.NET Core

Sprint-1

Faculty Information System

Document Revision History

Date	Revision No.	Author	Summary of Changes

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INTRODUCTION

This document outlines a project for the .NET Line of Technology (LOT). The project is to develop Faculty Information System. This document contains the requirements, work flow of the system and gives guidelines on how to build the functionality gradually in each of the course modules of the .NET LOT.

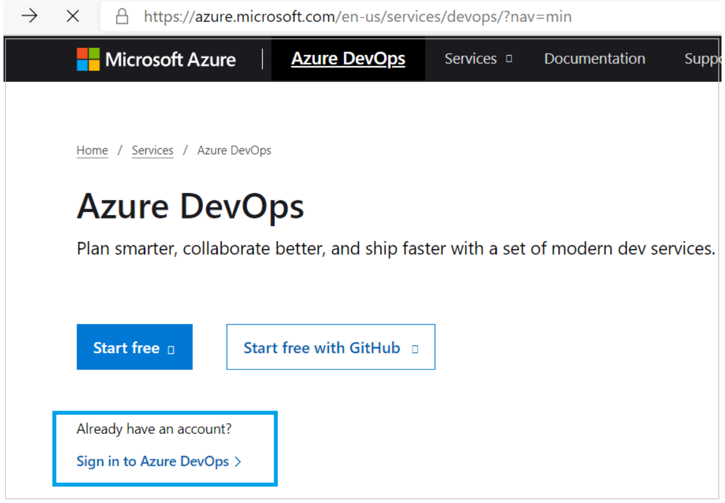
SETUP CHECKLIST

Minimum System Requirements

- Intel Pentium 4 and Windows 2010
- Memory 4 GB
- Internet Explorer 11.0 or higher / Chrome
- SQL Server 2014 or 2016 client and access to SQL Server 2014 or 2016 server
- Visual Studio 2019
- Git

INSTRUCTIONS

- The code modules in the mini project should follow all the coding standards.
- Sign in to Azure DevOps (link - https://azure.microsoft.com/en-us/services/devops/?nav=min)



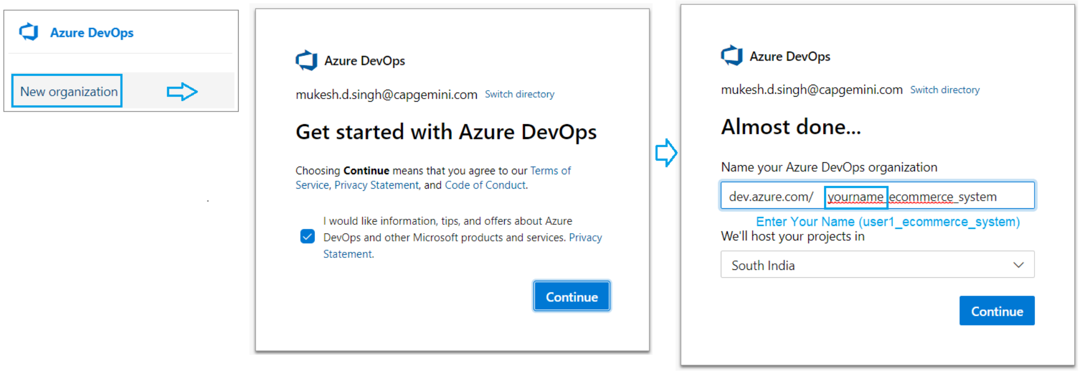
Azure DevOps

Plan smarter, collaborate better, and ship faster with a set of modern dev services.

Already have an account?

- After creating account, login to https://dev.azure.com/

Note: You can select organization name and project name according to your choice and availability.



mukesh.d.singh@capgemini.com

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Almost done...

