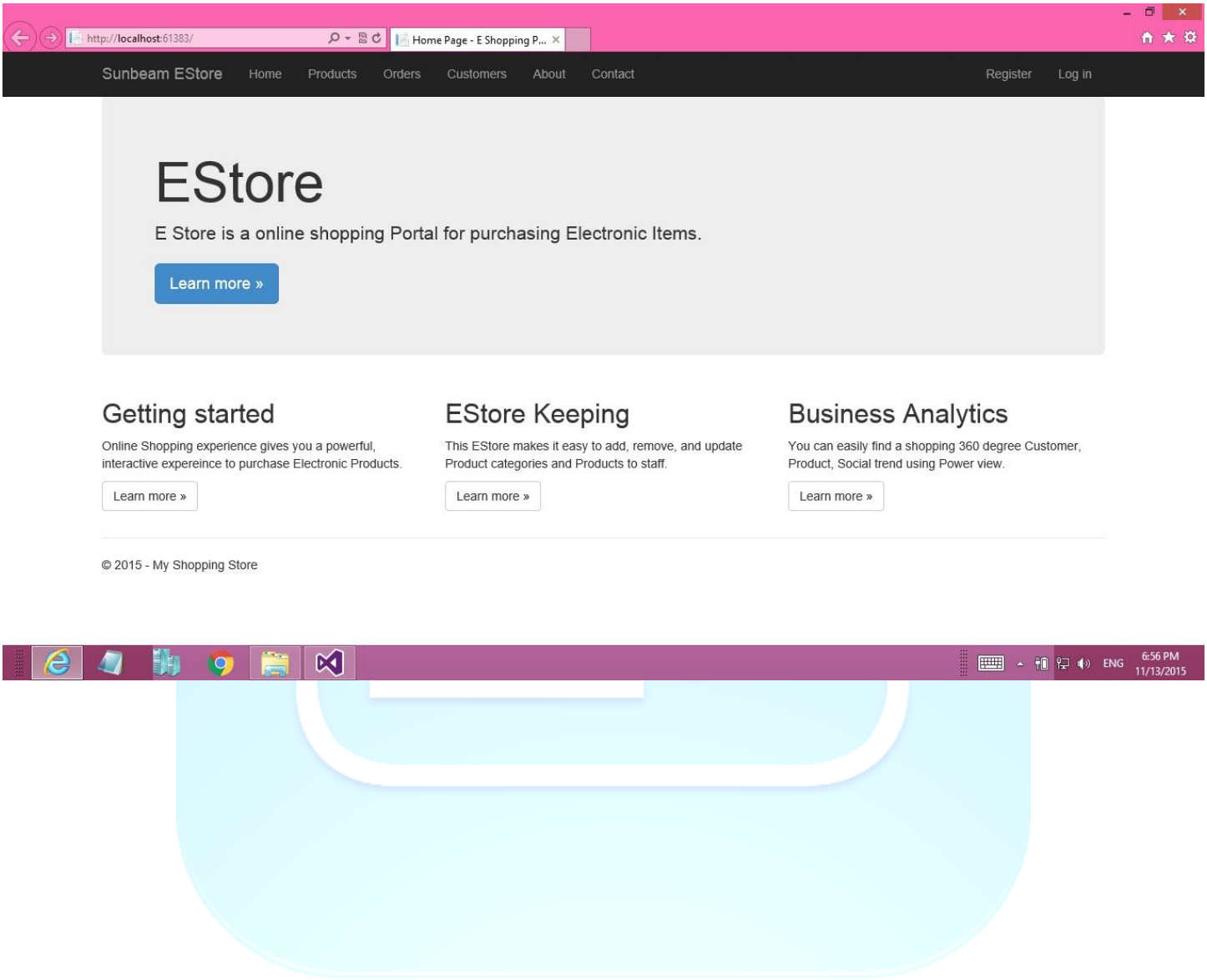
        - Delete existing OrderDetail
    - PaymentDAL
        - Get Payment details of existing Order
        - Get All Payment Details
        - Add a new Payment
        - Update Existing Payment and Delete existing Payment
- **ASP.NET MVC Design:**
    - Implement REST API for each DAL class :
        - ProductCatalogService
        - OrderService
        - CRMService
    - Implement Controller classes with appropriate functionalities:
        - AccountController: Login, Logout, Registration & Related.
        - CategoryController: Add, remove, update and Delete Categories
        - ProductController: Add, remove, update and Delete Products
        - ShoppingCartController: Add Selected Items into Cart, Show Cart with Total Bill, Purchase (add order into database) & Related.
        - OrderController: Fetch Orders (for admin), Update Order Status & Related.
        - OrderDetailsContoller**:** Add, remove, update and Delete OrderDetails
    - Use all POCO classes as model
    - Add Views using Razor Engine for each action defined in Controller.

Implementation Plan

1. Database: user ECommerceDB database provided.
2. Class Library ECommerceBOL application to implement all POCO (entity) classes.
3. Class Library ECommerceDAL to implement CRUD Operations Logic for all DA
4. ASP.NET MVC SunbeamEStore: Sign In & Sign Out, Display Hello message for authenticated user (maintain logged in customer object into http session).
