**You may use your own dev environment installed with VS2019**

**Tech Stack**

ASP .NET Core (3.1) – Web API Project

EF Core 3.1

Any SQL Database

Additional tools, packages and libraries to be added as per focus areas by the candidate.

**Persistence** (Employee and Department objects)–

-          Employee Object should have the following:

o   employee id, first name, last name, email id, department (FK to department table), manager id (self-referential integrity to employee id)

-          Department Object should have the following:

o   department id, department name

Candidate may choose to add additional columns, if required

**Use case – Scope (Public APIs)**

Employee Register

 Use asynchronous programming wherever possible e.g. DB calls, calling send email.

              - Create Employee

-          Add employee to DB with unique id

-          Send welcome mail to the created employee (dummy command for sending eMail is OK)

              - Modify Employee

-          Update employee based on the employee id

              - Delete Employee

-          Delete employee based on the employee id

                             -      Send eMail notification to deleted employee

              - Get Employee Status

-          Return employee status based on the employee id

o   Status should be “Associate” when no other employee is reporting to this employee

o   Status should be “Manager” when one or more employees are reporting to this employee

o   Status should be “Head” when one or more managers are reporting to this employee

The above logic can be completed to cover all the 3 cases, try to use LINQ

              - List All Employees

-          Get all the employees

-          The list should be sorted based on First Name

              - List Employees with Filter

-          Get the list of employees based on the below filter criteria

o   Employee id AND

o   Employee Department AND

o   Employee First Name AND

o   Employee Last Name

o   Minimum one of the above field is mandatory for the filter criteria

-          Sort the list based on First Name

Consider the above filters from practical approach and refactor the code accordingly. Consider this as an advance search function

**Domain Validation Check**

Domain validation check for the following

a.       Required validation for FirstName, Last Name, Email id and Department

o   Manager id can be null only for one record. This validation is missing, please include it

b.       Validation for email id format

**Focus Areas for Assessment**

**Mandatory:**

·       ASP .NET WEB API Project Structure

·       Configuration

·       API Documentation

·       Modular and Loosely coupled

·       Performance

·       Exception Handling

·       Logging

·       API Testing Tools Try to enable swagger and use it for testing

·       Relevant Design Patterns and Best Practices

**Optional:**

·       Unit testing xUnit or Moq

Input payload validation can be done and send validation messages via a middleware. Please leverage fluent validation package.

Object to object mapping can be simplified using object mapper libraries. Try to use Auto mapper package.

Feel free to use appropriate folder structure