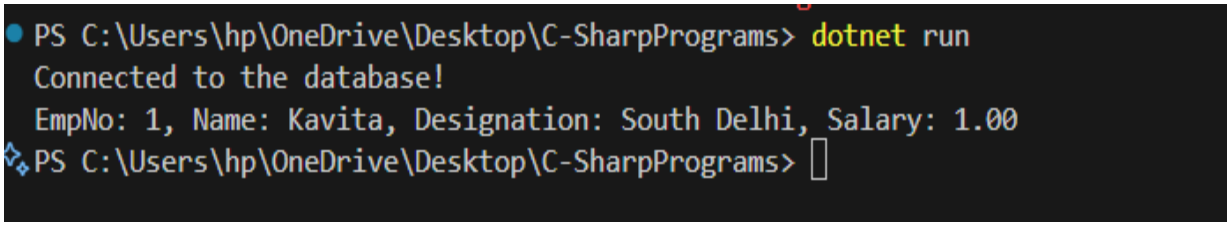
WEB TECHNOLOGY DOTNET ASP AND ADO

1. Program to Show Database Connectivity.

```
using MySql.Data.MySqlClient;

public class DatabaseConnectivity
{
    public static void Main()
    {
        string connectionString =
"server=localhost;user=root;password=root;database=cplus";

        using (MySqlConnection conn = new MySqlConnection(connectionString))
        {
            try
            {
                conn.Open();
                Console.WriteLine("Connected to the database!");

                string query = "SELECT EmpNo, EmpName, EmpDesignation,
EmpSalary FROM Employees";
                MySqlCommand cmd = new MySqlCommand(query, conn);

                using (MySqlDataReader reader = cmd.ExecuteReader())
                {
                    while (reader.Read())
                    {
                        Console.WriteLine($"EmpNo: {reader["EmpNo"]}, Name:
{reader["EmpName"]}, Designation: {reader["EmpDesignation"]}, Salary:
{reader["EmpSalary"]}");
                    }
                }
            }
            catch (Exception ex)
            {
                Console.WriteLine("Error: " + ex.Message);
            }
        }
    }
}
```

Output:


PS C:\Users\hp\OneDrive\Desktop\C-SharpPrograms> dotnet run
Connected to the database!
EmpNo: 1, Name: Kavita, Designation: South Delhi, Salary: 1.00
PS C:\Users\hp\OneDrive\Desktop\C-SharpPrograms>

2. Program to show data Insertion into the database.

Table Objects:

```
namespace CSharpASPandADO.Models
{
    public class Employee
    {
        public int EmpNo { get; set; }
        public string EmpName { get; set; }
        public string EmpDesignation { get; set; }
        public decimal EmpSalary { get; set; }
    }
}
```

Service Layer:

```
using MySql.Data.MySqlClient;
using CSharpASPandADO.Models;

public class EmployeeService
{
    private readonly IConfiguration _configuration;
    private readonly string _connectionString;

    public EmployeeService(IConfiguration configuration)
    {
        _configuration = configuration;
        _connectionString =
_configuration.GetConnectionString("DefaultConnection");
    }

    public void AddEmployee(Employee employee)
    {
        using (MySqlConnection conn = new MySqlConnection(_connectionString))
        {
            string query = "INSERT INTO Employees (EmpNo, EmpName,
EmpDesignation, EmpSalary) VALUES (@EmpNo, @EmpName, @EmpDesignation,
@EmpSalary)";
            MySqlCommand cmd = new MySqlCommand(query, conn);

            cmd.Parameters.AddWithValue("@EmpNo", employee.EmpNo);
            cmd.Parameters.AddWithValue("@EmpName", employee.EmpName);
            cmd.Parameters.AddWithValue("@EmpDesignation",
employee.EmpDesignation);
            cmd.Parameters.AddWithValue("@EmpSalary", employee.EmpSalary);

            conn.Open();
```

```
            cmd.ExecuteNonQuery();
        }
    }
```

Controller Layer:

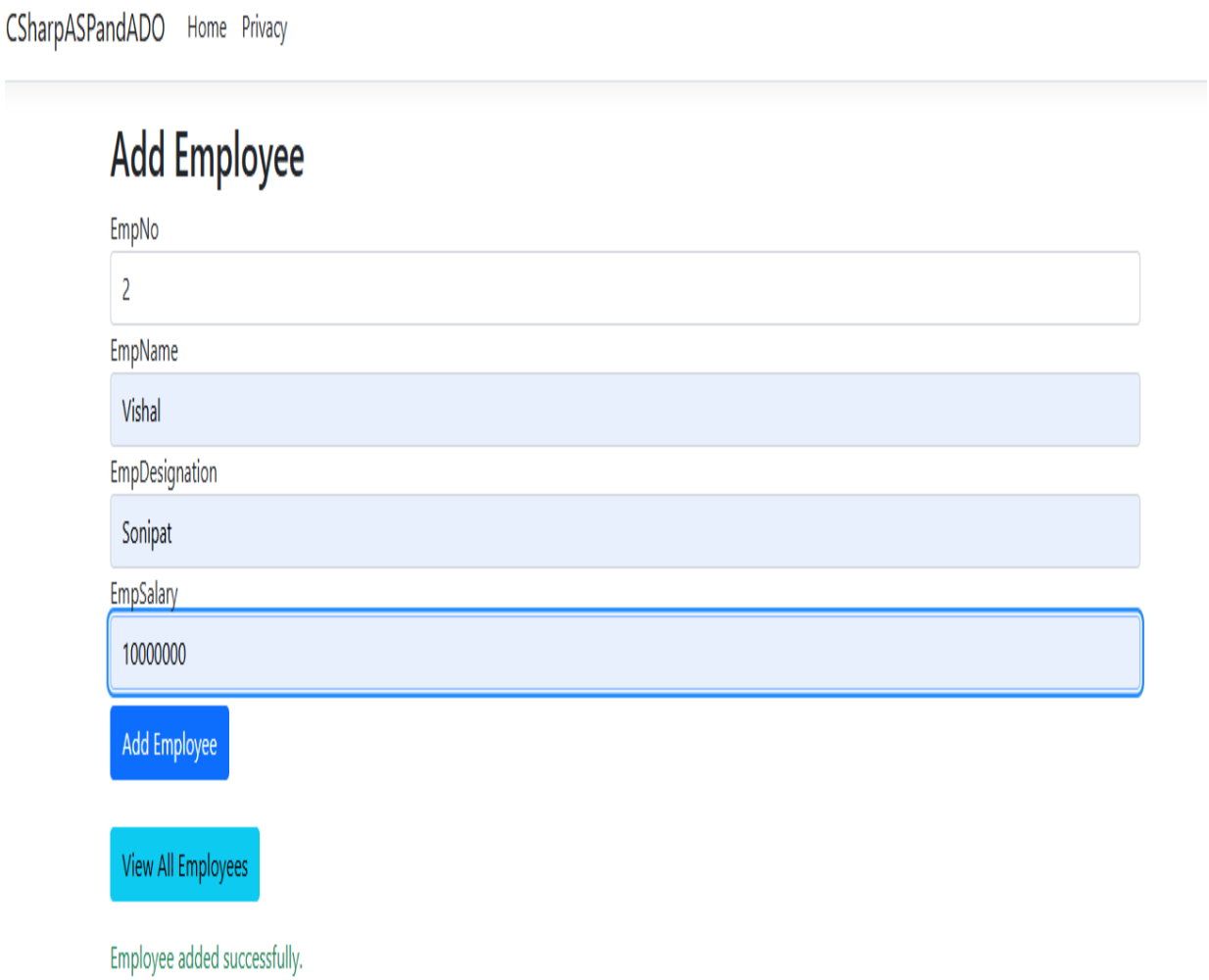
```
using Microsoft.AspNetCore.Mvc;
using CSharpASPandADO.Models;

namespace CSharpASPandADO.Controllers
{
    public class EmployeeController : Controller
    {
        private readonly EmployeeService _employeeService;

        public EmployeeController(EmployeeService employeeService)
        {
            _employeeService = employeeService;
        }

        // GET: Display the employee form
        [HttpGet]
        public IActionResult Index()
        {
            return View();
        }

        // POST: Handle form submission
        [HttpPost]
        public IActionResult Index(Employee employee)
        {
            if (ModelState.IsValid)
            {
                _employeeService.AddEmployee(employee);
                ViewBag.Message = "Employee added successfully.";

                // Clear form inputs after successful submission
                ModelState.Clear();
                return View(); // Stay on the same view to show the message
            }

            return View(employee); // Re-display form with validation errors
        }
```

Index.chtml:

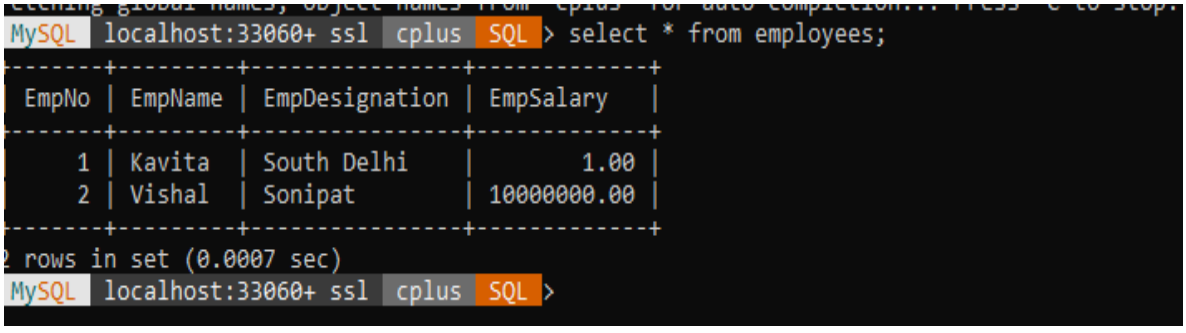
```
@model CSharpASPandADO.Models.Employee

@{
    ViewData["Title"] = "Add Employee";
}

<h2>Add Employee</h2>

<!-- Display validation summary -->
@Html.ValidationSummary(true, "", new { @class = "text-danger" })

<form asp-action="Index" method="post">
    <div>
        <label asp-for="EmpNo"></label>
        <input asp-for="EmpNo" class="form-control" />
        <span asp-validation-for="EmpNo" class="text-danger"></span>
    </div>

    <div>
        <label asp-for="EmpName"></label>
        <input asp-for="EmpName" class="form-control" />
        <span asp-validation-for="EmpName" class="text-danger"></span>
    </div>

    <div>
        <label asp-for="EmpDesignation"></label>
        <input asp-for="EmpDesignation" class="form-control" />
        <span asp-validation-for="EmpDesignation" class="text-danger"></span>
    </div>

    <div>
        <label asp-for="EmpSalary"></label>
        <input asp-for="EmpSalary" class="form-control" />
        <span asp-validation-for="EmpSalary" class="text-danger"></span>
    </div>

    <button type="submit" class="btn btn-primary mt-2">Add Employee</button>
</form>
<br />
<a asp-action="EmployeeInformation" class="btn btn-info">View All
Employees</a>
<!-- Success message -->
@if (ViewBag.Message != null)
{
<p class="text-success mt-3">@ViewBag.Message</p>
}
```

```
@section Scripts {
    @{await Html.RenderPartialAsync("_ValidationScriptsPartial");}
}
```

Output:



Database:



3. Program to show Update feature into the database.

Service Layer Method:

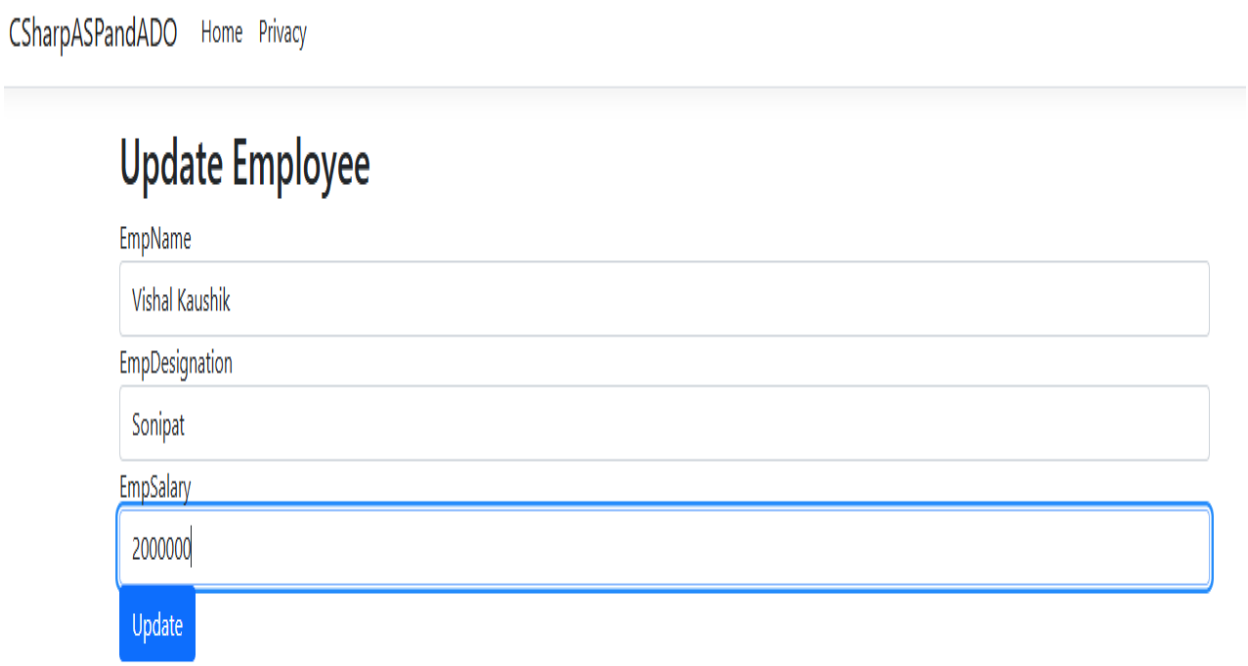
```
    public void UpdateEmployee(Employee employee)
    {
        using (MySqlConnection conn = new MySqlConnection(_connectionString))
        {
            string query = "UPDATE Employees SET EmpName=@EmpName,
EmpDesignation=@EmpDesignation, EmpSalary=@EmpSalary WHERE EmpNo=@EmpNo";
            MySqlCommand cmd = new MySqlCommand(query, conn);
            cmd.Parameters.AddWithValue("@EmpNo", employee.EmpNo);
            cmd.Parameters.AddWithValue("@EmpName", employee.EmpName);
            cmd.Parameters.AddWithValue("@EmpDesignation",
employee.EmpDesignation);
            cmd.Parameters.AddWithValue("@EmpSalary", employee.EmpSalary);

            conn.Open();
            cmd.ExecuteNonQuery();
        }
    }
```