5. ASP.NET MVC SunbeamEStore: Registration
6. ASP.NET MVC SunbeamEStore: Product Menu Display (Categories & in demand Products)
7. ASP.NET MVC SunbeamEStore: Product Details
8. ASP.NET MVC SunbeamEStore: add to customer Shopping cart. Cart can be implemented as List<Item>.
9. ASP.NET MVC SunbeamEStore: Show shopping cart contents with total bill.
10. ASP.NET MVC SunbeamEStore: Purchase i.e. add order along with its details into database.
11. ASP.NET MVC SunbeamEStore: Display Pending orders list for staff login.
12. ASP.NET MVC SunbeamEStore: Display Dispatched orders list for staff login.
13. ASP.NET MVC SunbeamEStore: Display Order details for selected Pending order.
14. ASP.NET MVC SunbeamEStore: Update status of order to Dispatched.
15. ASP.NET MVC SunbeamEStore: Use of CSS & images to provide consistent rich look and feel for SunbeamEstore online shopping Portal.

Evaluation Parameters:

1. User Interface Design with following features:
    a. Layout with CSS, HTML 5 and BootStrap.js
    b. Product Catalog
    c. Product Details
    d. Shopping Cart
    e. Payment Status
2. Validations for User Interface while Data Entry Web pages
    a. Client and Server Side Validation as per need of Ecommerce Web site using HTML helpers
3. Creating Database as per the given table structure
    a. All Tables with Data Entry
4. Completion of retail Operations
    a. Adding New Product
    b. Viewing and changing status existing Orders
    c. Editing Existing Product Information
    d. Model View controller Structure
5. Completion of Ecommerce Portal using n-Tier Architecture
    a. UI Layer with Reusable components
    b. UI Layer with Model View Controller pattern of ASP.NET MVC
