INTERNET APPLICATION DEVELOPMENT
LAB 4:

Problem Statement:

Problem 1) Develop a page to demonstrate various events which are raised and handled during ASP.NET Page processing once the page object has been created. *(Develop in Visual studio and the host it on your site)* Draw (in space given below) the page processing sequence and write description about it? *(For solution you may refer to class discussions, presentations and live demonstrations.)*

On sheet

Problem 2) With reference to above Problem 1, you are required to do experiment with debugging using break points. Learn how line by line code execution can be realized. Write its benefits below?

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Problem 3) Refer to Lab 1 in which paper prototyping and HTML interfaces were developed for Pine Valley Furniture Company. The next task is to convert plain html into web forms in order to realize a web application. The application should incorporate following functionalities:

- i) New Customer Registration

CustomerRegistration.aspx.cs:

```
using System;
using System.Data.SqlClient;
using System.Configuration;
using System.Web.UI;

namespace IADLAB4
{
    public partial class CustomerRegistration : Page
    {
        protected void btnRegister_Click(object sender, EventArgs e)
        {
            // Get connection string from Web.config
            string constr =
ConfigurationManager.ConnectionStrings["constr"].ConnectionString;

            using (SqlConnection con = new SqlConnection(constr))
            {
                SqlCommand cmd = new SqlCommand();
                cmd.Connection = con;

                // Parameterized query (SAFE)
                cmd.CommandText = @"INSERT INTO CUSTOMER_t
                (Customer_Id, Customer_Name, Customer_Address, Customer_City,
Customer_State, Postal_Code)
                VALUES (@id, @name, @address, @city, @state, @postal)";

                // Add parameters
                cmd.Parameters.AddWithValue("@id", txtId.Text);
                cmd.Parameters.AddWithValue("@name", txtName.Text);
                cmd.Parameters.AddWithValue("@address", txtAddress.Text);
```

```
                cmd.Parameters.AddWithValue("@city", txtCity.Text);
                cmd.Parameters.AddWithValue("@state", txtState.Text);
                cmd.Parameters.AddWithValue("@postal", txtPostal.Text);

                try
                {
                    con.Open();
                    cmd.ExecuteNonQuery();

                    lblMessage.ForeColor = System.Drawing.Color.Green;
                    lblMessage.Text = "Customer Registered Successfully!";
                }
                catch (Exception ex)
                {
                    lblMessage.ForeColor = System.Drawing.Color.Red;
                    lblMessage.Text = ex.Message;
                }
            }
        }
    }
}
```

- ii) Searching of Products

```
using System;
using System.Data;
using System.Data.SqlClient;
using System.Configuration;
using System.Web.UI;

namespace IADLAB4
{
    public partial class ProductSearch : Page
    {
        protected void Page_Load(object sender, EventArgs e)
        {
            // No code needed here
        }

        protected void btnSearch_Click(object sender, EventArgs e)
        {
            string productName = txtProduct.Text.Trim();

            if (string.IsNullOrEmpty(productName))
            {
                lblResult.ForeColor = System.Drawing.Color.Red;
                lblResult.Text = "Please enter a product name.";
                return;
            }

            string constr =
ConfigurationManager.ConnectionStrings["constr"].ConnectionString;

            try
            {
                using (SqlConnection con = new SqlConnection(constr))
                {
                    string query = @"SELECT Product_Id, Product_Description,
Product_Finish, Standard_Price
                                     FROM PRODUCT_t
                                     WHERE Product_Description LIKE @name";

                    SqlCommand cmd = new SqlCommand(query, con);
                    cmd.Parameters.AddWithValue("@name", "%" + productName + "%");
```

```
                    SqlDataAdapter da = new SqlDataAdapter(cmd);
                    DataTable dt = new DataTable();

                    con.Open();
                    da.Fill(dt);

                    if (dt.Rows.Count > 0)
                    {
                        gvProducts.DataSource = dt;
                        gvProducts.DataBind();

                        lblResult.ForeColor = System.Drawing.Color.Green;
                        lblResult.Text = dt.Rows.Count + " product(s) found.";
                    }
                    else
                    {
                        gvProducts.DataSource = null;
                        gvProducts.DataBind();

                        lblResult.ForeColor = System.Drawing.Color.Red;
                        lblResult.Text = "No products found.";
                    }
                }
            }
            catch (Exception ex)
            {
                lblResult.ForeColor = System.Drawing.Color.Red;
                lblResult.Text = ex.Message;
            }
        }

        protected void btnBack_Click(object sender, EventArgs e)
        {
            Response.Redirect("Default.aspx");
        }
    }
}
```