Name your Azure DevOps organization

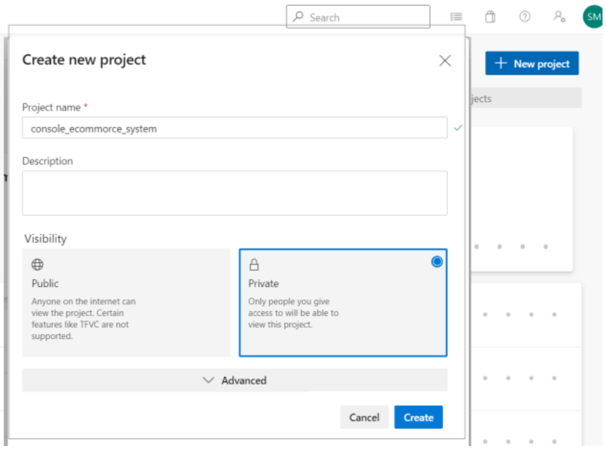
dev.azure.com/ yourname ecommerce_system

Enter Your Name (user1_ecommerce_system)

We'll host your projects in

South India

- Create New Project. Give a name according to your project. (Here, just for the sake of a demo the name - ecommerece is given)



Create new project

Project name *

console_ecommorce_system

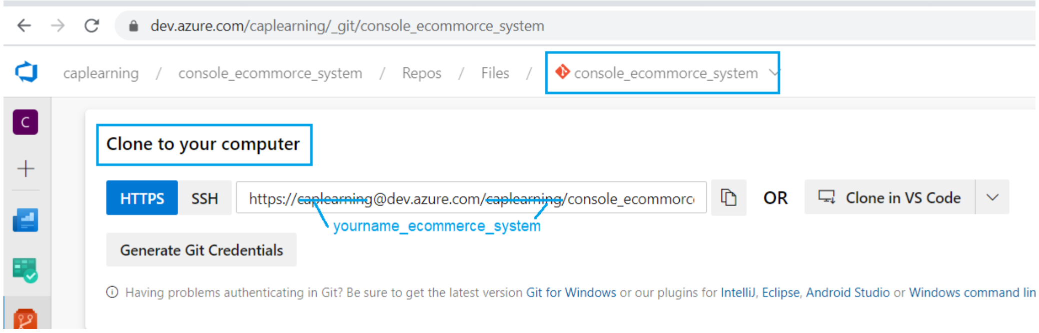
Description

Visibility

○ Public
Anyone on the internet can view the project. Certain features like TFVC are not supported.

● Private
Only people you give access to will be able to view this project.

- Clone the repository



dev.azure.com/caplearning/_git/console_ecommorce_system

caplearning / console_ecommorce_system / Repos / Files / console_ecommorce_system

Clone to your computer

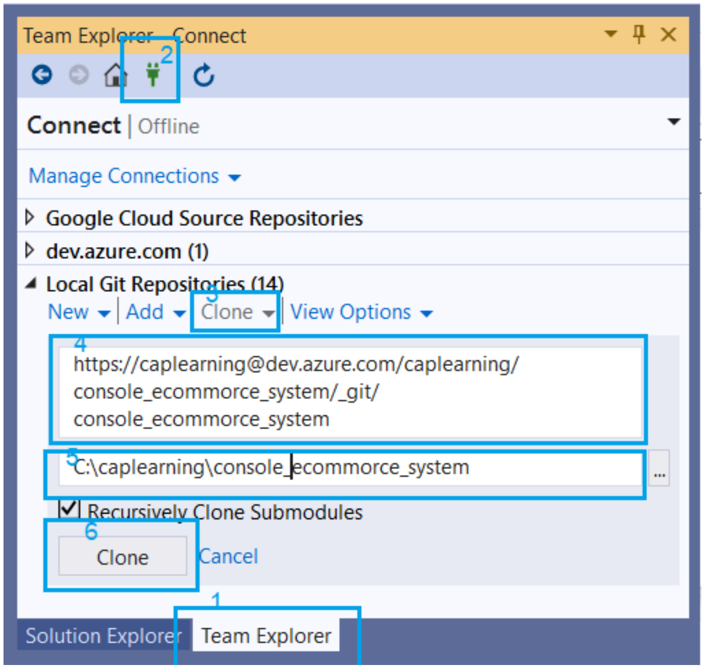
https://~~caplearning~~@dev.azure.com/~~caplearning~~/console_ecommorc

yourname_ecommerce_system

Having problems authenticating in Git? Be sure to get the latest version Git for Windows or our plugins for IntelliJ, Eclipse, Android Studio or Windows command lin

