EF Core using Code first approach using a Console application

Objectives:

1. Why Entity framework core?
    - Development approaches
2. Perform any 2 CRUD operation EF core for Database first approach using a Console application
    - NuGet package inclusion: Microsoft.EntityFrameworkCore.SqlServer, Microsoft.EntityFrameworkCore, Microsoft.EntityFrameworkCore.Tools, Use it in NuGet package manager console to the scaffold, Add & Save data

The EXPERIENCEPOST web site maintenance team wants their data to be saved in the database and have the flexibility to use the in-memory data if in case the database server will be down.

Now the EXPERIENCEPOST web site maintenance team wants their database to stop for **log shipping,** for that purpose the team wants the database to stop for time being. That for reason team wants the repository to switch from SQL REPOSITORY to IN MEMORY REPOSITORY.

The technical details are as follows

Develop the skill post website www.EXPERIENCEPOST.com MVC web project with Entity Framework **Code First approach Repository Pattern** details are as follows.

1. Create model Classes

Create classes for Customer and Address under the Models folder, these classes are used as entities and entities set. These classes will have a mapping with a database because we are using the code-first approach and these classes will create a table in a database using the DbContext class of Entity Framework.

Employee: Class

Employee ID (PRIMARY KEY): Integer
First Name: String
Last Name: String
Password: String
Land Line: String
Cell Number: String
Email: String

Skill: Class

Skill Id: (PRIMARY KEY): Integer
Employee ID (FOREIGN KEY): Integer
Skill Name: String
Role: String
Experience In Years: Integer
PostalCode: String

Employee: virtual Customer

IEmployeeRepository: Interface

ClsEmployee **GetEmployee** (ClsEmployee employee);
IEnumerable<ClsEmployee> **GetAllEmployee** ();
ClsEmployee **Add** (ClsEmployee employee);
ClsEmployee **GetEmployeeByID** (int id);
ClsEmployee **Update** (ClsEmployee employeeChanges);
ClsEmployee **Delete** (int id);
ClsSkill **GetSkill** (int Id);
IEnumerable<ClsSkill> **GetAllSkill** (int Id);
void **AddSkill** (ClsSkill skill);
Void **DeleteSkill** (int id);

AppDBContext: DbContext Class

```
public AppDBContext (DbContextOptions<AppDBContext> options) : base(options)
{
}
public DbSet<Employee> Employees { get; set; }
public DbSet<Skill> Skills { get; set; }
```

Hint: Use **DataAnnotations** namespace to define Primary Key, Required Field, Email Address validation, Foreign Key, Display Name.

2. Add InMemoryRepository: Class

Implement interface: IEmployeeRepository

Hint: Reference code

```
public class InMemoryRepository : IEmployeeRepository
    {
        private static List<Employee> _employeeList = new
List<Employee>()
            {
              new
Employee(){EmpID=1,FirstName="Aaron",LastName="Hawkins",Password=
"arron@123",CellNumber="(660) 663-
4518",Email="aron.hawkins@aol.com" },
              new
Employee(){EmpID=2,FirstName="Hedy",LastName="Greene",Password="h
edy@123",CellNumber="(608) 265-2215",Email="hedy.greene@aol.com"
},
```

```
                new
Employee(){EmpID=3,FirstName="Melvin",LastName="Porter",Password=
"melvin@123",CellNumber="(959) 119-
8364",Email="melvin.porter@aol.com"}
            };

        private static List<Skill> _skillList = new List<Skill>()
            {
            new
Skill(){SkillId=1,EmployeeID=1,SkillName="Microsoft Office
Suite",Role="Business Analyst",ExperienceInYears=2},
            new
Skill(){SkillId=2,EmployeeID=1,SkillName="Testing",Role="Develope
r",ExperienceInYears=3},
            new
Skill(){SkillId=3,EmployeeID=1,SkillName="Stakeholder
Management",Role="Project Lead",ExperienceInYears=4}
           };


        public ClsEmployee Add(ClsEmployee employee)
        {
            if (_employeeList.Count == 0)
            {
                employee.EmpID = 1;
            }
            else
            {
            employee.EmpID = _employeeList.Max(e => e.EmpID) + 1;

            }
            _employeeList.Add(employee);
            return employee;
           }

   }
```

