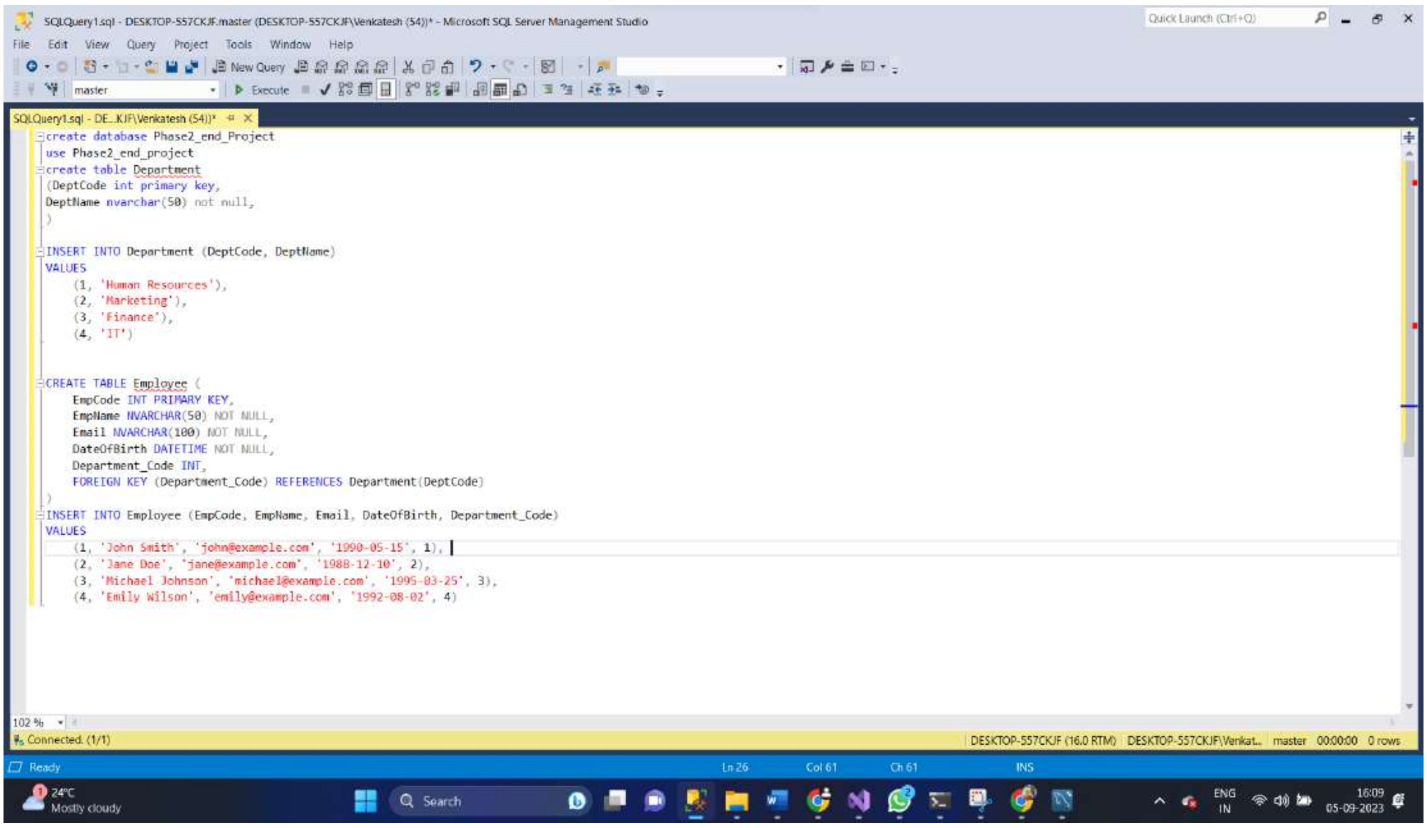
Source Code



```sql
create database Phase2_end_Project
use Phase2_end_project
create table Department
(DeptCode int primary key,
DeptName nvarchar(50) not null,
)

INSERT INTO Department (DeptCode, DeptName)
VALUES
    (1, 'Human Resources'),
    (2, 'Marketing'),
    (3, 'Finance'),
    (4, 'IT')


CREATE TABLE Employee (
    EmpCode INT PRIMARY KEY,
    EmpName NVARCHAR(50) NOT NULL,
    Email NVARCHAR(100) NOT NULL,
    DateOfBirth DATETIME NOT NULL,
    Department_Code INT,
    FOREIGN KEY (Department_Code) REFERENCES Department(DeptCode)
)
INSERT INTO Employee (EmpCode, EmpName, Email, DateOfBirth, Department_Code)
VALUES
    (1, 'John Smith', 'john@example.com', '1990-05-15', 1),
    (2, 'Jane Doe', 'jane@example.com', '1988-12-10', 2),
    (3, 'Michael Johnson', 'michael@example.com', '1995-03-25', 3),
    (4, 'Emily Wilson', 'emily@example.com', '1992-08-02', 4)
```

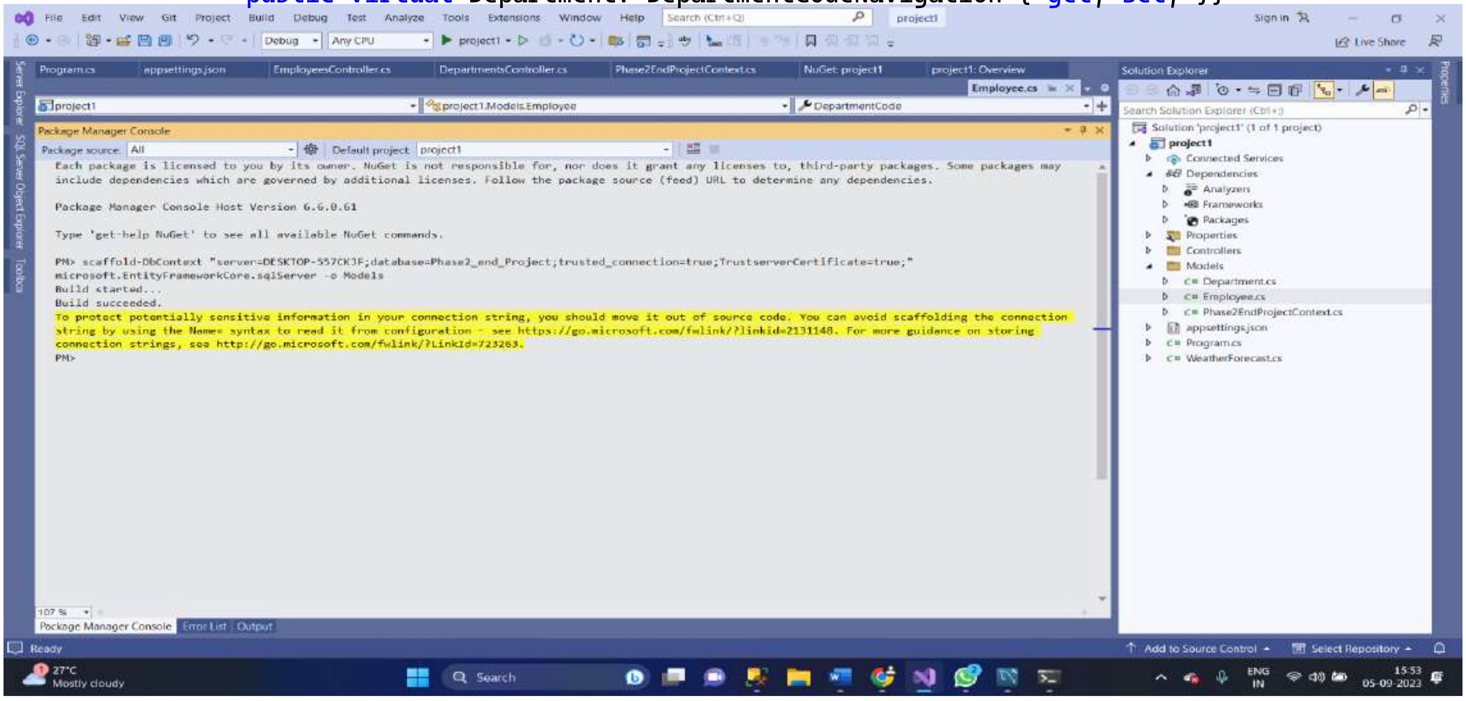
➢ Department Code

```csharp
        using System;
using System.Collections.Generic;

namespace project1.Models;

public partial class Department
{
    public int DeptCode { get; set; }

    public string DeptName { get; set; } = null!;

    public virtual ICollection<Employee> Employees { get; set; } = new
List<Employee>();
}
```

➢ Employee Code

```csharp
          using System;
using System.Collections.Generic;

namespace project1.Models;
public partial class Employee
{
    public int EmpCode { get; set; }

    public string EmpName { get; set; } = null!;

    public string Email { get; set; } = null!;
```

```
        public DateTime DateOfBirth { get; set; }

        public int? DepartmentCode { get; set; }

        public virtual Department? DepartmentCodeNavigation { get; set; }}
```



```
Each package is licensed to you by its owner. NuGet is not responsible for, nor does it grant any licenses to, third-party packages. Some packages may
include dependencies which are governed by additional licenses. Follow the package source (feed) URL to determine any dependencies.