Copy the clone URL
Click on Initialize button at the bottom of screen

- Clone in Visual Studio 2019



Team Explorer - Connect

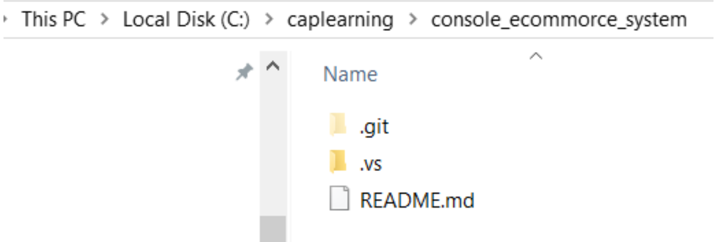
Connect | Offline

https://caplearning@dev.azure.com/caplearning/console_ecommorce_system/_git/console_ecommorce_system

C:\caplearning\console_ecommorce_system

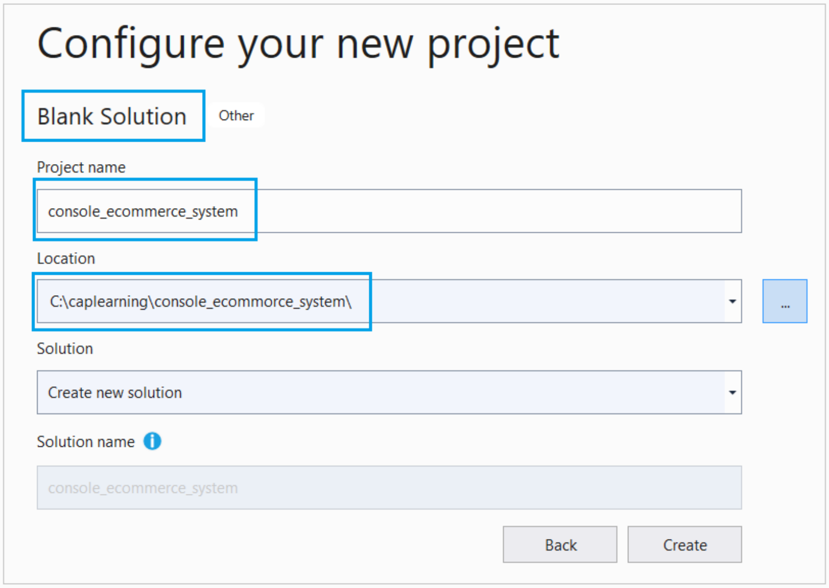
☑ Recursively Clone Submodules

After Clone, below folders get created in your local machine



This PC > Local Disk (C:) > caplearning > console_ecommorce_system

- Create New Blank Solution at your above local machine folder



Configure your new project

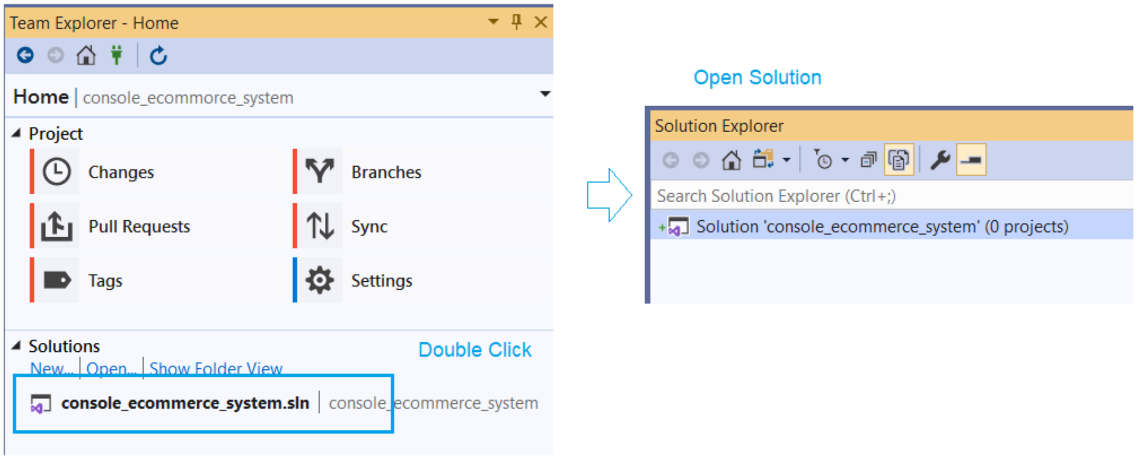
Blank Solution | Other

Project name: console_ecommerce_system

Location: C:\caplearning\console_ecommerce_system\

Solution: Create new solution

Solution name: console_ecommerce_system



Team Explorer - Home

Home | console_ecommorce_system

Project
Changes
Branches
Pull Requests
Sync
Tags
Settings
Solutions
New... | Open... | Show Folder View