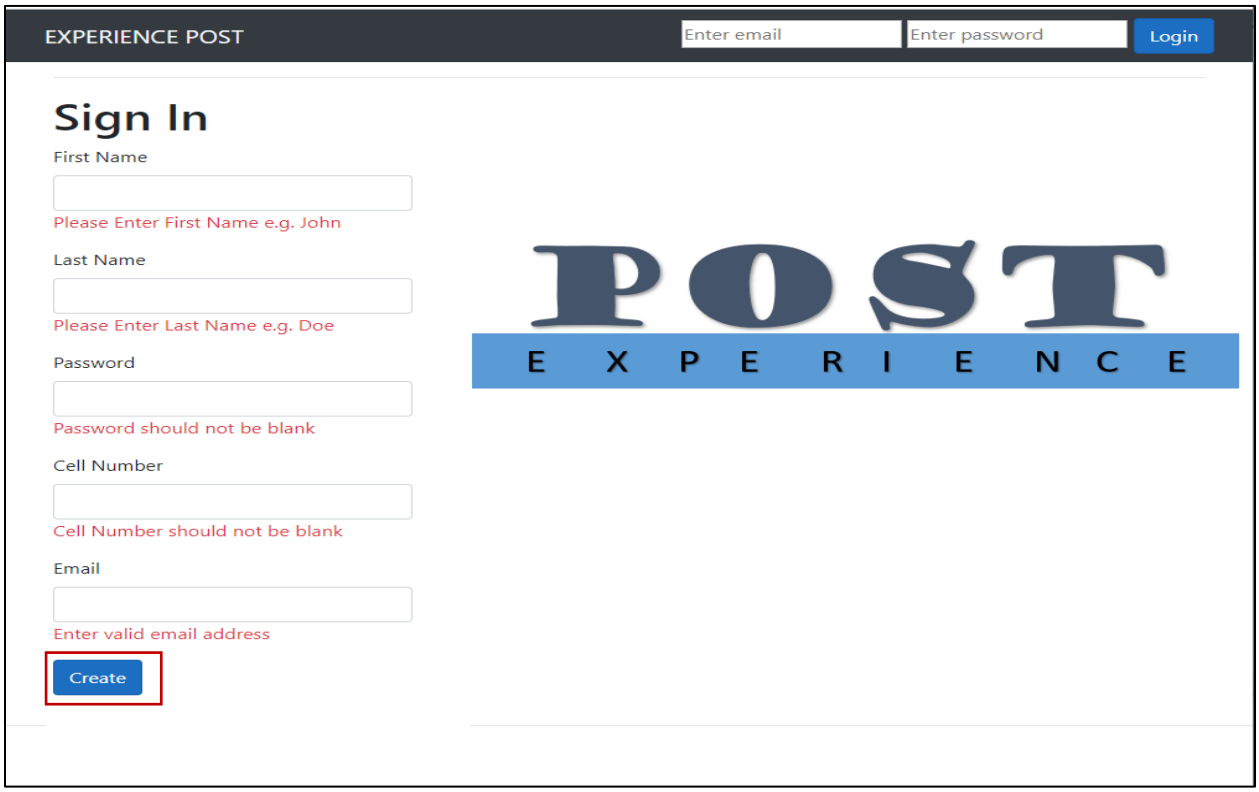
3. **Make the changes in the Startup.cs code method `ConfigureServices`** Reference code is as follows

```
public void ConfigureServices(IServiceCollection services)
 {
    services.AddDbContextPool<AppDBContext>(
            options =>
options.UseSqlServer(_config.GetConnectionString("EmployeeDBConnection")));
    services.AddMvc().AddXmlDataContractSerializerFormatters();
    //Services.AddScoped<IEmployeeRepository,SQLEmployeeRepository>();
    services.AddTransient<IEmployeeRepository, InMemoryRepository>();

    services.AddControllersWithViews();
 }
```