Package Manager Console Host Version 6.6.0.61

Type 'get-help NuGet' to see all available NuGet commands.

PM> scaffold-DbContext "server=DESKTOP-557CKJF;database=Phase2_end_Project;trusted_connection=true;TrustserverCertificate=true;"
microsoft.EntityFrameworkCore.sqlServer -o Models
Build started...
Build succeeded.
To protect potentially sensitive information in your connection string, you should move it out of source code. You can avoid scaffolding the connection
string by using the Name= syntax to read it from configuration - see https://go.microsoft.com/fwlink/?linkid=2131148. For more guidance on storing
connection strings, see http://go.microsoft.com/fwlink/?LinkId=723263.
PM>
```

➢ DepartmentController Code

```
    using System;
using System.Collections.Generic;
using System.Linq;
using System.Threading.Tasks;
using Microsoft.AspNetCore.Http;
using Microsoft.AspNetCore.Mvc;
using Microsoft.EntityFrameworkCore;
using project1.Models;

namespace project1.Controllers
{
    [Route("api/[controller]")]
    [ApiController]
    public class DepartmentsController : ControllerBase
    {
        private readonly Phase2EndProjectContext _context;

        public DepartmentsController(Phase2EndProjectContext context)
        {
            _context = context;
        }

        // GET: api/Departments
        [HttpGet]
        public async Task<ActionResult<IEnumerable<Department>>> GetDepartments()
        {
          if (_context.Departments == null)
          {
              return NotFound();
          }
```

```
            return await _context.Departments.ToListAsync();
        }

        // GET: api/Departments/5
        [HttpGet("{id}")]
        public async Task<ActionResult<Department>> GetDepartment(int id)
        {
          if (_context.Departments == null)
          {
              return NotFound();
          }
            var department = await _context.Departments.FindAsync(id);

            if (department == null)
            {
                return NotFound();
            }

            return department;
        }

        // PUT: api/Departments/5
        // To protect from overposting attacks, see
https://go.microsoft.com/fwlink/?linkid=2123754
        [HttpPut("{id}")]
        public async Task<IActionResult> PutDepartment(int id, Department
department)
        {
            if (id != department.DeptCode)
            {
                return BadRequest();
            }

            _context.Entry(department).State = EntityState.Modified;

            try
            {
                await _context.SaveChangesAsync();
            }
            catch (DbUpdateConcurrencyException)
            {
                if (!DepartmentExists(id))
                {
                    return NotFound();
                }
                else
                {
                    throw;
                }
            }

            return NoContent();
        }

        // POST: api/Departments
        // To protect from overposting attacks, see
https://go.microsoft.com/fwlink/?linkid=2123754
        [HttpPost]
        public async Task<ActionResult<Department>> PostDepartment(Department
department)
        {
          if (_context.Departments == null)
          {
              return Problem("Entity set 'Phase2EndProjectContext.Departments'
is null.");
         }
            _context.Departments.Add(department);
            try
            {
                await _context.SaveChangesAsync();
            }
            catch (DbUpdateException)
            {
                if (DepartmentExists(department.DeptCode))
                {
                    return Conflict();
                }
                else
                {
                    throw;
                }
            }

            return CreatedAtAction("GetDepartment", new { id =
department.DeptCode }, department);
        }

        // DELETE: api/Departments/5
        [HttpDelete("{id}")]
        public async Task<IActionResult> DeleteDepartment(int id)
        {
            if (_context.Departments == null)
            {
                return NotFound();
            }
            var department = await _context.Departments.FindAsync(id);
            if (department == null)