console_ecommerce_system.sln | console_ecommerce_system

Double Click

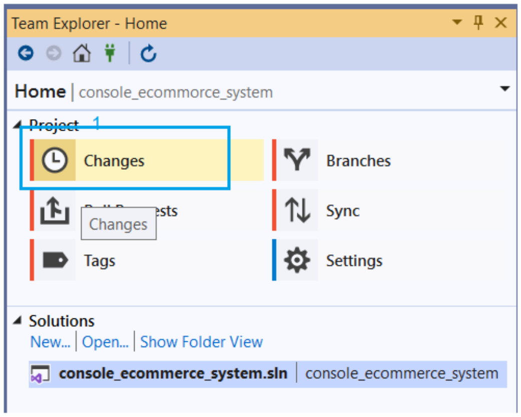
Open Solution

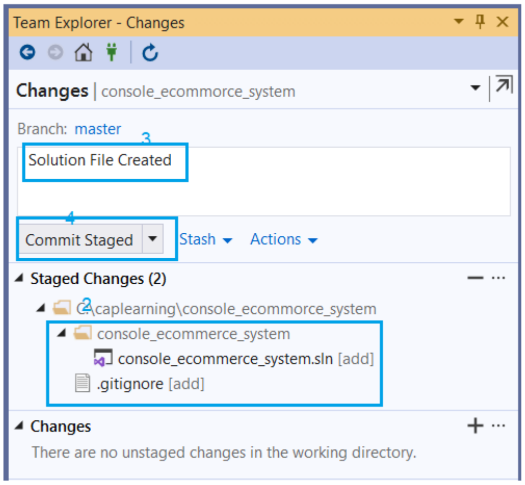
Solution Explorer

Search Solution Explorer (Ctrl+;)

Solution 'console_ecommerce_system' (0 projects)

- Commit blank solution changes into repository

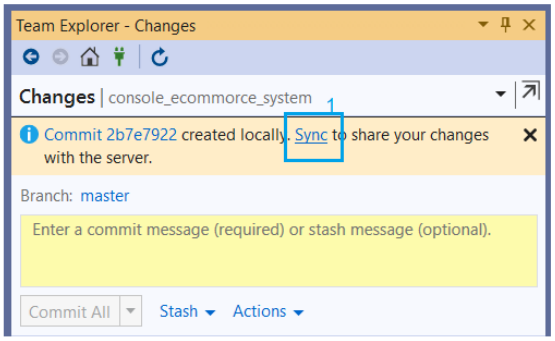

Team Explorer - Home
Home | console_ecommorce_system
Project 1
Changes
Branches
Pull Requests
Changes
Sync
Tags
Settings
Solutions
New... | Open... | Show Folder View
console_ecommerce_system.sln | console_ecommorce_system



Solution File Created

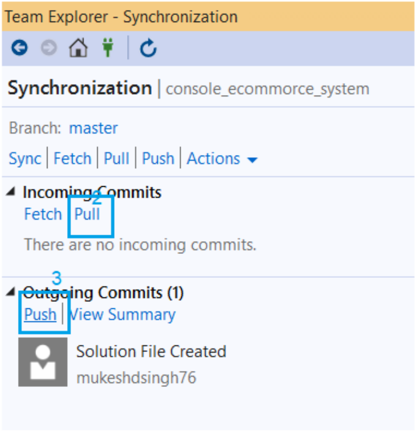
There are no unstaged changes in the working directory.

Push changes to devops repository



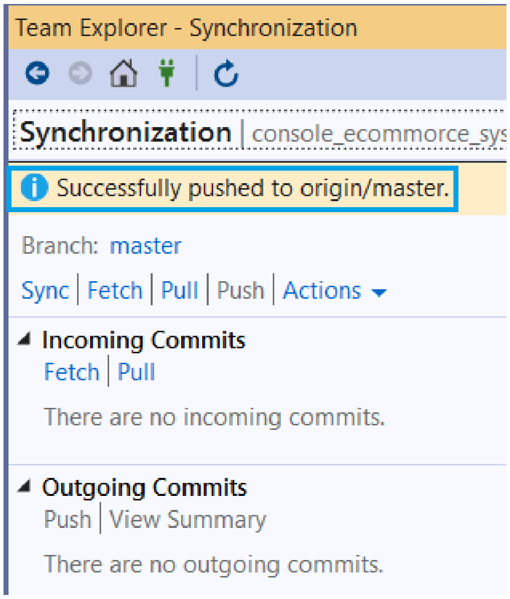
Commit 2b7e7922 created locally. Sync to share your changes with the server.

