



National University  
of Computer and Emerging Sciences  
Chiniot-Faisalabad Campus



## CS3004-Database Lab

Project Deliverable I

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### Submitted To

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## E-Commerce Store:-

## Graphical User Interface:-

Question:- 01

Code:-

using System;

using System.Collections.Generic;

using System.Linq;

using System.Windows.Forms;

namespace ECommerceStore

{

public class Program

{

static void Main()

{

Application.EnableVisualStyles();

Application.SetCompatibleTextRenderingDefault(false);

Application.Run(new MainForm());

}

}

public class MainForm : Form

{

private Button btnLogin, btnRegister;

public MainForm()

{

InitializeComponents();

}

private void InitializeComponents()

{

this.Text = "E-Commerce Store";

btnLogin = new Button { Text = "Login", Location = new System.Drawing.Point(50, 50), Width = 200 };

btnRegister = new Button { Text = "Register", Location = new System.Drawing.Point(50, 100), Width = 200 };

```

btnLogin.Click += BtnLogin_Click;

Controls.Add(btnLogin);

Controls.Add(btnRegister);

}

private void BtnLogin_Click(object sender, EventArgs e)
{
    LoginForm loginForm = new LoginForm();
    loginForm.ShowDialog();
}

private void BtnRegister_Click(object sender, EventArgs e)
{
    RegisterForm registerForm = new RegisterForm();
    registerForm.ShowDialog();
}

}

public class LoginForm : Form
{
    private TextBox txtUsername, txtPassword;
    private Button btnLogin;
    private Label lblUsername, lblPassword;

    public LoginForm()
    {
        InitializeComponent();
    }

    private void InitializeComponent()
    {
        this.Text = "Login";

        this.Size = new System.Drawing.Size(300, 250);

        lblUsername = new Label { Text = "Enter Username:", Location = new System.Drawing.Point(30, 30), Width = 120 };
        lblPassword = new Label { Text = "Enter Password:", Location = new System.Drawing.Point(30, 80), Width = 120 };
        txtUsername = new TextBox { Location = new System.Drawing.Point(150, 30), Width = 100 };
        txtPassword = new TextBox { Location = new System.Drawing.Point(150, 80), Width = 100, PasswordChar = '*' };
        btnLogin = new Button { Text = "Login", Location = new System.Drawing.Point(100, 130), Width = 100 };

        btnLogin.Click += BtnLogin_Click;

        Controls.Add(lblUsername);
        Controls.Add(lblPassword);
        Controls.Add(txtUsername);
        Controls.Add(txtPassword);
        Controls.Add(btnLogin);
    }

    private void BtnLogin_Click(object sender, EventArgs e)
    {
        string username = txtUsername.Text;
        string password = txtPassword.Text;

        var user = UserController.Authenticate(username, password);

        if (user != null)