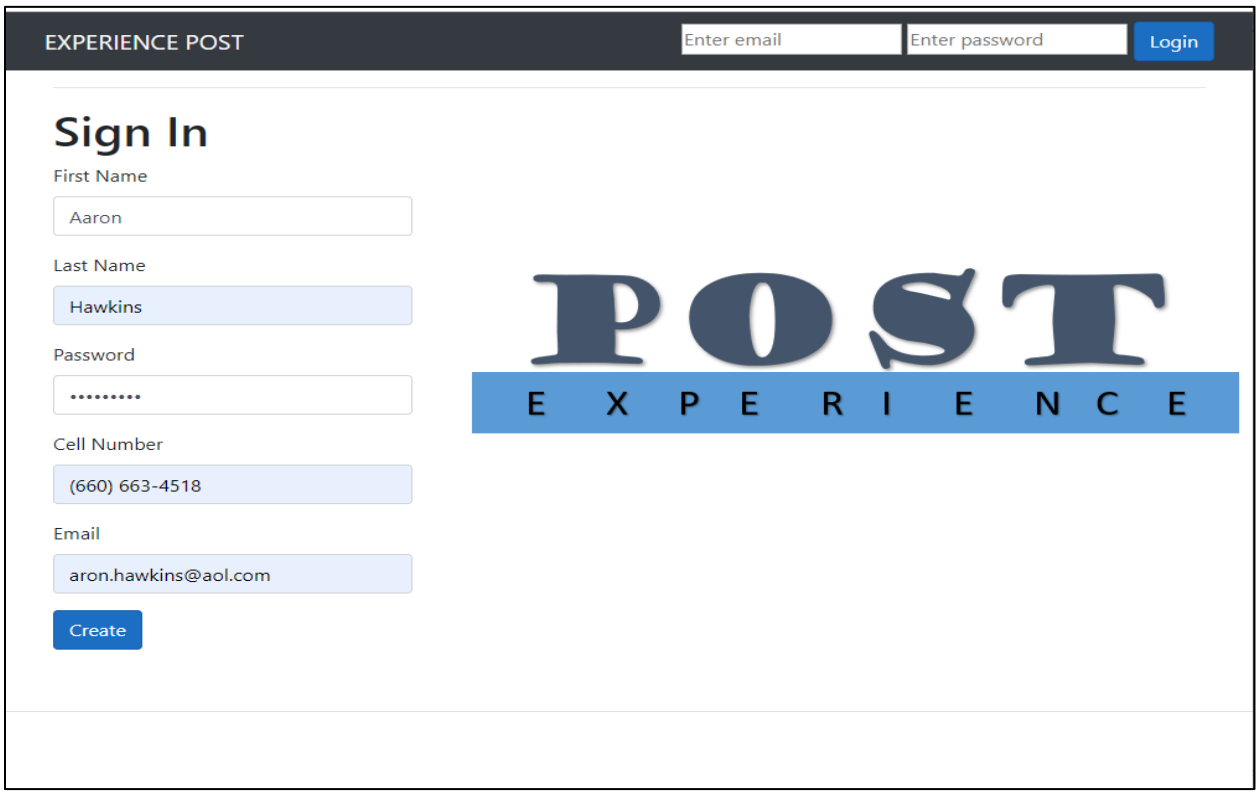
4. Add Controller **ExperiencePostController** with following reference code

```
public class ExperiencePostController: Controller
  {
private readonly IEmployeeRepository _employeeRepository;

public ExperiencePostController (IEmployeeRepository
employeeRepository)
{
    _employeeRepository = employeeRepository;
}
public ActionResult Index()
{
    return View();
}

[HttpGet]
 public ActionResult AddSkill(int id)
 {
     Skill skill = new Skill();
     skill.EmployeeID = id;

     return View(skill);

 }

}
```