    c. Context Layer for Object Relational Mapping using Entity Framework
    d. Web API for REST Queries
    e. Business Object Layer
    f. Data Access Logic Layer
6. Completion of User Shopping Experience
    a. Browse Categories on Home web (view)
    b. View product details.
    c. Check a product to shopping cart
    d. Order Details on Checkout a product from shopping cart
    e. Log in with valid username and password for placing an order.


http://localhost:61383/
Home Page - E Shopping P...
Sunbeam EStore
Home
Products
Orders
Customers
About
Contact
Register
Log in
EStore
E Store is a online shopping Portal for purchasing Electronic Items.
Learn more »
Getting started
Online Shopping experience gives you a powerful, interactive expereince to purchase Electronic Products.
Learn more »
EStore Keeping
This EStore makes it easy to add, remove, and update Product categories and Products to staff.
Learn more »
Business Analytics
You can easily find a shopping 360 degree Customer, Product, Social trend using Power view.
Learn more »
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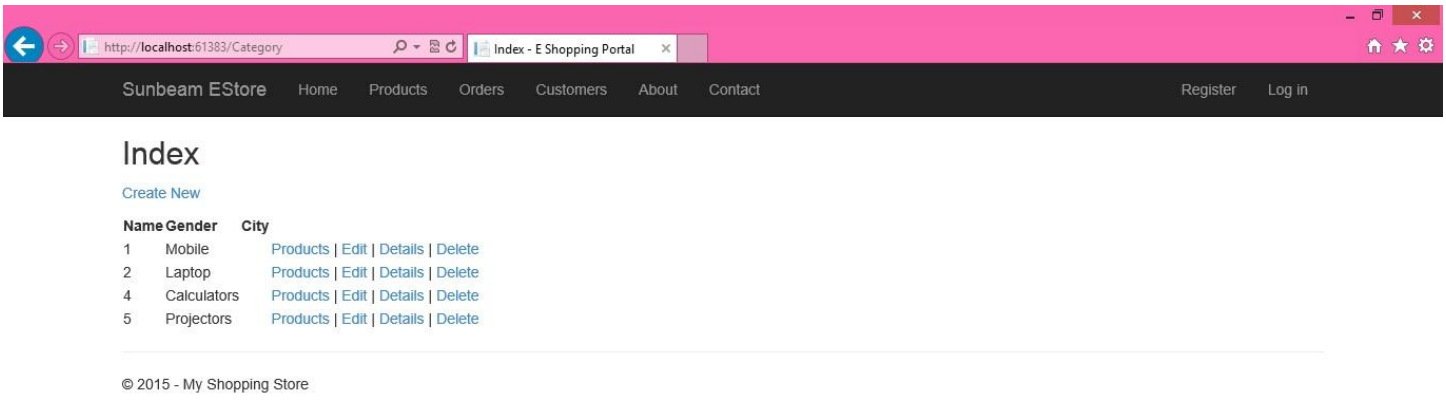
http://localhost:61383/Category
Index - E Shopping Portal
Sunbeam EStore
Home
Products
Orders
Customers
About
Contact
Register
Log in
Index
Create New
Name Gender City
1 Mobile Products | Edit | Details | Delete
2 Laptop Products | Edit | Details | Delete
4 Calculators Products | Edit | Details | Delete
5 Projectors Products | Edit | Details | Delete
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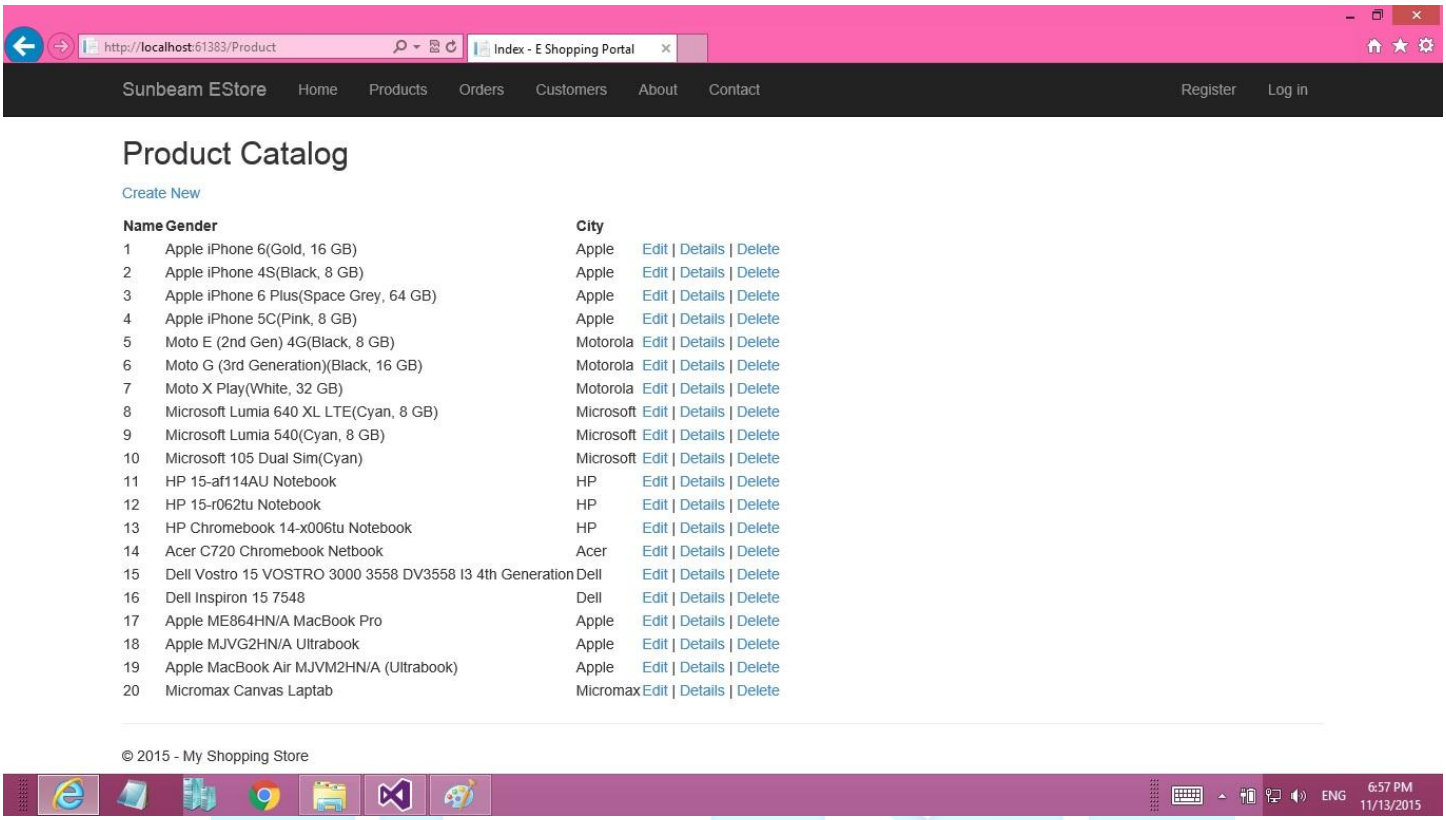
http://localhost:61383/Product
Index - E Shopping Portal
Sunbeam EStore
Home
Products
Orders
Customers
About