```

```
{
    MessageBox.Show("Login successful!");

    if (user.Role == UserRole.Customer)
    {
        CustomerDashboard customerDashboard = new CustomerDashboard();

        customerDashboard.ShowDialog();
    }

    else if (user.Role == UserRole.Manager)
    {
        ManagerDashboard managerDashboard = new ManagerDashboard();

        managerDashboard.ShowDialog();
    }

    this.Close();
}

else
{
    MessageBox.Show("Invalid credentials.");
}
}
}

public class RegisterForm : Form
{
    private TextBox txtUsername, txtPassword, txtConfirmPassword;

    private ComboBox cmbRole;

    private Button btnRegister;

    private Label lblUsername, lblPassword, lblConfirmPassword, lblRole;

    public RegisterForm()
    {
        InitializeComponent();

        private void InitializeComponent()
        {
            this.Text = "Register";

            this.Size = new System.Drawing.Size(300, 350);

            lblUsername = new Label { Text = "Enter Username:", Location = new System.Drawing.Point(30, 30), Width = 120 };

            lblPassword = new Label { Text = "Enter Password:", Location = new System.Drawing.Point(30, 80), Width = 120 };

            lblConfirmPassword = new Label { Text = "Confirm Password:", Location = new System.Drawing.Point(30, 130), Width = 120 };

            lblRole = new Label { Text = "Select Role:", Location = new System.Drawing.Point(30, 180), Width = 120 };

            txtUsername = new TextBox { Location = new System.Drawing.Point(150, 30), Width = 100 };

            txtPassword = new TextBox { Location = new System.Drawing.Point(150, 80), Width = 100, PasswordChar = '*' };

            txtConfirmPassword = new TextBox { Location = new System.Drawing.Point(150, 130), Width = 100, PasswordChar = '*' };

            cmbRole = new ComboBox { Location = new System.Drawing.Point(150, 180), Width = 100 };

            cmbRole.Items.AddRange(new string[] { "Customer", "Manager" });

            btnRegister = new Button { Text = "Register", Location = new System.Drawing.Point(100, 230), Width = 100 };

            btnRegister.Click += BtnRegister_Click;

            Controls.Add(lblUsername);

            Controls.Add(lblPassword);
```

```

Controls.Add(lblConfirmPassword);

Controls.Add(lblRole);

Controls.Add(txtUsername);

Controls.Add(txtPassword);

Controls.Add(txtConfirmPassword);

Controls.Add(cmbRole);

Controls.Add(btnRegister);

}

private void BtnRegister_Click(object sender, EventArgs e)
{
    string username = txtUsername.Text;
    string password = txtPassword.Text;
    string confirmPassword = txtConfirmPassword.Text;
    string roleString = cmbRole.SelectedItem.ToString();
    if (password != confirmPassword)
    {
        MessageBox.Show("Passwords do not match.");
        return;
    }
    UserRole role = roleString == "Customer" ? UserRole.Customer : UserRole.Manager;
    bool isRegistered = UserController.RegisterUser(username, password, role);
    if (isRegistered)
    {
        MessageBox.Show("Registration successful! Please login.");
        this.Close();
    }
    else
    {
        MessageBox.Show("Registration failed.");
    }
}

public class CustomerDashboard : Form
{
    public CustomerDashboard()
    {
        this.Text = "Customer Dashboard";

        Button btnBrowseProducts = new Button { Text = "Browse Products", Location = new System.Drawing.Point(50, 50), Width = 200 };
        Button btnViewCart = new Button { Text = "View Cart", Location = new System.Drawing.Point(50, 100), Width = 200 };
        btnBrowseProducts.Click += BtnBrowseProducts_Click;
        btnViewCart.Click += BtnViewCart_Click;

        Controls.Add(btnBrowseProducts);
        Controls.Add(btnViewCart);
    }

    private void BtnBrowseProducts_Click(object sender, EventArgs e)
    {
        ProductForm productForm = new ProductForm();

```

```

productForm.ShowDialog();
}

private void BtnViewCart_Click(object sender, EventArgs e)
{
    CartForm cartForm = new CartForm();
    cartForm.ShowDialog();
}

}

public class ManagerDashboard : Form
{
    public ManagerDashboard()
    {
        this.Text = "Manager Dashboard";

        Button btnManageProducts = new Button { Text = "Manage Products", Location = new System.Drawing.Point(50, 50), Width = 200 };
        btnManageProducts.Click += BtnManageProducts_Click;
        Controls.Add(btnManageProducts);
    }

    private void BtnManageProducts_Click(object sender, EventArgs e)
    {
        ManageProductsForm manageProductsForm = new ManageProductsForm();
        manageProductsForm.ShowDialog();
    }
}

public class ProductForm : Form
{
    private ListBox lstProducts;
    private Button btnAddToCart;
    private List<Product> products;

    public ProductForm()
    {
        InitializeComponent();
    }

    private void InitializeComponent()
    {
        this.Text = "Browse Products";

        this.Size = new System.Drawing.Size(300, 400);

        lstProducts = new ListBox { Location = new System.Drawing.Point(30, 30), Width = 250, Height = 200 };
        btnAddToCart = new Button { Text = "Add to Cart", Location = new System.Drawing.Point(30, 250), Width = 250 };
        btnAddToCart.Click += BtnAddToCart_Click;

        Controls.Add(lstProducts);
        Controls.Add(btnAddToCart);

        LoadProducts();
    }

    private void LoadProducts()
    {
        products = UserController.GetAvailableProducts();
        lstProducts.DataSource = products.Select(p => p.Name).ToList();
    }
}