Enter a commit message (required) or stash message (optional).


Team Explorer - Synchronization
Synchronization | console_ecommorce_system
Branch: master
Sync | Fetch | Pull | Push | Actions
Incoming Commits
Fetch | Pull 2
3
Outgoing Commits (1)
Push | View Summary

There are no incoming commits.

Solution File Created
mukeshdsingh76



Team Explorer - Synchronization

Synchronization | console_ecommorce_sys

Successfully pushed to origin/master.

Branch: master

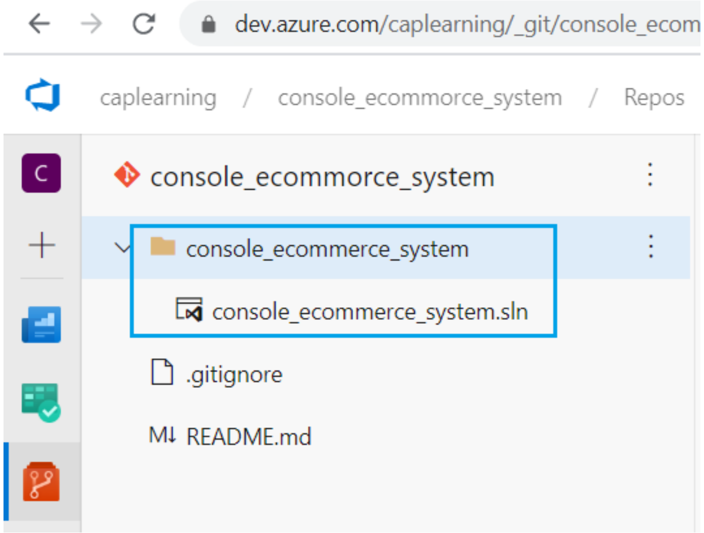
Incoming Commits

There are no incoming commits.

Outgoing Commits

There are no outgoing commits.

- Confirm changes are pushed to your DevOps repository



dev.azure.com/caplearning/_git/console_ecom

console_ecommorce_system

- console_ecommerce_system
  - console_ecommerce_system.sln
- .gitignore
- README.md

- Create Feature Branch
  Create New Branch from master.
  Feature Branch name: feature/facultyinfo-system-mvc

PROBLEM STATEMENT

OBJECTIVE

Need to develop Faculty Information System

Abstract of the project:

Faculty Information System allows to store and retrieve all information regarding faculty.

Faculty Information System will hold the following information:

- Faculty Personal Information
- Work History for each faculty member.
- Publication archiving and retrieval for each faculty.
- Degrees earned by the faculty members.
- Grants/Awards given to faculty members.
- Courses taught by the Faculty members.

Users of the System will be : Faculties, Students, Administrator

Role of Faculties :

- Login to System
- Add Personal Information, Work History, Publications and Grant Information, Courses taught by Faculty
- Update Information

- Delete Information
- View Information

Role of Administrator

- Login to System
- Create new users
- View the faculties publications yearwise, monthwise or recent
- Update the current Work information of Faculty
- Add Courses and Subjects
- Update/Delete Courses and Subjects
- Add Department

Role of Student

- Search the faculty publication and view the information

Phase 1: Create Client Application in ASP.NET Core MVC and Services using ASP.NET Core Web API.