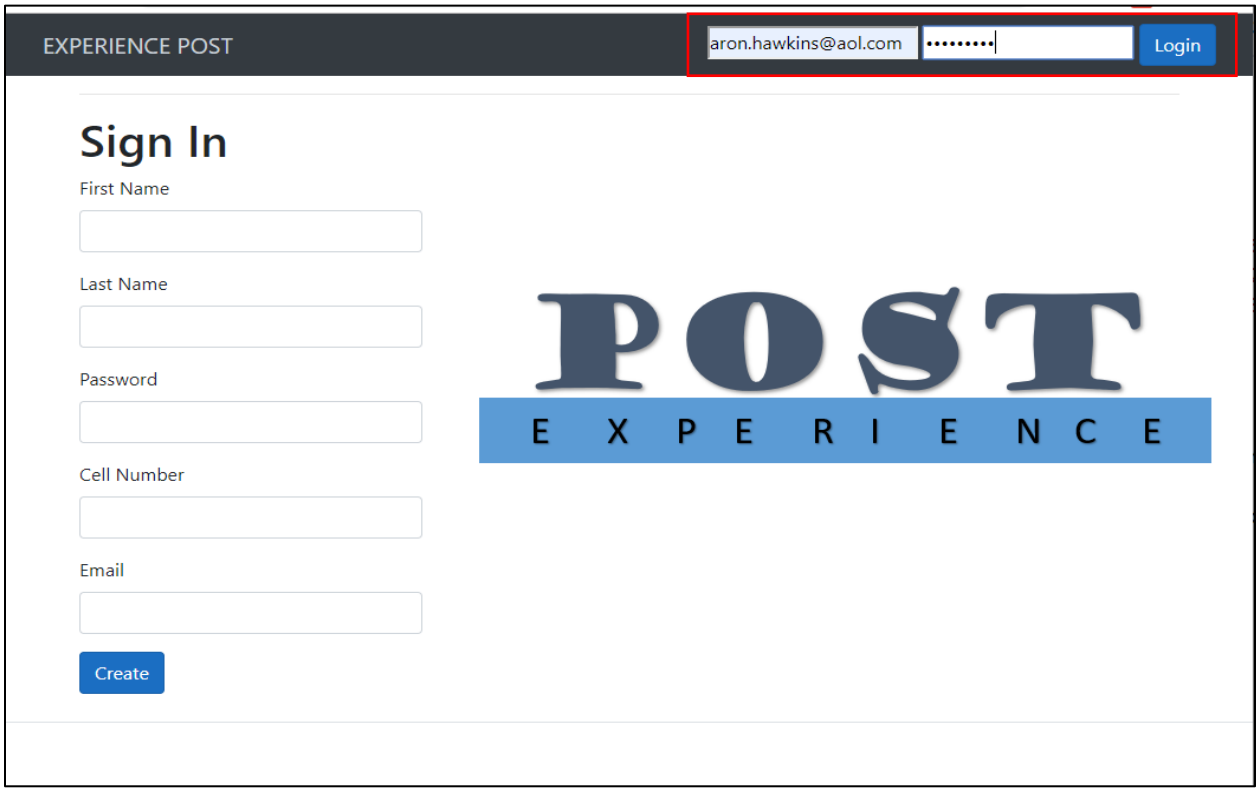
5. Add view SignIn and registered the Employee.



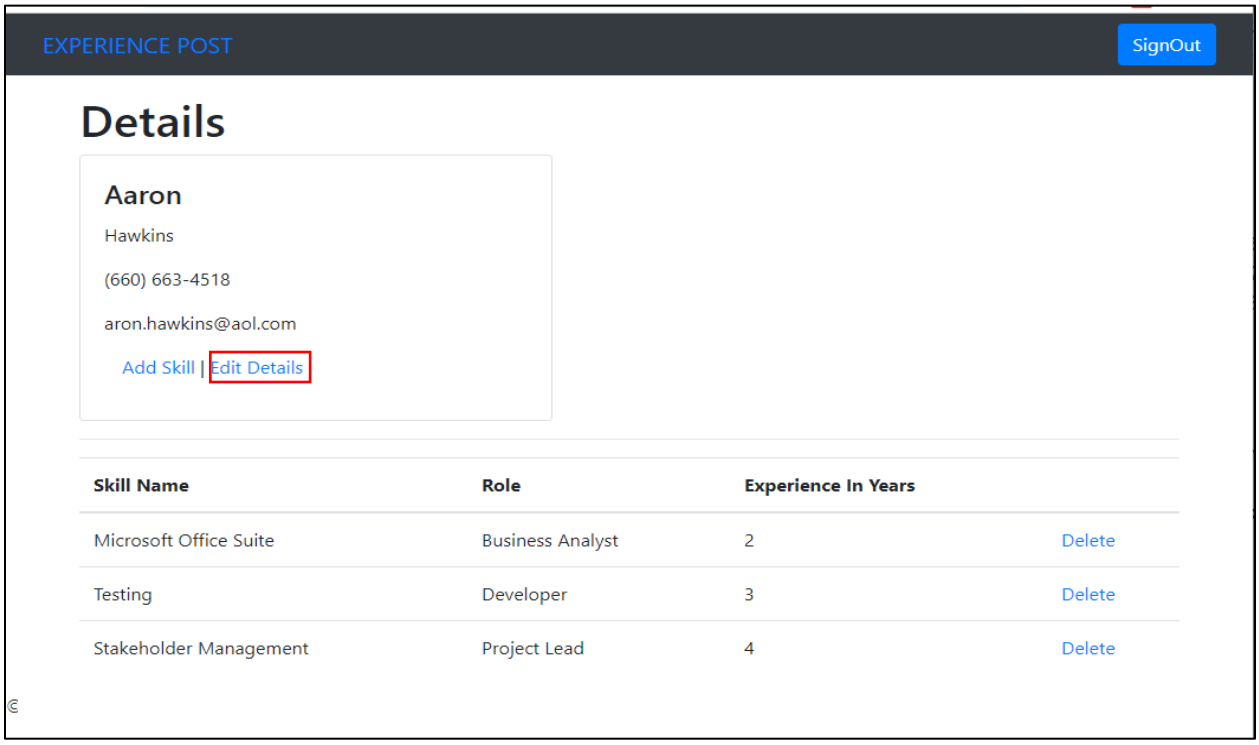
6. After enter details employee has to click on the create button and get registered on the website.



