# Assignment 2

Subject code: PRN212 - SU25

Duration: 85 minutes

## Question 1 (3.5 marks):

1. Create a Console Project named HotelBookingApp (0.5 mark)

2. Create a Generic Class (0.5 mark):

Create a generic class called BookingRecord<T> that can store booking-related data of any type.

Properties and Methods:

- Records: List<T>

- AddRecord(T record)

- GetAllRecords(): IEnumerable<T>

- RemoveRecord(T record)

- GetRecordCount()

3. Create a Room class (1.0 mark):

Properties: RoomID (int), RoomType (string), PricePerNight (decimal), OccupancyStatus (string)

Methods: IsAvailable() returns true if OccupancyStatus is "Available"

Override ToString(): RoomID - RoomType - $PricePerNight/night - Status: OccupancyStatus

4. Use the Generic Class (1.5 marks):

- Create instance of BookingRecord<string> and add 3 services (Spa, Pool, Breakfast)

- Display services and total count

- Create instance of BookingRecord<Room> and add 4 rooms

- Use LINQ to filter rooms with PricePerNight > $100

- Group rooms by OccupancyStatus using LINQ GroupBy

## Question 2 (6.5 marks):

Sunrise Hotel wants to manage rooms, guests, receptionists, and bookings. Requirements:

1. Create a Library Project: HotelDataAccess within solution SunriseHotel (1.0 mark):

- Use Entity Framework Core (Code First or Database First)

Entities:

- Receptionist.cs: ID, Code, FullName, Shift, Password

- Guest.cs: ID, Code, FullName, Age, Phone

- Booking.cs: ID, GuestID, ReceptionistID, CheckInDate, CheckOutDate, Status

Status: "Booked", "CheckedIn", "CheckedOut"

Relationships: Receptionist -> Bookings (One-to-Many), Guest -> Bookings (One-to-Many)

2. Create database DBSunriseHotel and relational tables (0.5 mark)

3. Create a Library Project: HotelBusiness (0.5 mark):

- HotelDataAccess: EF, DbContext, Models

- HotelBusiness: Business logic

4. Create a WPF App HotelApp (4.5 marks):

Receptionist Login (1.0 mark)

- Login via Code + Password

- Success: MainWindow

- Fail: "Invalid ReceptionistCode or Password"

MainWindow + Menu (0.5 mark)

- Menu: Guest Management, My Bookings

Guest Management (1.0 mark)

- Display guests (Name, Age, Phone)

- Add, Edit guests

My Bookings (1.5 marks)

- Show bookings (Guest Info, CheckIn, CheckOut, Status)

- Update Status (CheckedIn, CheckedOut)

- Sort by CheckIn ascending

- Create new booking

Logout (0.5 mark)

- Return to login screen

## Important Notes:

- Projects that do not compile/run will receive zero.

- Follow proper architecture: DataAccess, BusinessLogic, Loose Coupling.