using System;

using System.Collections.Generic;

using System.Linq;

class Employee

{

public int EmployeeID { get; set; }

public string FirstName { get; set; }

public string LastName { get; set; }

public string Title { get; set; }

public DateTime DOB { get; set; }

public DateTime DOJ { get; set; }

public string City { get; set; }

}

class Program

{

static void Main()

{

List<Employee> empList = new List<Employee>

{

new Employee { EmployeeID = 1001, FirstName = "Malcolm", LastName = "Daruwalla", Title = "Manager", DOB = DateTime.Parse("1984-11-16"), DOJ = DateTime.Parse("2011-06-08"), City = "Mumbai" },

new Employee { EmployeeID = 1002, FirstName = "Asdin", LastName = "Dhalla", Title = "AsstManager", DOB = DateTime.Parse("1984-08-20"), DOJ = DateTime.Parse("2012-07-07"), City = "Mumbai" },

new Employee { EmployeeID = 1003, FirstName = "Madhavi", LastName = "Oza", Title = "Consultant", DOB = DateTime.Parse("1987-11-14"), DOJ = DateTime.Parse("2015-04-12"), City = "Pune" },

new Employee { EmployeeID = 1004, FirstName = "Saba", LastName = "Shaikh", Title = "SE", DOB = DateTime.Parse("1990-06-03"), DOJ = DateTime.Parse("2016-02-02"), City = "Pune" },

new Employee { EmployeeID = 1005, FirstName = "Nazia", LastName = "Shaikh", Title = "SE", DOB = DateTime.Parse("1991-03-08"), DOJ = DateTime.Parse("2016-02-02"), City = "Mumbai" },

new Employee { EmployeeID = 1006, FirstName = "Amit", LastName = "Pathak", Title = "Consultant", DOB = DateTime.Parse("1989-11-07"), DOJ = DateTime.Parse("2014-08-08"), City = "Chennai" },

new Employee { EmployeeID = 1007, FirstName = "Vijay", LastName = "Natrajan", Title = "Consultant", DOB = DateTime.Parse("1989-12-02"), DOJ = DateTime.Parse("2015-06-01"), City = "Mumbai" },

new Employee { EmployeeID = 1008, FirstName = "Rahul", LastName = "Dubey", Title = "Associate", DOB = DateTime.Parse("1993-11-11"), DOJ = DateTime.Parse("2014-11-06"), City = "Chennai" },

new Employee { EmployeeID = 1009, FirstName = "Suresh", LastName = "Mistry", Title = "Associate", DOB = DateTime.Parse("1992-08-12"), DOJ = DateTime.Parse("2014-12-03"), City = "Chennai" },

new Employee { EmployeeID = 1010, FirstName = "Sumit", LastName = "Shah", Title = "Manager", DOB = DateTime.Parse("1991-04-12"), DOJ = DateTime.Parse("2016-01-02"), City = "Pune" }

};

Console.WriteLine("All Employees:");

foreach (var emp in empList)

{

Console.WriteLine($"{emp.EmployeeID}, {emp.FirstName} {emp.LastName}, {emp.Title}, {emp.DOB.ToShortDateString()}, {emp.DOJ.ToShortDateString()}, {emp.City}");

}

Console.WriteLine("\nEmployees not from Mumbai:");

var notMumbai = empList.Where(e => e.City != "Mumbai");

foreach (var emp in notMumbai)

{

Console.WriteLine($"{emp.EmployeeID}, {emp.FirstName} {emp.LastName}, {emp.City}");

}

Console.WriteLine("\nEmployees with title AsstManager:");

var asstManagers = empList.Where(e => e.Title == "AsstManager");

foreach (var emp in asstManagers)

{

Console.WriteLine($"{emp.EmployeeID}, {emp.FirstName} {emp.LastName}, {emp.Title}");

}

Console.WriteLine("\nEmployees whose last name starts with S:");

var lastNameS = empList.Where(e => e.LastName.StartsWith("S"));

foreach (var emp in lastNameS)

{

Console.WriteLine($"{emp.EmployeeID}, {emp.FirstName} {emp.LastName}");

}

Console.WriteLine("\nEmployees who joined before 01/01/2015:");

var joinedBefore2015 = empList.Where(e => e.DOJ < DateTime.Parse("2015-01-01"));

foreach (var emp in joinedBefore2015)

{

Console.WriteLine($"{emp.EmployeeID}, {emp.FirstName} {emp.LastName}, {emp.DOJ.ToShortDateString()}");

}

Console.WriteLine("\nEmployees born after 01/01/1990:");

var bornAfter1990 = empList.Where(e => e.DOB > DateTime.Parse("1990-01-01"));

foreach (var emp in bornAfter1990)

{

Console.WriteLine($"{emp.EmployeeID}, {emp.FirstName} {emp.LastName}, {emp.DOB.ToShortDateString()}");

}

Console.WriteLine("\nEmployees who are Consultant or Associate:");

var consultantsOrAssociates = empList.Where(e => e.Title == "Consultant" || e.Title == "Associate");

foreach (var emp in consultantsOrAssociates)

{

Console.WriteLine($"{emp.EmployeeID}, {emp.FirstName} {emp.LastName}, {emp.Title}");

}

Console.WriteLine($"\nTotal number of employees: {empList.Count}");

Console.WriteLine($"Total number of employees in Chennai: {empList.Count(e => e.City == "Chennai")}");

Console.WriteLine($"Highest Employee ID: {empList.Max(e => e.EmployeeID)}");

Console.WriteLine($"\nTotal number of employees joined after 01/01/2015: {empList.Count(e => e.DOJ > DateTime.Parse("2015-01-01"))}");

Console.WriteLine($"Total number of employees not Associate: {empList.Count(e => e.Title != "Associate")}");

Console.WriteLine("\nTotal number of employees by city:");

var empByCity = empList.GroupBy(e => e.City).Select(group => new { City = group.Key, Count = group.Count() });

foreach (var group in empByCity)

{

Console.WriteLine($"{group.City}: {group.Count}");

}

Console.WriteLine("\nTotal number of employees by city and title:");

var empByCityAndTitle = empList.GroupBy(e => new { e.City, e.Title }).Select(group => new { group.Key.City, group.Key.Title, Count = group.Count() });

foreach (var group in empByCityAndTitle)

{

Console.WriteLine($"{group.City} - {group.Title}: {group.Count}");

}

Console.WriteLine("\nYoungest Employee:");

var youngest = empList.OrderByDescending(e => e.DOB).First();

Console.WriteLine($"{youngest.EmployeeID}, {youngest.FirstName} {youngest.LastName}, {youngest.DOB.ToShortDateString()}");

}

}