Controller Layer Method:

```
        public IActionResult UpdateEmployee(int id)
        {
            var emp = _employeeService.GetEmployeeById(id);
            return View(emp);
        }

        // POST: Edit employee
        [HttpPost]
        public IActionResult UpdateEmployee(Employee employee)
        {
            _employeeService.UpdateEmployee(employee);
            return RedirectToAction("EmployeeInformation");
        }
```

Output:

UpdateEmployee.cshtml:



Database:

```
MySQL  localhost:33060+ ssl  cplus  SQL > select * from employees;
+-------+----------------+----------------+------------+
| EmpNo | EmpName        | EmpDesignation | EmpSalary  |
+-------+----------------+----------------+------------+
|     1 | Kavita         | South Delhi    |       1.00 |
|     2 | Vishal Kaushik | Sonipat        | 2000000.00 |
+-------+----------------+----------------+------------+
2 rows in set (0.0006 sec)
MySQL  localhost:33060+ ssl  cplus  SQL >
```

4. Program to show Delete feature into the Database.

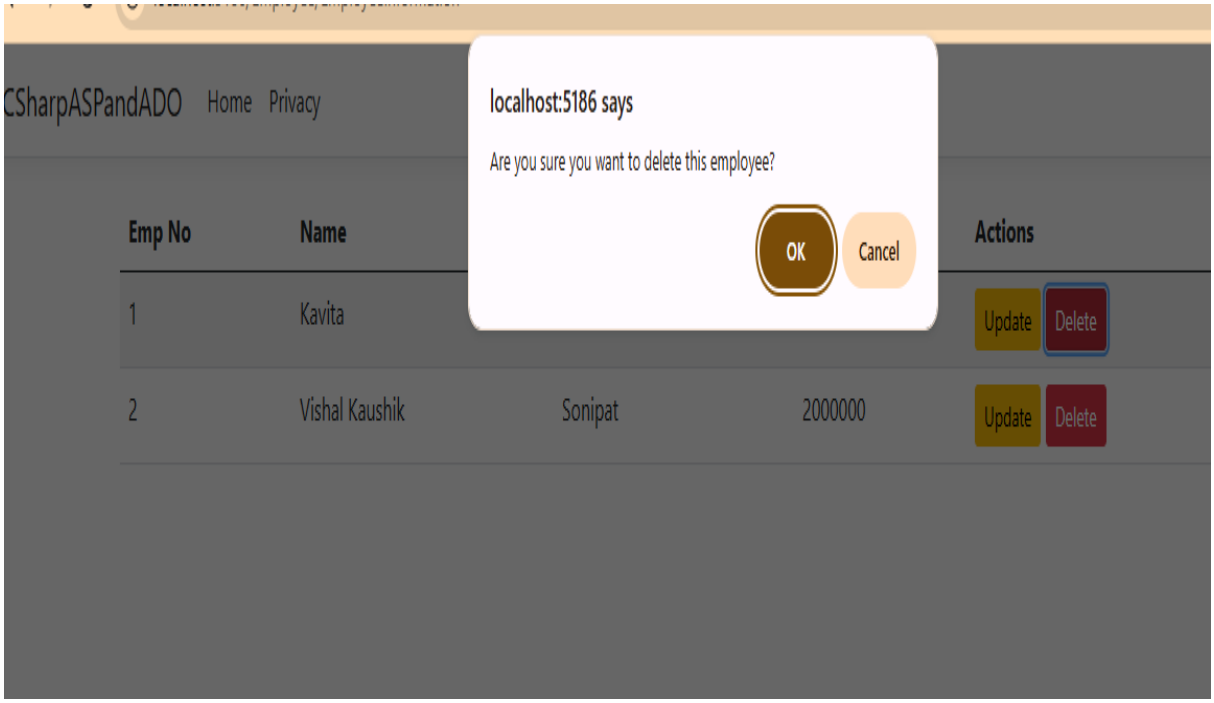
Service Layer Method;

```
    // Delete Employee
    public void DeleteEmployee(int empNo)
    {
        using (MySqlConnection conn = new MySqlConnection(_connectionString))
        {
            string query = "DELETE FROM Employees WHERE EmpNo=@EmpNo";
            MySqlCommand cmd = new MySqlCommand(query, conn);
            cmd.Parameters.AddWithValue("@EmpNo", empNo);

            conn.Open();
            cmd.ExecuteNonQuery();
        }
    }
```