MODULE LIST and MODULE DETAILS

Modules:

i. Faculty Class :- This class will contain methods which will allow to manage all Faculty

ii. Administrator class :- This class will contain methods to manage Administrator

iii. Department Class :- This class will contain methods to manage Department

iv. Publication class :- This class will contain methods to manage Publications

v. WorkHistory Class :- This class will contain methods to manage Work History

vi. Course Class : This class will contain methods to manage courses

b. Develop the prototypes for following functionalities:

i. **Login / Sign In**: Login screen would display asking user to enter ‘User Id’ & ‘Password’. If the supplied user credentials are valid the HomePage would be displayed, else appropriate Login error message would be displayed

ii. **Home Page**: On successful user authentication (validation of userid/password provided by the user in login screen) the homepage would be displayed. The Homepage would contain below sections/contents:

Header section: The header section would be common across all the pages and would mainly have –

- Sign In Link – On click it would take to Login page
- Search: Search for information

Main content section: It would display generic Welcome message giving overview of the site. Should have menu based on user

c. For Faculty Entry :

   i. Faculty will get option to add personal information, job history, publications, courses taught and grants/awards

   ii. Faculty will get edit option if the information already available

   iii. Faculty can view the information

d. For Administrator:

   i. Administrator will create new users (student, faculty)

   ii. Administrator will be able to add new department

   iii. Administrator can add new designation

   iv. Administrator will be able to view Faculty Information and can change current job information

   v. Administrator will print faculty publication reports yearwise, monthwise, publicationwise or recent

   vi. Administrator will add courses and subjects

b. Create the following database tables with following fields: [make your assumptions in case you require few more fields]

   1. Users : UserID, UserName, Password

   2. Faculty : FacultyID, FirstName, LastName, Address, City, State, Pincode, MobileNo, HireDate, EmailAddress, DateofBirth, DeptID, DesignationID

3. Publications : PublicationID, FacultyID, PublicationTitle, ArticleName, PublisherName, PublicationLocation, CitationDate

4. WorkHistory : WorkHistoryID, FacultyID, Organization, JobTitle, JobBeginDate, JobEndDate, JobResponsibilities, JobType

5. Degrees : DegreeID, FacultyID, Degree, Specialization, DegreeYear, Grade

6. Grants : GrantID, FacultyID, GrantTitle, GrantDescription

7. Courses : CourseID, CourseName, CourseCredits, DeptID

8. Department : DeptID, DeptName

9. Designation : DesginationID, DesignationName

10. Subjects : SubjectID, SubjectName

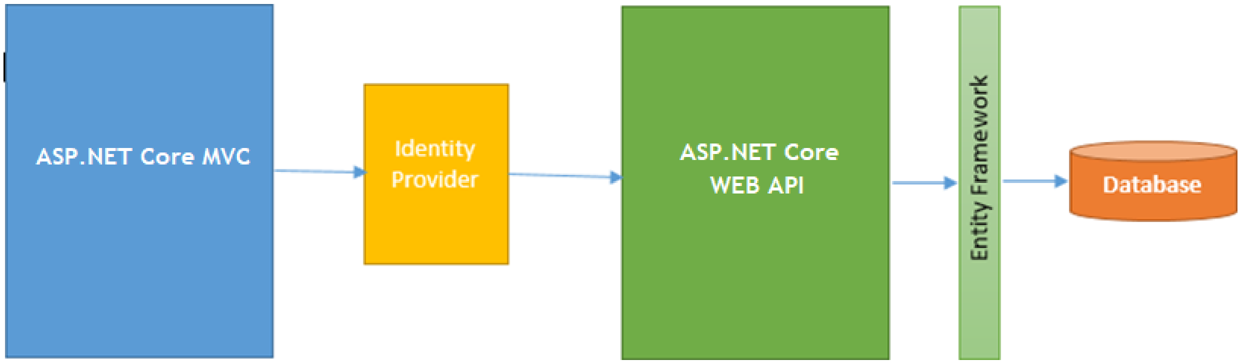
11. CourseSubject : CourseID, SubjectID

12. CoursesTaught : CourseID, FacultyID, SubjectID, FirstDateTaught

PROJECT STRUCTURE

Description: Create below sample reference project structure, which will help to reuse most of module for Web application. You are allowed to bring your own project structure and project to achieve the requirement.

All project should have minimum target framework to – .Net Core 3.1



Design guidelines

- All the exceptions/errors to be captured and user friendly message to be displayed on the Common Error page.

IMPLEMENTATION

SUMMARY OF THE FUNCTIONALITY TO BE BUILT:

The participants need to develop the Faculty Information System by building the functionality incrementally in each of the course modules of .NET LOT.

Sr. No	Course	Duration	Functionality to be built
		(in PDs)	
1	NET Core 3.1 Entity Framework Core ASP.NET Core MVC ASP.NET Core Web API	5	Developing Presentation components (ASP.NET Core MVC, Entity Framework Core, ASP.NET Core Web API)