```

```
}
private void BtnAddToCart_Click(object sender, EventArgs e)
{
    string selectedProductName = lstProducts.SelectedItem.ToString();
    var product = products.First(p => p.Name == selectedProductName);
    UserController.AddProductToCart(product);
    // Refresh the product list
    products = UserController.GetAvailableProducts();
    lstProducts.DataSource = products.Select(p => p.Name).ToList();
}
}

public class CartForm : Form
{
    private ListBox lstCart;

    public CartForm()
    {
        this.Text = "Cart";
        lstCart = new ListBox { Location = new System.Drawing.Point(30, 30), Width = 250, Height = 200 };
        Controls.Add(lstCart);
        LoadCart();
    }

    private void LoadCart()
    {
        var cart = UserController.GetCart();
        lstCart.DataSource = cart.Select(p => p.Name).ToList();
    }
}

public static class UserController
{
    private static List<User> users = new List<User>();
    private static List<Product> products = new List<Product>();
    private static List<Product> cart = new List<Product>();

    static UserController()
    {
        // Seed some users and products for demo
        users.Add(new User("customer1", "password", UserRole.Customer));
        users.Add(new User("manager1", "password", UserRole.Manager));
        products.Add(new Product("Product A", 10));
        products.Add(new Product("Product B", 20));
    }

    public static User Authenticate(string username, string password)
    {
        return users.FirstOrDefault(u => u.Username == username && u.Password == password);
    }

    public static bool RegisterUser(string username, string password, UserRole role)
    {
        if (users.Any(u => u.Username == username)) return false;
    }
}
```

```

users.Add(new User(username, password, role));

return true;
}

public static List<Product> GetAvailableProducts()
{
return products.Where(p => !cart.Contains(p)).ToList();
}

public static void AddProductToCart(Product product)
{
cart.Add(product);
}

public static List<Product> GetCart()
{
return cart;
}

// New method to add a product (for Manager)
public static void AddProduct(Product product)
{
products.Add(product);
}
}

public class User
{
public string Username { get; set; }
public string Password { get; set; }
public UserRole Role { get; set; }

public User(string username, string password, UserRole role)
{
Username = username;
Password = password;
Role = role;
}
}

public enum UserRole
{
Customer,
Manager
}

public class Product
{
public string Name { get; set; }
public decimal Price { get; set; }

public Product(string name, decimal price)
{
Name = name;
Price = price;
}
}

```

```

public class ManageProductsForm : Form
{
    private TextBox txtProductName, txtProductPrice;

    private Button btnAddProduct;

    public ManageProductsForm()
    {
        InitializeComponent();
    }

    private void InitializeComponent()
    {
        this.Text = "Manage Products";

        this.Size = new System.Drawing.Size(300, 200);

        txtProductName = new TextBox { Location = new System.Drawing.Point(50, 50), Width = 200 };
        txtProductPrice = new TextBox { Location = new System.Drawing.Point(50, 80), Width = 200 };
        btnAddProduct = new Button { Text = "Add Product", Location = new System.Drawing.Point(50, 110), Width = 200 };
        btnAddProduct.Click += BtnAddProduct_Click;

        Controls.Add(txtProductName);
        Controls.Add(txtProductPrice);
        Controls.Add(btnAddProduct);
    }

    private void BtnAddProduct_Click(object sender, EventArgs e)
    {
        string productName = txtProductName.Text;
        decimal productPrice;

        if (decimal.TryParse(txtProductPrice.Text, out productPrice))
        {
            Product newProduct = new Product(productName, productPrice);
            UserController.AddProduct(newProduct);
            MessageBox.Show("Product added successfully.");
        }
        else
        {
            MessageBox.Show("Invalid price.");
        }
    }
}

```



Login

Register

Enter Username: Ahmad

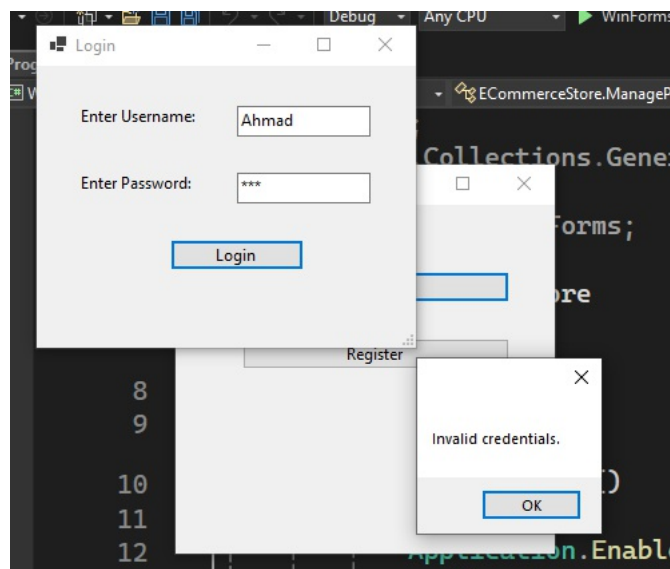
Enter Password: \*\*\*

Login

×

Invalid credentials.