- iii) Products Selection and Order Placement

```
using System;
using System.Data.SqlClient;
using System.Configuration;
using System.Web.UI;

namespace IADLAB4
{
    public partial class OrderPlacement : Page
    {
        protected void btnPlaceOrder_Click(object sender, EventArgs e)
        {
            if (string.IsNullOrEmpty(txtProductID.Text) ||
                string.IsNullOrEmpty(txtQuantity.Text) ||
                string.IsNullOrEmpty(txtCustomerID.Text))
            {
                lblMessage.ForeColor = System.Drawing.Color.Red;
                lblMessage.Text = "Please fill all fields.";
                return;
            }

            string constr =
ConfigurationManager.ConnectionStrings["constr"].ConnectionString;

            int productId = Convert.ToInt32(txtProductID.Text);
            int quantity = Convert.ToInt32(txtQuantity.Text);
```

```
            int customerId = Convert.ToInt32(txtCustomerID.Text);

            try
            {
                using (SqlConnection con = new SqlConnection(constr))
                {
                    con.Open();

                    // STEP 1: Generate Order ID
                    SqlCommand getIdCmd = new SqlCommand("SELECT
ISNULL(MAX(Order_Id),0)+1 FROM ORDER_t", con);
                    int orderId = (int)getIdCmd.ExecuteScalar();

                    // STEP 2: Insert into ORDER_t
                    SqlCommand orderCmd = new SqlCommand(
                        "INSERT INTO ORDER_t (Order_Id, Customer_Id, Order_Date)
VALUES (@oid, @cid, @date)", con);

                    orderCmd.Parameters.AddWithValue("@oid", orderId);
                    orderCmd.Parameters.AddWithValue("@cid", customerId);
                    orderCmd.Parameters.AddWithValue("@date", DateTime.Now.Date);

                    orderCmd.ExecuteNonQuery();

                    // STEP 3: Insert into Order_line_t
                    SqlCommand lineCmd = new SqlCommand(
                        "INSERT INTO Order_line_t (Order_Id, Product_Id,
Ordered_Quantity) VALUES (@oid, @pid, @qty)", con);

                    lineCmd.Parameters.AddWithValue("@oid", orderId);
                    lineCmd.Parameters.AddWithValue("@pid", productId);
                    lineCmd.Parameters.AddWithValue("@qty", quantity);

                    lineCmd.ExecuteNonQuery();

                    lblMessage.ForeColor = System.Drawing.Color.Green;
                    lblMessage.Text = "Order placed successfully! Order ID: " +
orderId;
                }
            }
            catch (Exception ex)
            {
                lblMessage.ForeColor = System.Drawing.Color.Red;
                lblMessage.Text = ex.Message;
            }
        }

        protected void btnBack_Click(object sender, EventArgs e)
        {
            Response.Redirect("Default.aspx");
        }
    }
}
```