Contact
Register
Log in
Product Catalog
Create New
Name Gender
City
1 Apple iPhone 6(Gold, 16 GB) Apple Edit | Details | Delete
2 Apple iPhone 4S(Black, 8 GB) Apple Edit | Details | Delete
3 Apple iPhone 6 Plus(Space Grey, 64 GB) Apple Edit | Details | Delete
4 Apple iPhone 5C(Pink, 8 GB) Apple Edit | Details | Delete
5 Moto E (2nd Gen) 4G(Black, 8 GB) Motorola Edit | Details | Delete
6 Moto G (3rd Generation)(Black, 16 GB) Motorola Edit | Details | Delete
7 Moto X Play(White, 32 GB) Motorola Edit | Details | Delete
8 Microsoft Lumia 640 XL LTE(Cyan, 8 GB) Microsoft Edit | Details | Delete
9 Microsoft Lumia 540(Cyan, 8 GB) Microsoft Edit | Details | Delete
10 Microsoft 105 Dual Sim(Cyan) Microsoft Edit | Details | Delete
11 HP 15-af114AU Notebook HP Edit | Details | Delete
12 HP 15-r062tu Notebook HP Edit | Details | Delete
13 HP Chromebook 14-x006tu Notebook HP Edit | Details | Delete
14 Acer C720 Chromebook Netbook Acer Edit | Details | Delete
15 Dell Vostro 15 VOSTRO 3000 3558 DV3558 I3 4th Generation Dell Edit | Details | Delete
16 Dell Inspiron 15 7548 Dell Edit | Details | Delete
17 Apple ME864HN/A MacBook Pro Apple Edit | Details | Delete
18 Apple MJVG2HN/A Ultrabook Apple Edit | Details | Delete
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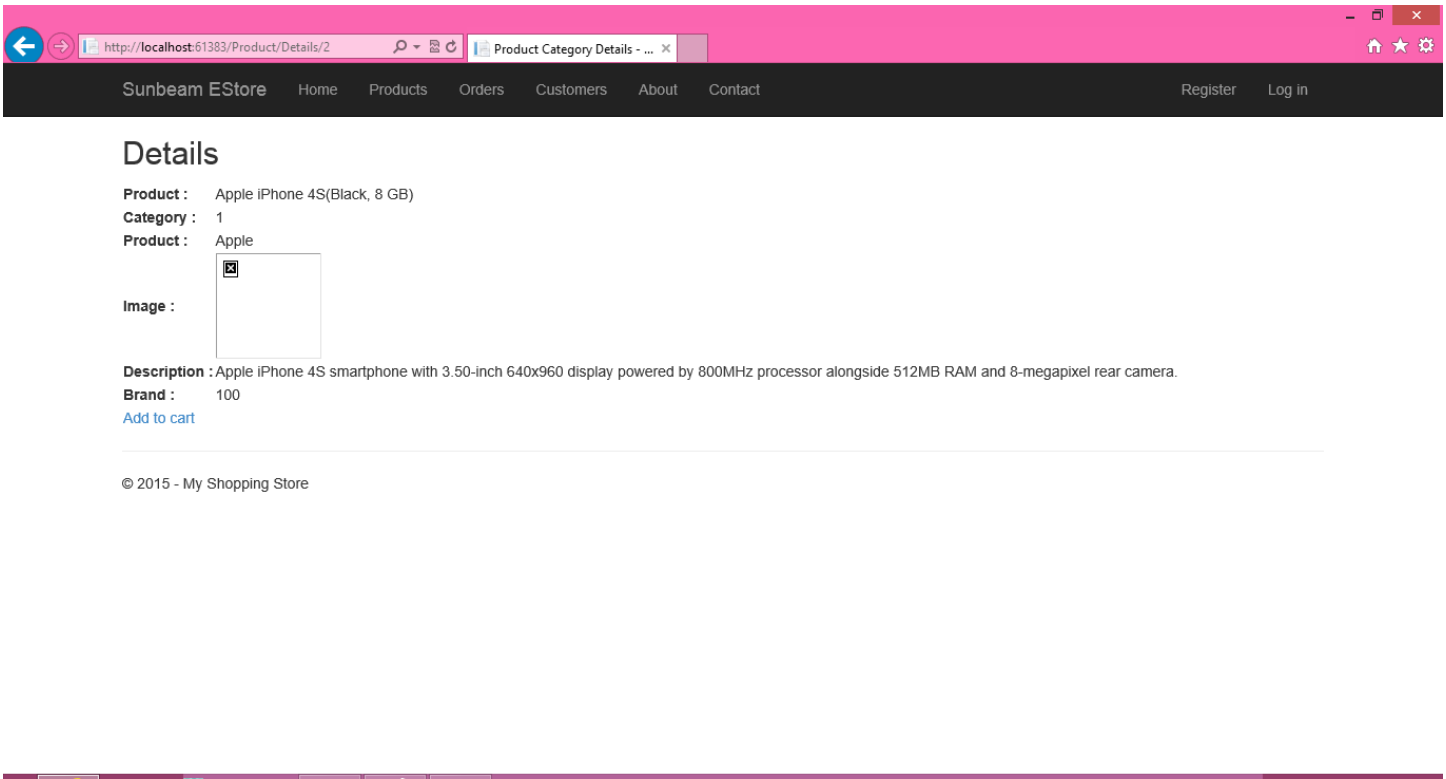
http://localhost:61383/Product/Details/2
Product Category Details - ...
Sunbeam EStore
Home
Products
Orders
Customers
About
Contact
Register
Log in
Details
Product : Apple iPhone 4S(Black, 8 GB)
Category : 1
Product : Apple
Image :
Description : Apple iPhone 4S smartphone with 3.50-inch 640x960 display powered by 800MHz processor alongside 512MB RAM and 8-megapixel rear camera.