OK



Register

Enter Username:

Enter Password:

Confirm Password:

Select Role:

Register

×

Passwords do not match.

OK

Register

Enter Username:

Enter Password:

Confirm Password:

Select Role:

Register

×

Passwords do not match.

OK

Register

Enter Username:

Enter Password:

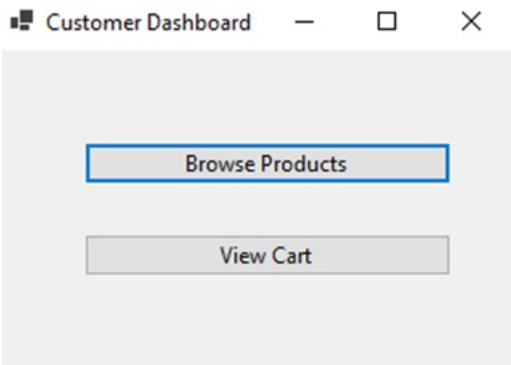
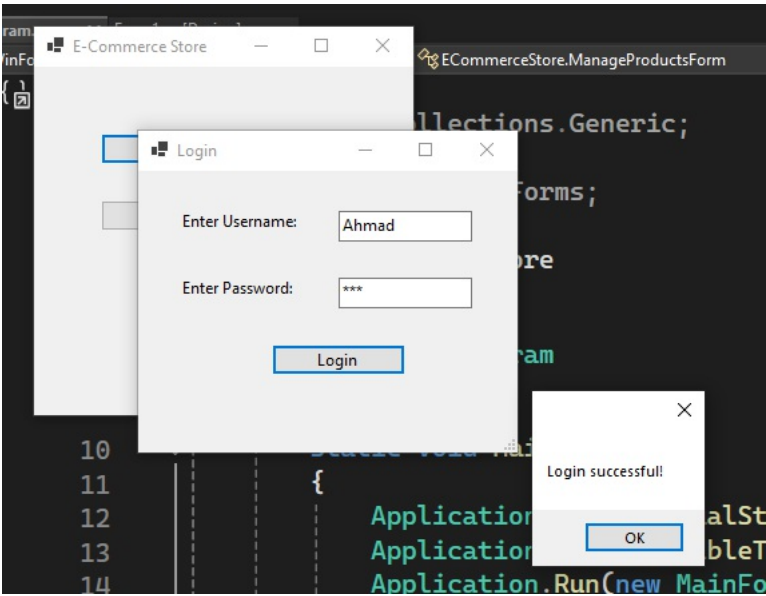
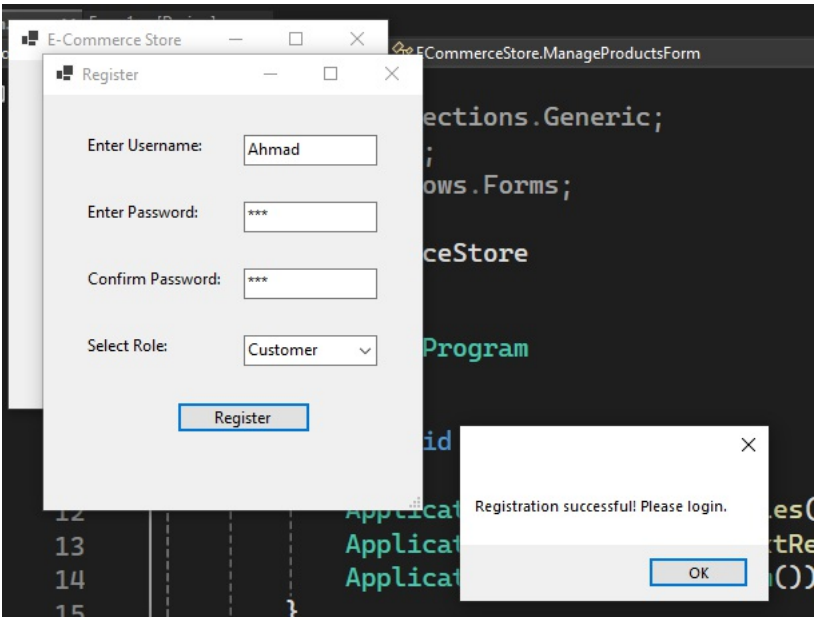
Confirm Password:

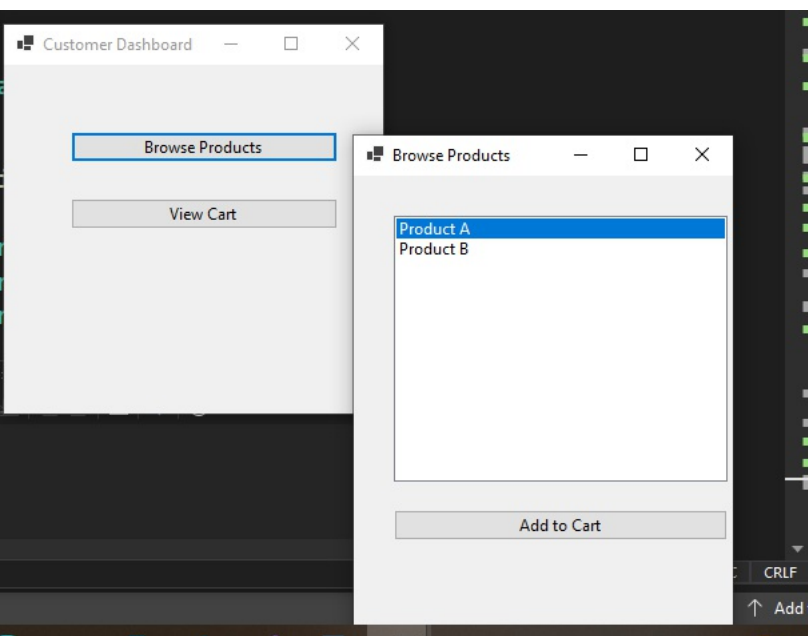
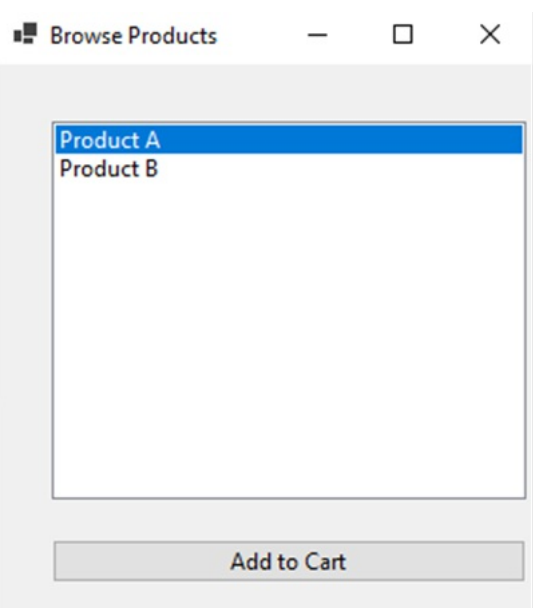
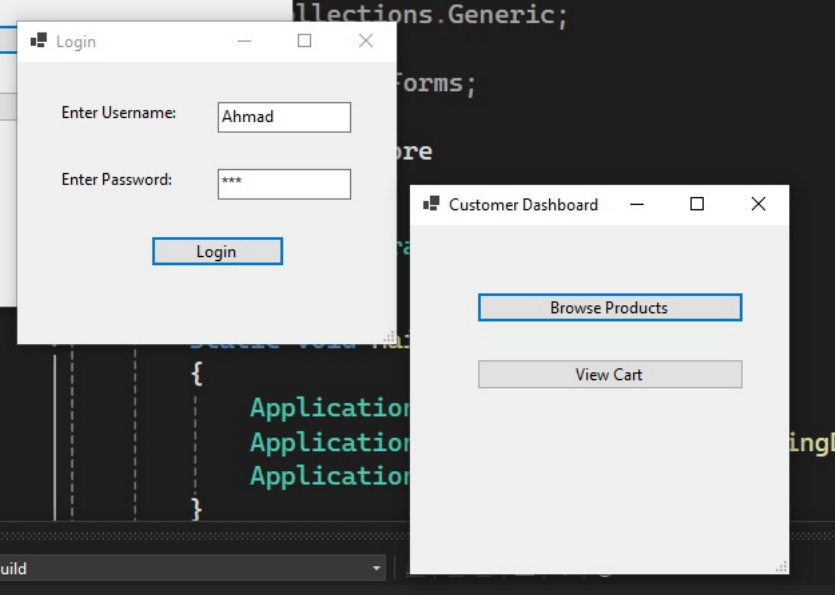
Select Role:

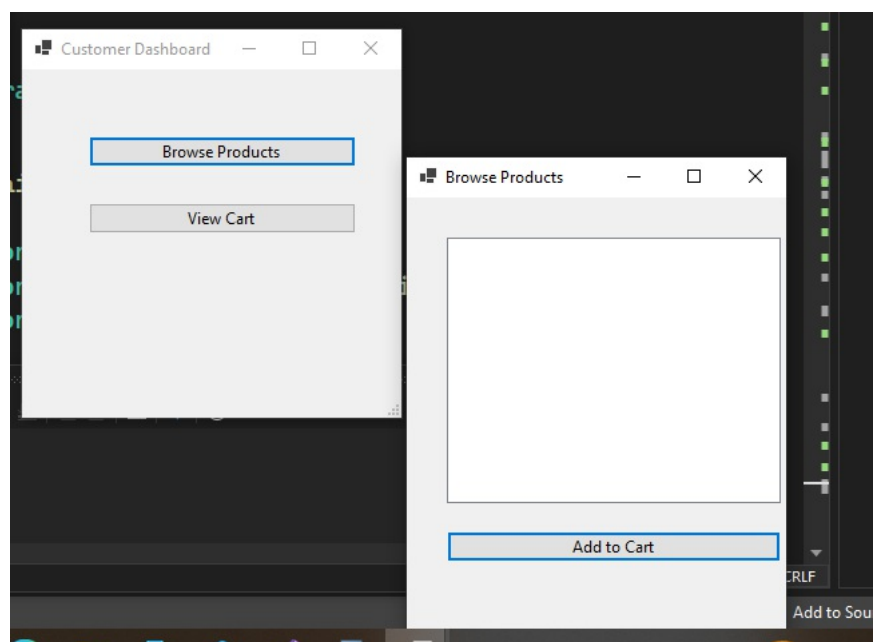
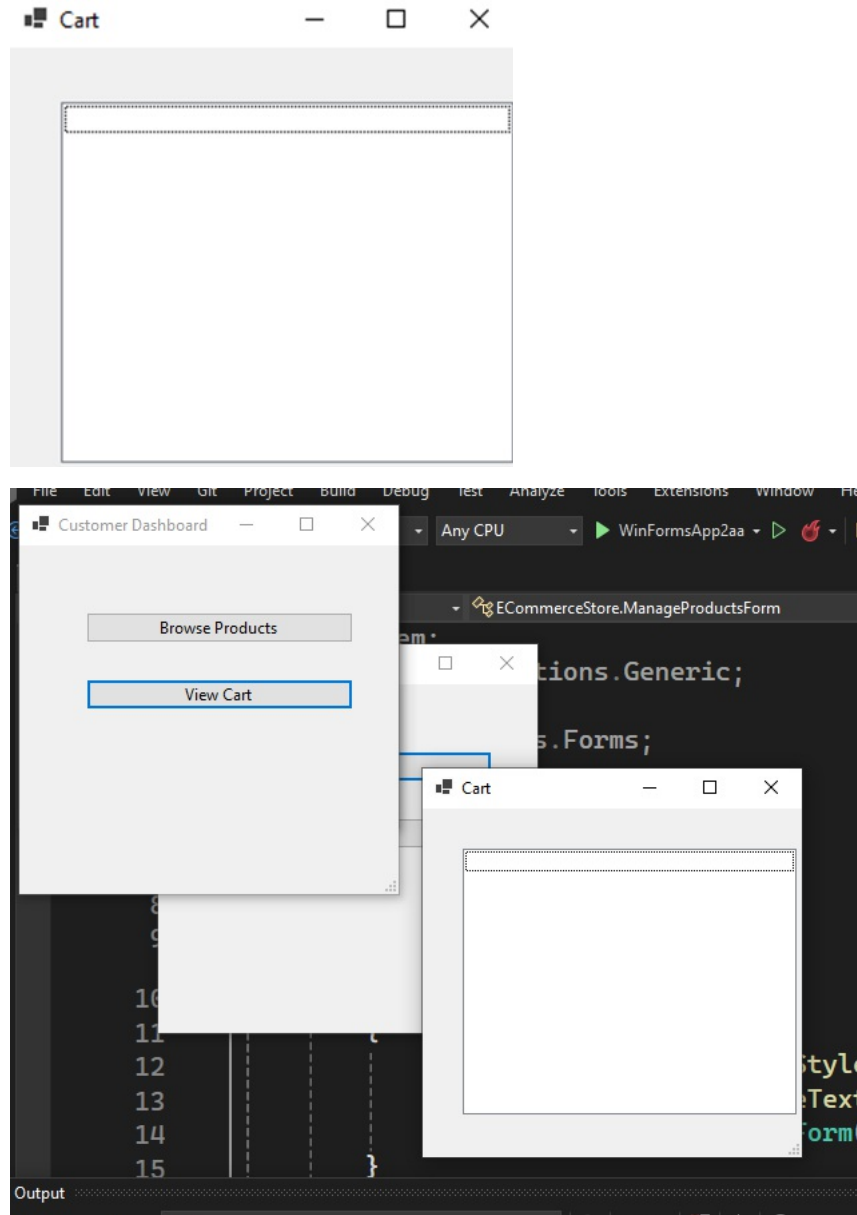
Register