Controller Layer Method:

```
// GET: Delete employee
public IActionResult Delete(int id)
{
    _employeeService.DeleteEmployee(id);
    return RedirectToAction("EmployeeInformation");
}
```

Output:



Database:

```
MySQL  localhost:33060+ ssl  cplus  SQL > select * from employees;
+-------+----------------+----------------+------------+
| EmpNo | EmpName        | EmpDesignation | EmpSalary  |
+-------+----------------+----------------+------------+
|     2 | Vishal Kaushik | Sonipat        | 2000000.00 |
+-------+----------------+----------------+------------+
1 row in set (0.0006 sec)
MySQL  localhost:33060+ ssl  cplus  SQL >
```

5. **Program to show details of all Employee(Select feature) from the database.**

Service Layer Method:

```
public List<Employee> GetAllEmployees()
{
    List<Employee> employeeList = new List<Employee>();

    using (MySqlConnection con = new
MySqlConnection(_configuration.GetConnectionString("DefaultConnection")))
    {
        string query = "SELECT EmpNo, EmpName, EmpDesignation, EmpSalary FROM
Employees";
        MySqlCommand cmd = new MySqlCommand(query, con);
        con.Open();

        MySqlDataReader reader = cmd.ExecuteReader();

        while (reader.Read())
        {
            Employee emp = new Employee
            {
                EmpNo = Convert.ToInt32(reader["EmpNo"]),
                EmpName = reader["EmpName"].ToString(),
                EmpDesignation = reader["EmpDesignation"].ToString(),
                EmpSalary = Convert.ToInt32(reader["EmpSalary"])
            };

            employeeList.Add(emp);
        }

        reader.Close();
    }

    return employeeList;
}
```

Controller Layer Method:

```
public IActionResult EmployeeInformation()
{
    var employees = _employeeService.GetAllEmployees();
    return View(employees);
}
```

Output:

CSharpASPandADO Home Privacy

Emp No	Name	Designation	Salary	Actions
1	Ankur	Sonipat	2222222	Update Delete
2	Vishal Kaushik	Sonipat	2000000	Update Delete
3	Raman	Karnal	20000	Update Delete
4	Ankit	Gurgoan	250000	Update Delete

Database:

```
MySQL  localhost:33060+ ssl  cplus  SQL > select * from employees;
+-------+----------------+----------------+------------+
| EmpNo | EmpName        | EmpDesignation | EmpSalary  |
+-------+----------------+----------------+------------+
|     1 | Ankur          | Sonipat        | 2222222.00 |
|     2 | Vishal Kaushik | Sonipat        | 2000000.00 |
|     3 | Raman          | Karnal         |   20000.00 |
|     4 | Ankit          | Gurgoan        |  250000.00 |
+-------+----------------+----------------+------------+
4 rows in set (0.0006 sec)
MySQL  localhost:33060+ ssl  cplus  SQL > _
```