Brand : 100
Add to cart
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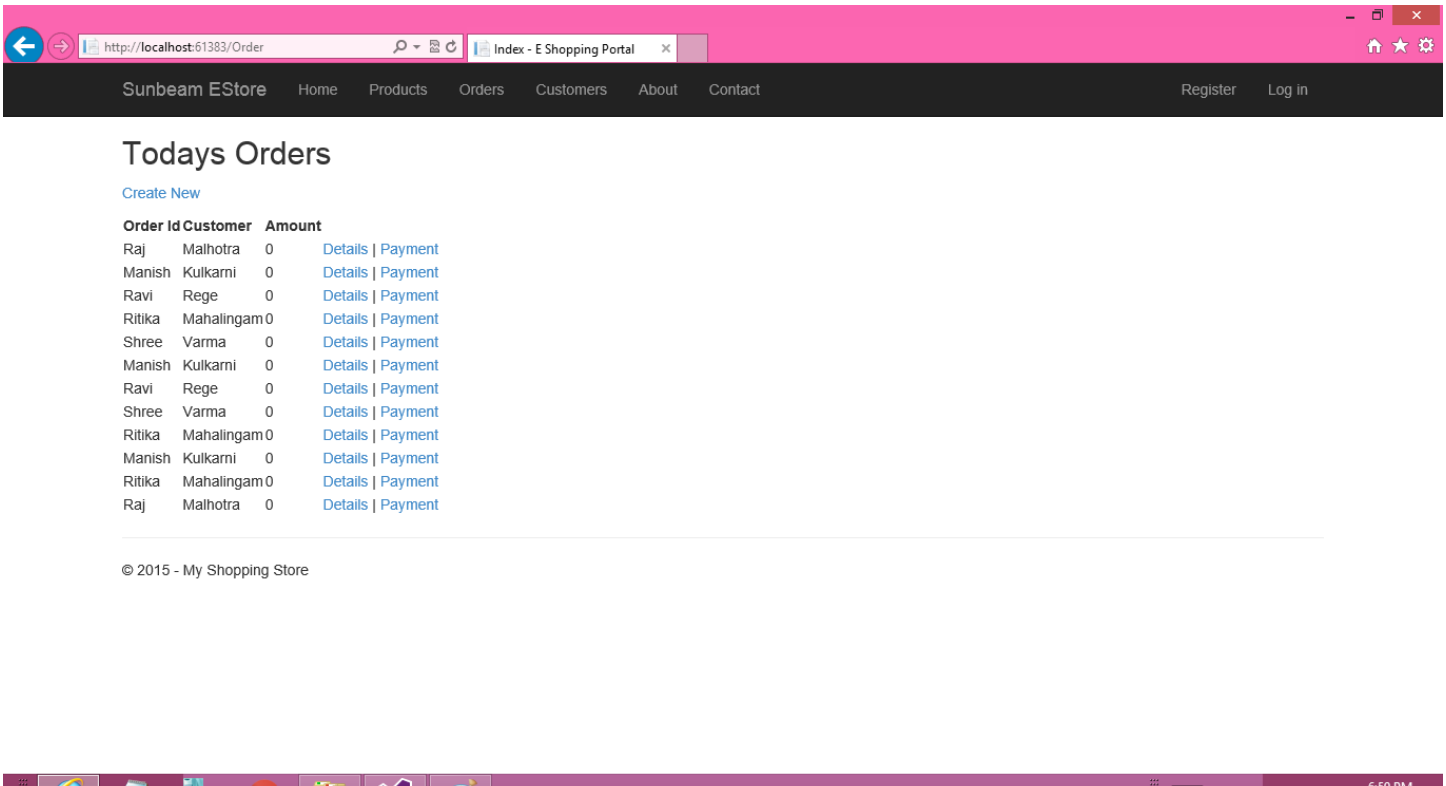
http://localhost:61383/Order
Index - E Shopping Portal
Sunbeam EStore
Home
Products
Orders
Customers
About
Contact
Register
Log in
Todays Orders
Create New
Order Id Customer Amount
Raj Malhotra 0 Details | Payment
Manish Kulkarni 0 Details | Payment
Ravi Rege 0 Details | Payment
Ritika Mahalingam 0 Details | Payment
Shree Varma 0 Details | Payment
Manish Kulkarni 0 Details | Payment
Ravi Rege 0 Details | Payment
Shree Varma 0 Details | Payment
Ritika Mahalingam 0 Details | Payment
Manish Kulkarni 0 Details | Payment
Ritika Mahalingam 0 Details | Payment
Raj Malhotra 0 Details | Payment
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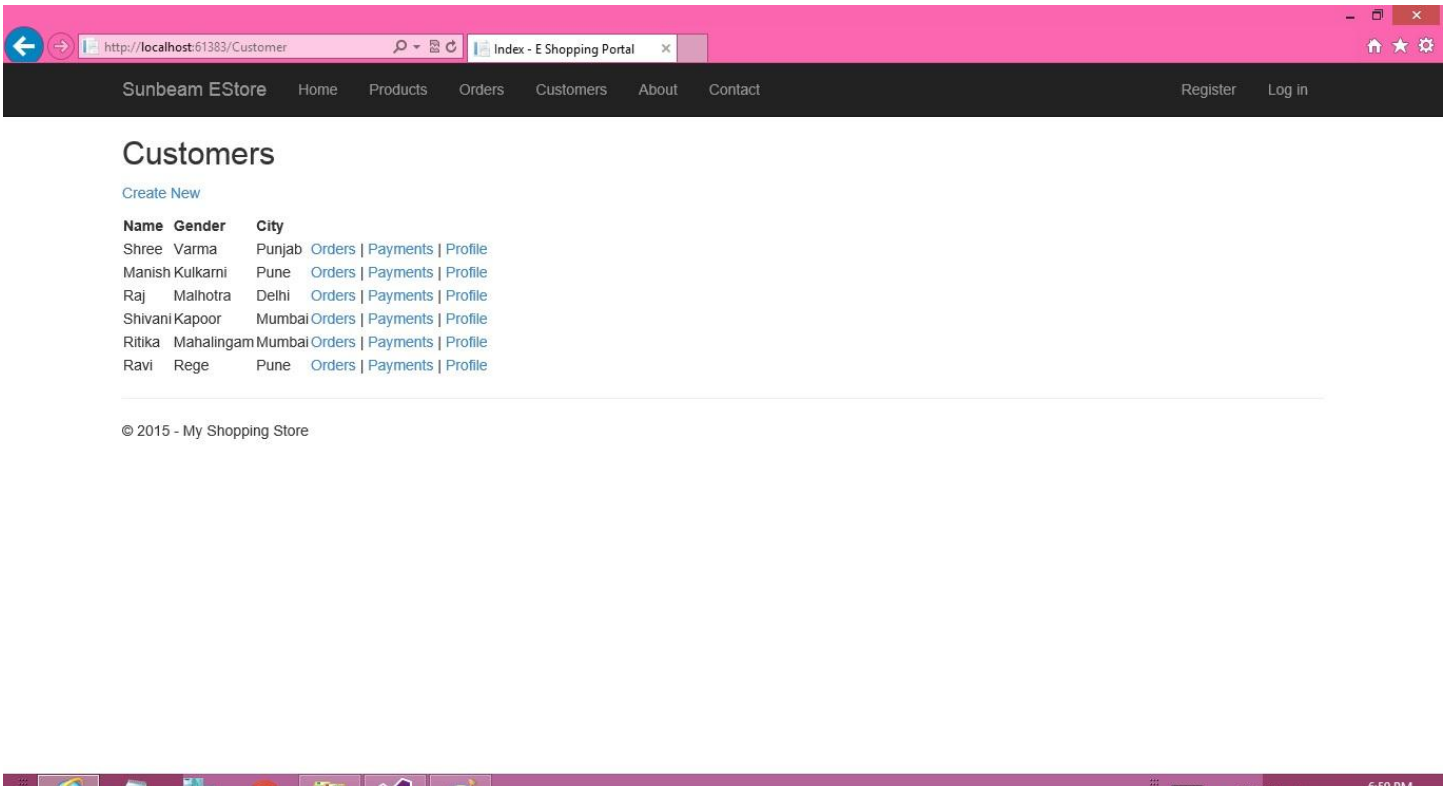