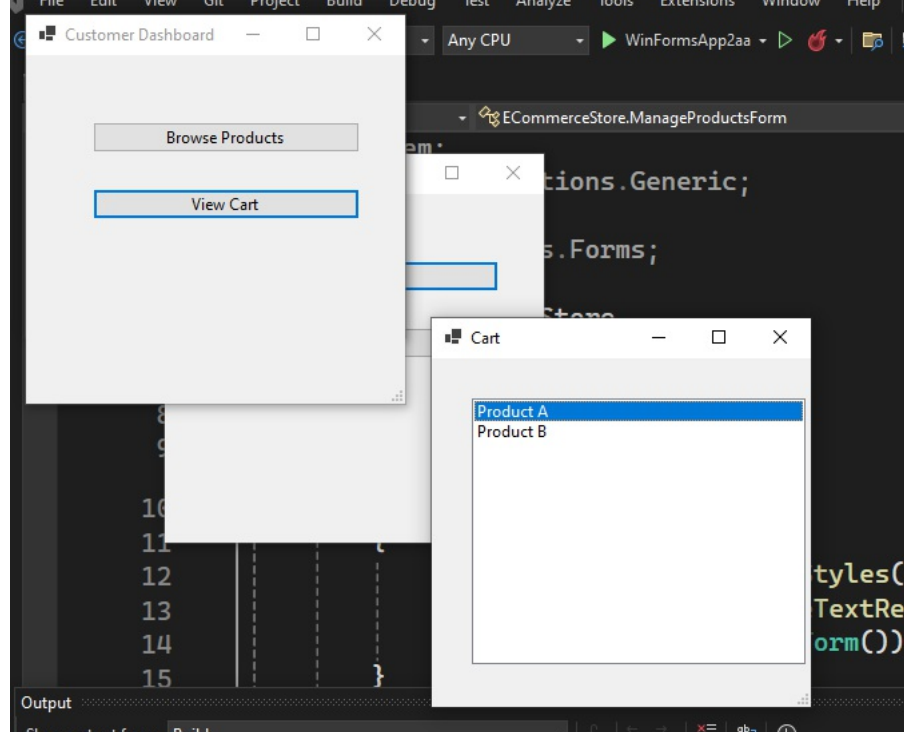
Registration successful! Please login.

OK









A "Register" form window with a light gray background. It contains the following fields and controls:

- Enter Username:** A text box containing the text "Ali".
- Enter Password:** A password box containing three asterisks "\*\*\*".
- Confirm Password:** A password box containing three asterisks "\*\*\*".
- Select Role:** A dropdown menu with "Manager" selected.
- Register**: A button at the bottom of the form.

This screenshot shows the "E-Commerce Store" application window. It has a light gray background and two buttons: "Login" and "Register". The "Register" button is highlighted with a blue border. The "Register" form window is open over the application, showing the same fields as in the previous image: "Enter Username" (Ali), "Enter Password" (\*\*\*), "Confirm Password" (\*\*\*), "Select Role" (Manager), and a "Register" button.