            {
                return NotFound();
            }

            _context.Departments.Remove(department);
            await _context.SaveChangesAsync();

            return NoContent();
        }

        private bool DepartmentExists(int id)
        {
            return (_context.Departments?.Any(e => e.DeptCode ==
id)).GetValueOrDefault();
        }
    }
}
```

➢ EmployeeController Code

```
______using System;
using System.Collections.Generic;
using System.Linq;
using System.Threading.Tasks;
using Microsoft.AspNetCore.Http;
using Microsoft.AspNetCore.Mvc;
using Microsoft.EntityFrameworkCore;
using project1.Models;
```

```
namespace project1.Controllers
{
    [Route("api/[controller]")]
    [ApiController]
    public class EmployeesController : ControllerBase
    {
        private readonly Phase2EndProjectContext _context;

        public EmployeesController(Phase2EndProjectContext context)
        {
            _context = context;
        }

        // GET: api/Employees
        [HttpGet]
        public async Task<ActionResult<IEnumerable<Employee>>> GetEmployees()
        {
          if (_context.Employees == null)
          {
              return NotFound();
          }
            return await _context.Employees.ToListAsync();
        }

        // GET: api/Employees/5
        [HttpGet("{id}")]
        public async Task<ActionResult<Employee>> GetEmployee(int id)
        {
          if (_context.Employees == null)
          {
              return NotFound();
          }
            var employee = await _context.Employees.FindAsync(id);

            if (employee == null)
            {
                return NotFound();
            }

            return employee;
        }

        // PUT: api/Employees/5
        // To protect from overposting attacks, see
https://go.microsoft.com/fwlink/?linkid=2123754
        [HttpPut("{id}")]
        public async Task<IActionResult> PutEmployee(int id, Employee employee)
        {
            if (id != employee.EmpCode)
            {
                return BadRequest();
            }

            _context.Entry(employee).State = EntityState.Modified;

            try
            {
                await _context.SaveChangesAsync();
            }
            catch (DbUpdateConcurrencyException)
            {
                if (!EmployeeExists(id))
                {
                    return NotFound();
                }
                else
                {
                    throw;
                }
            }

            return NoContent();
        }

        // POST: api/Employees
        // To protect from overposting attacks, see
https://go.microsoft.com/fwlink/?linkid=2123754
        [HttpPost]
        public async Task<ActionResult<Employee>> PostEmployee(Employee employee)
        {
          if (_context.Employees == null)
          {
              return Problem("Entity set 'Phase2EndProjectContext.Employees'  is
null.");
          }
            _context.Employees.Add(employee);
            try
            {
                await _context.SaveChangesAsync();
            }
            catch (DbUpdateException)
            {
                if (EmployeeExists(employee.EmpCode))
                {
                    return Conflict();
                }
                else
                {
                    throw;
                }
            }

            return CreatedAtAction("GetEmployee", new { id = employee.EmpCode },
employee);
        }

        // DELETE: api/Employees/5
        [HttpDelete("{id}")]
        public async Task<IActionResult> DeleteEmployee(int id)
        {
            if (_context.Employees == null)
            {
                return NotFound();
            }
            var employee = await _context.Employees.FindAsync(id);
            if (employee == null)
            {
                return NotFound();
            }

            _context.Employees.Remove(employee);
            await _context.SaveChangesAsync();

            return NoContent();
        }
```

```
            private bool EmployeeExists(int id)
            {
                return (_context.Employees?.Any(e => e.EmpCode ==
   id)).GetValueOrDefault();
            }
        }
}
```