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Index - E Shopping Portal
Sunbeam EStore
Home
Products
Orders
Customers
About
Contact
Register
Log in
Customers
Create New
Name Gender City
Shree Varma Punjab Orders | Payments | Profile
Manish Kulkarni Pune Orders | Payments | Profile
Raj Malhotra Delhi Orders | Payments | Profile
Shivani Kapoor Mumbai Orders | Payments | Profile
Ritika Mahalingam Mumbai Orders | Payments | Profile
Ravi Rege Pune Orders | Payments | Profile
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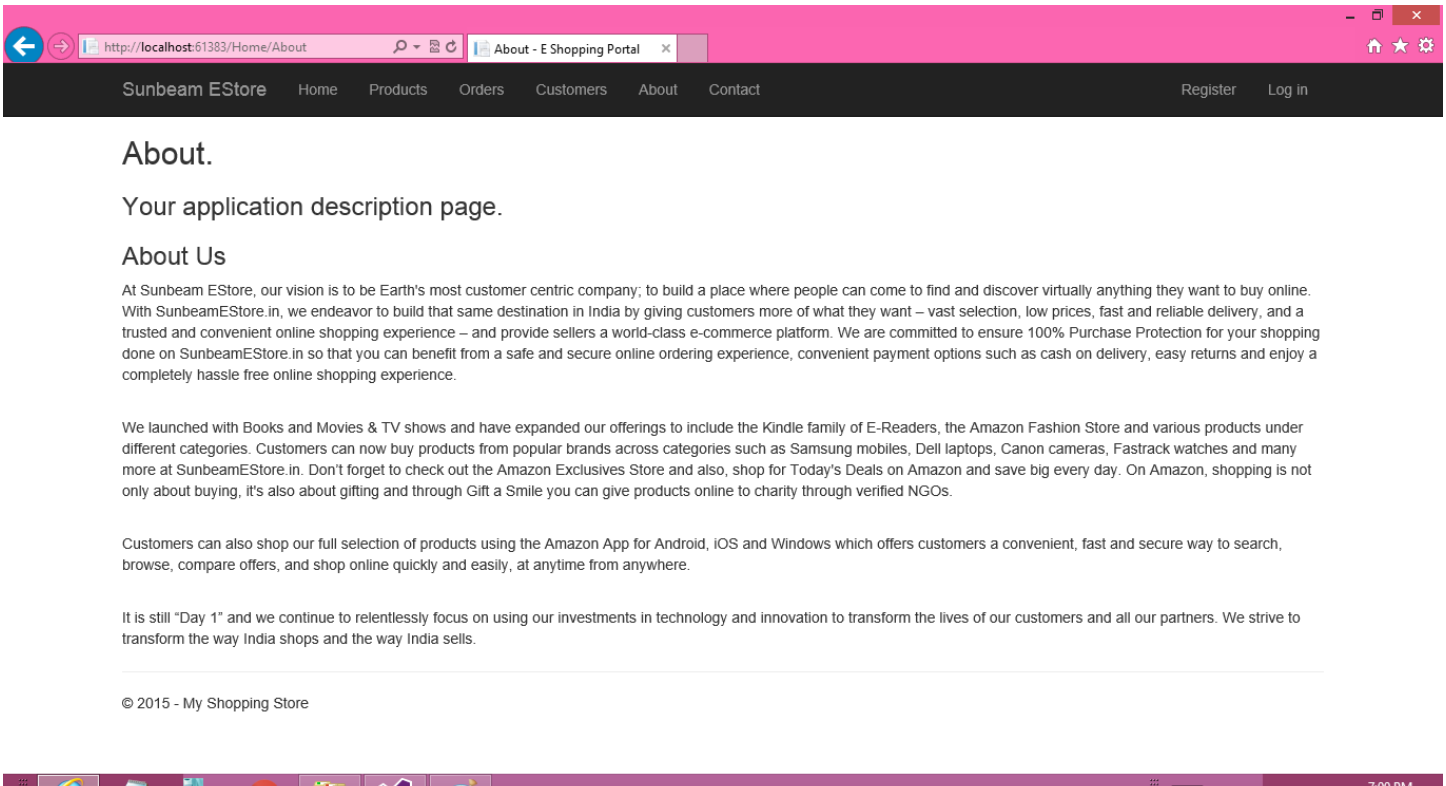
http://localhost:61383/Home/About
About - E Shopping Portal
Sunbeam EStore
Home
Products
Orders
Customers
About
Contact
Register
Log in
About.