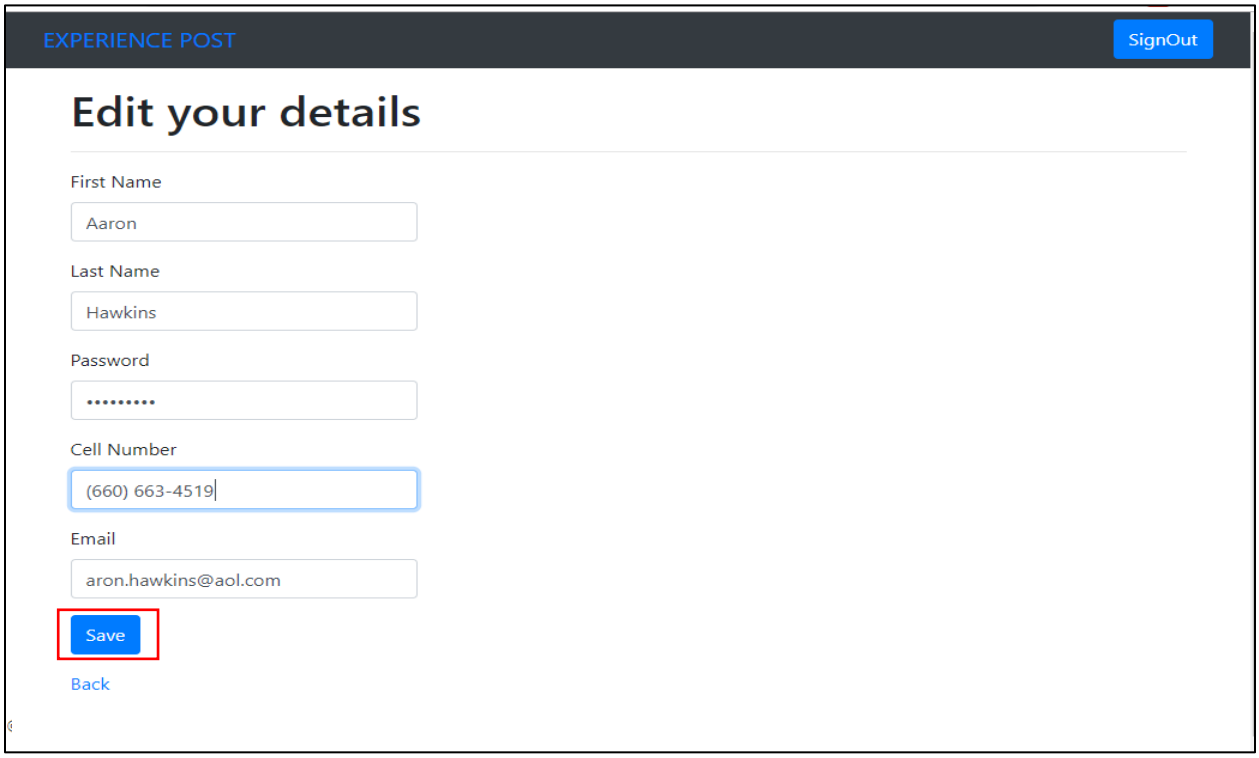
7. After registration Employee has to provide credentials by the time of login.