- iv) Product Catalog Update

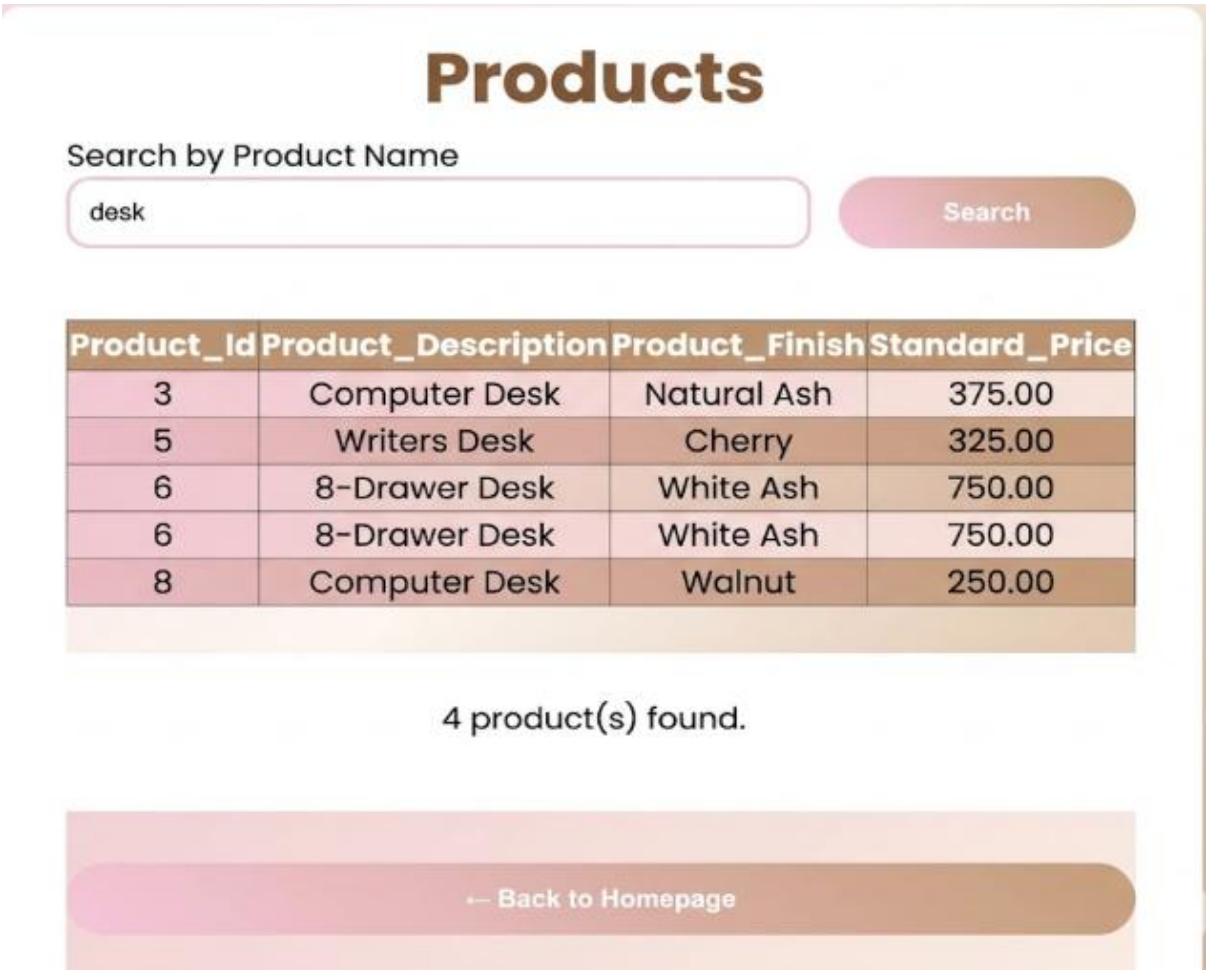
```
using System;
using System.Data.SqlClient;
using System.Configuration;
using System.Web.UI;

namespace IADLAB4
{
    public partial class Update : Page
    {
```

```
        protected void btnUpdate_Click(object sender, EventArgs e)
        {
            string constr =
ConfigurationManager.ConnectionStrings["constr"].ConnectionString;

            using (SqlConnection con = new SqlConnection(constr))
            {
                SqlCommand cmd = new SqlCommand();
                cmd.Connection = con;

                cmd.CommandText = @"UPDATE PRODUCT_t
                                    SET Product_Description = @name,
                                        Standard_Price = @price,
                                        Product_Finish = @finish
                                    WHERE Product_Id = @id";

                cmd.Parameters.AddWithValue("@id", txtProductID.Text);
                cmd.Parameters.AddWithValue("@name", txtDescription.Text);
                cmd.Parameters.AddWithValue("@price", txtNewPrice.Text);
                cmd.Parameters.AddWithValue("@finish", txtProdFinish.Text);

                try
                {
                    con.Open();
                    int rows = cmd.ExecuteNonQuery();

                    if (rows > 0)
                    {
                        lblMessage.ForeColor = System.Drawing.Color.Green;
                        lblMessage.Text = "Product updated!";
                    }
                    else
                    {
                        lblMessage.ForeColor = System.Drawing.Color.Red;
                        lblMessage.Text = "Product ID not found!";
                    }
                }
                catch (Exception ex)
                {
                    lblMessage.ForeColor = System.Drawing.Color.Red;
                    lblMessage.Text = ex.Message;
                }
            }
        }

        protected void btnBack_Click(object sender, EventArgs e)
        {
            Response.Redirect("Default.aspx");
        }
    }
}
```

- v) Payment Provision *(Develop in Visual studio and the host it on your site)*

Problem 4) Implement the search mechanism (functionality) for searching products (furniture products) through the above mentioned Page (ii) as listed in Problem 3. When the page visitor enters a search string in an input control e.g. text box and click a search button, all relevant products must be displayed to the page visitor.

Write the button click handler below. Make it available online.



Problem 5) Develop and execute test cases for Problem 4. Write details of test cases below?

On sheet