Your application description page.
About Us
At Sunbeam EStore, our vision is to be Earth's most customer centric company; to build a place where people can come to find and discover virtually anything they want to buy online. With SunbeamEStore.in, we endeavor to build that same destination in India by giving customers more of what they want – vast selection, low prices, fast and reliable delivery, and a trusted and convenient online shopping experience – and provide sellers a world-class e-commerce platform. We are committed to ensure 100% Purchase Protection for your shopping done on SunbeamEStore.in so that you can benefit from a safe and secure online ordering experience, convenient payment options such as cash on delivery, easy returns and enjoy a completely hassle free online shopping experience.
We launched with Books and Movies & TV shows and have expanded our offerings to include the Kindle family of E-Readers, the Amazon Fashion Store and various products under different categories. Customers can now buy products from popular brands across categories such as Samsung mobiles, Dell laptops, Canon cameras, Fastrack watches and many more at SunbeamEStore.in. Don't forget to check out the Amazon Exclusives Store and also, shop for Today's Deals on Amazon and save big every day. On Amazon, shopping is not only about buying, it's also about gifting and through Gift a Smile you can give products online to charity through verified NGOs.
Customers can also shop our full selection of products using the Amazon App for Android, iOS and Windows which offers customers a convenient, fast and secure way to search, browse, compare offers, and shop online quickly and easily, at anytime from anywhere.
It is still “Day 1” and we continue to relentlessly focus on using our investments in technology and innovation to transform the lives of our customers and all our partners. We strive to transform the way India shops and the way India sells.
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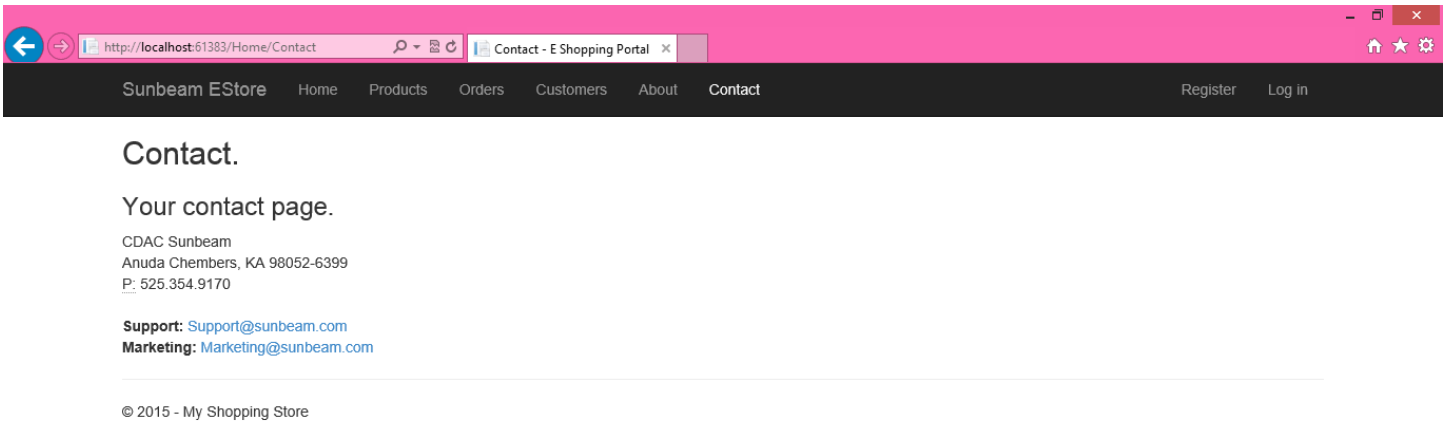
http://localhost:61383/Home/Contact
Contact - E Shopping Portal
Sunbeam EStore
Home
Products
Orders
Customers
About
Contact
Register
Log in
Contact.
Your contact page.