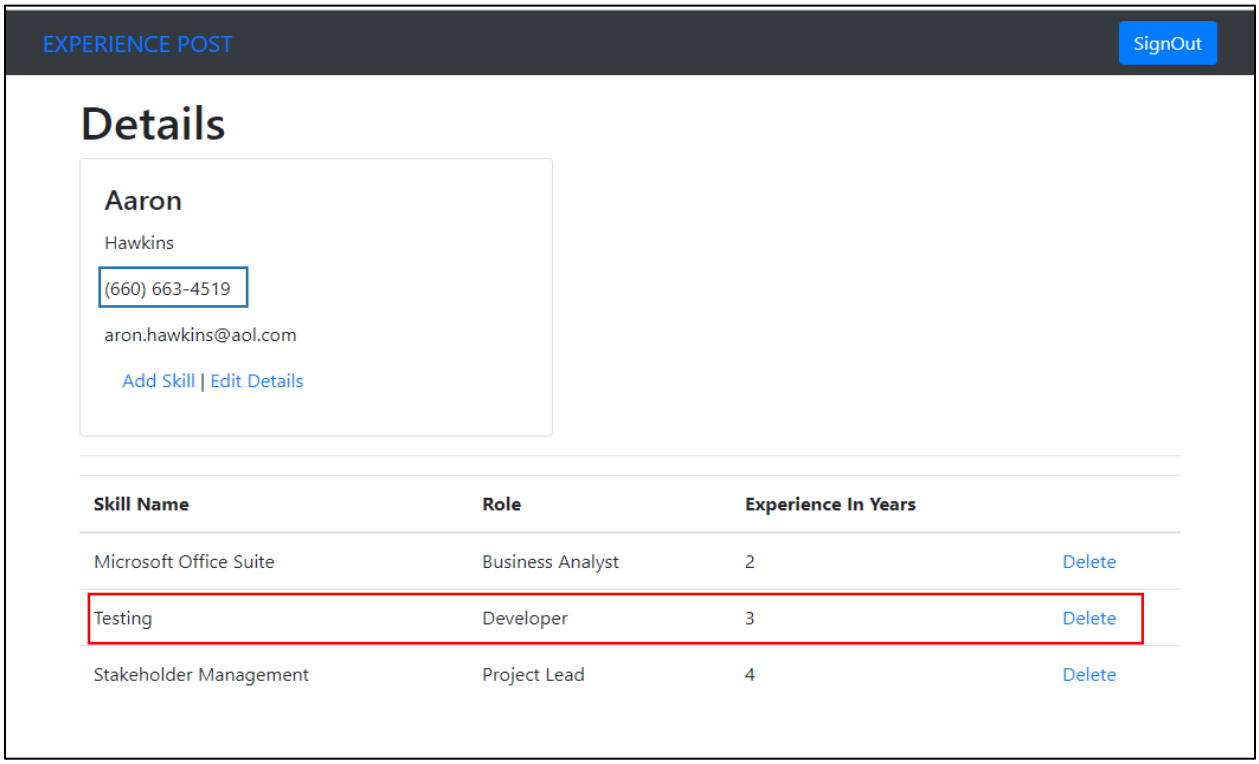
8. After login, the employee will switch to Home view / Details, where employee details will be flashes along with their experiences.



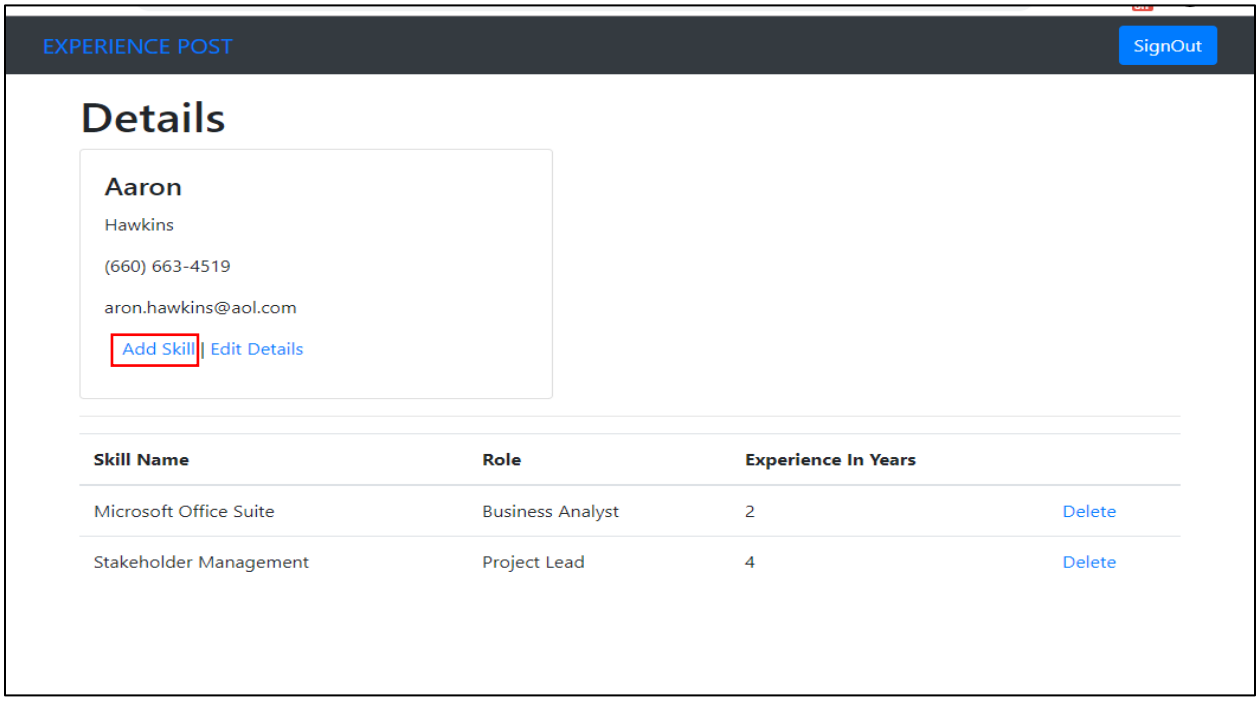
9. When the Employee will click on the edit details the view will switch to Edit Employee details view where Employee will allow to amendment in their details.



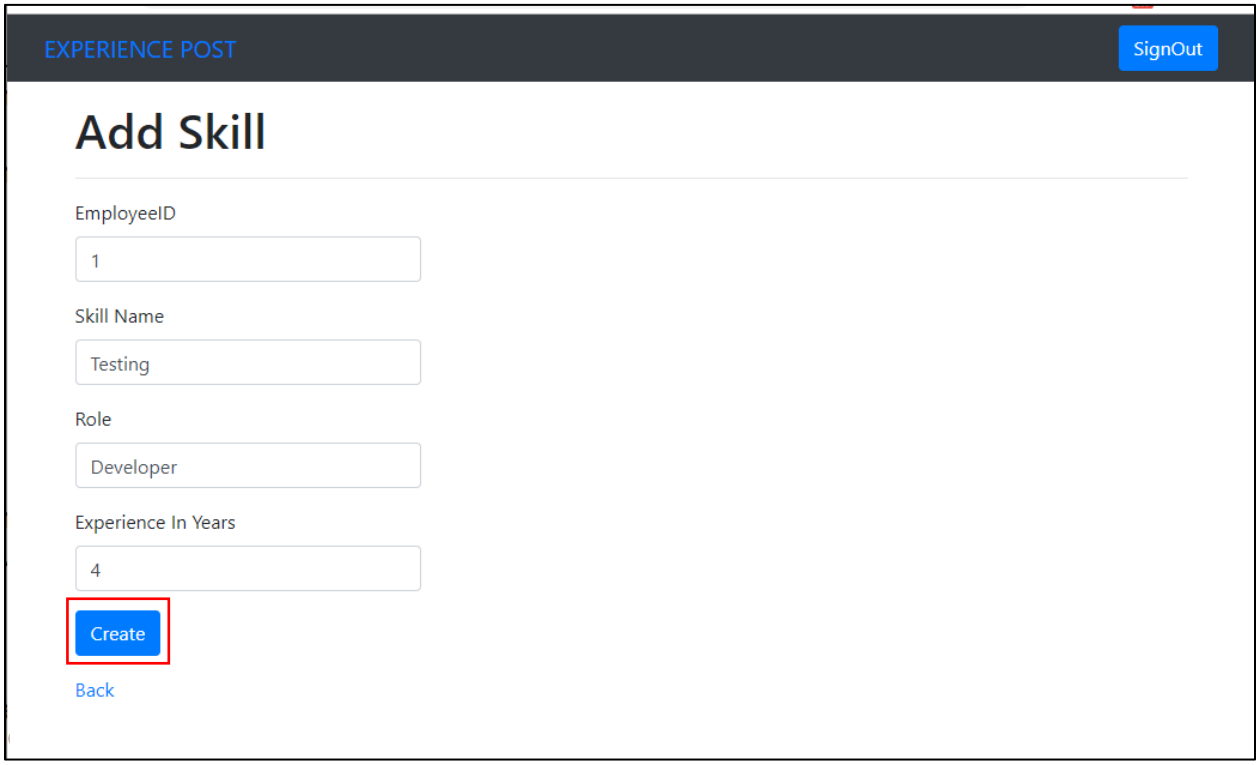
10. Similarly, when the employee will click on the delete skill, it will delete the employee skill from the repository.