CDAC Sunbeam
Anuda Chembers, KA 98052-6399
P: 525.354.9170
Support: Support@sunbeam.com
Marketing: Marketing@sunbeam.com
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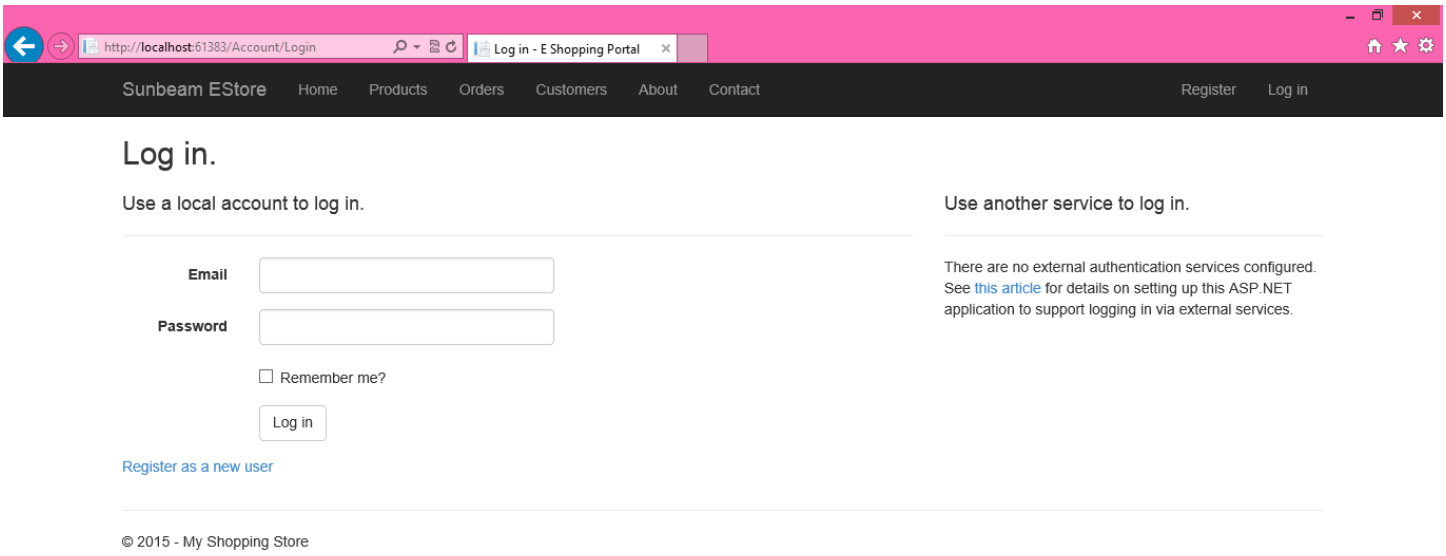
http://localhost:61383/Account/Login
Log in - E Shopping Portal
Sunbeam EStore
Home
Products
Orders
Customers
About
Contact
Register
Log in
Log in.
Use a local account to log in.
Email
Password
Remember me?
Log in
Register as a new user
Use another service to log in.
There are no external authentication services configured.
See this article for details on setting up this ASP.NET
application to support logging in via external services.
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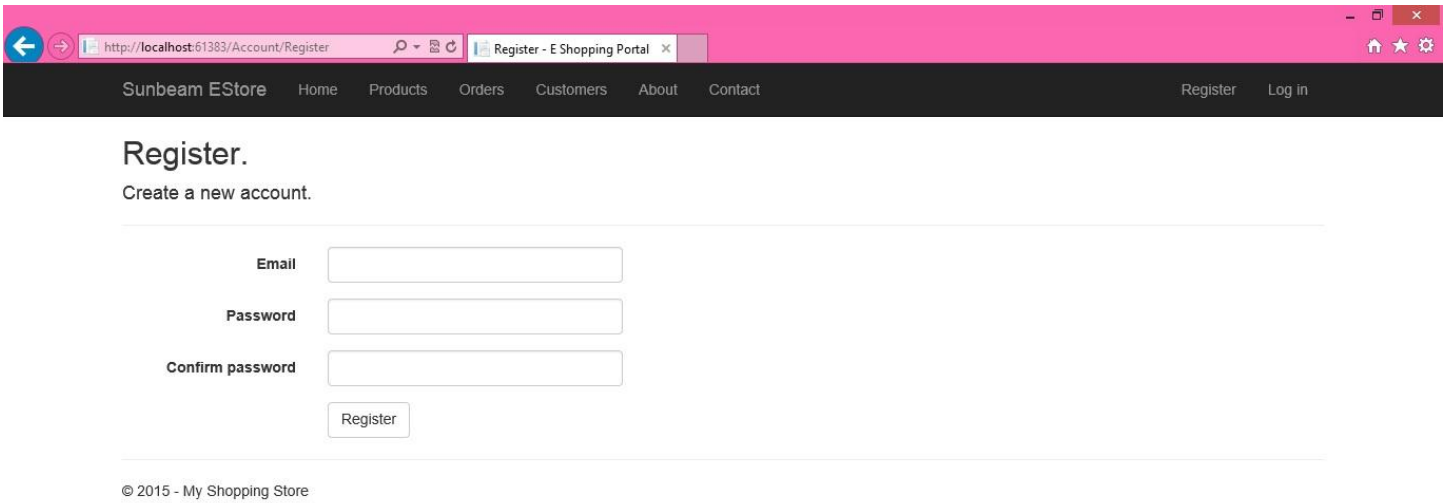
http://localhost:61383/Account/Register
Register - E Shopping Portal
Sunbeam EStore
Home
Products
Orders
Customers
About
Contact
Register
Log in
Register.
Create a new account.
Email
Password
Confirm password
Register
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