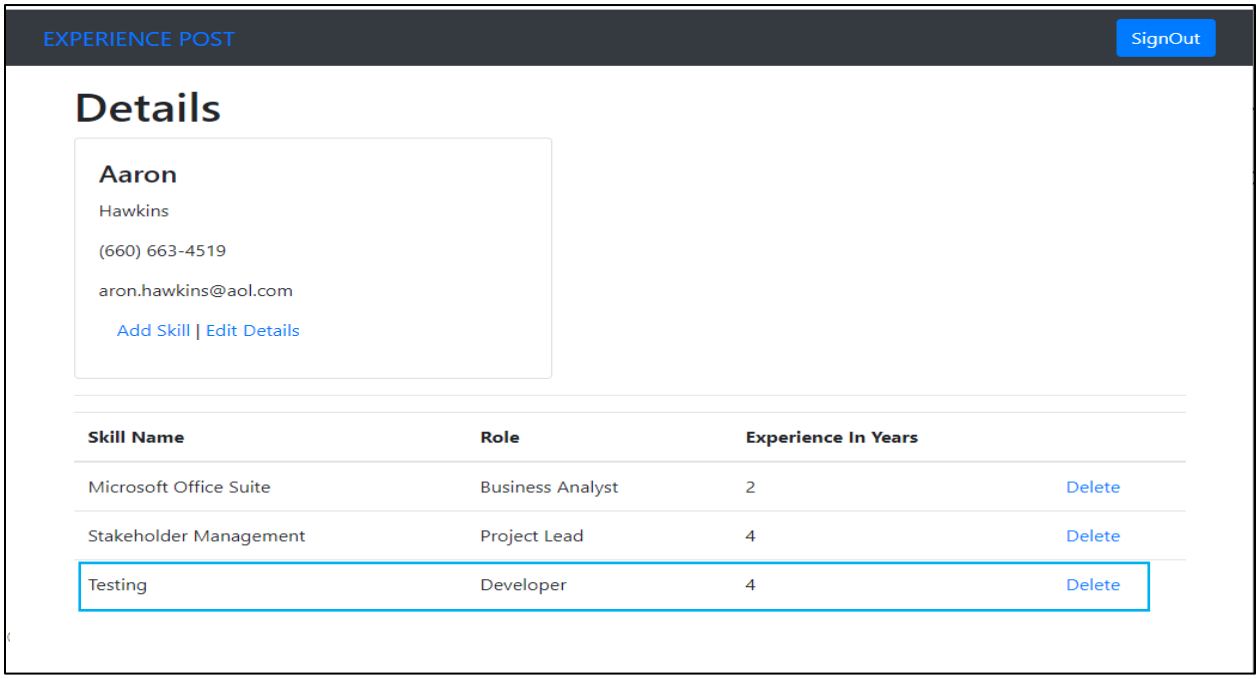


11. When Employee will click on the Add Skills link, the view will switch to add skill view. Where Employee has to input skill details.



12. After providing skill details, the employee has to click on the create button and skill details were added to the employee skill details and the view will switch back to the details view of the employee.





13. When the Employee will click on the Sign-out, the view will switch back to the login view.