

Id:2442130265

Wang & Hridoy's Tech Employee Management System

Description:

This project follows all the instructions you provided for the Employee Management System Project. And tried to make it a bit colorful to make it more interactive.

Code Usage Instructions

1. Main Menu Navigation

After launching, use the numeric keys (1-8) to access features:

```
PS C:\Users\X-man\Desktop\C# Practice\EmployeeManagementSystem> dotnet run
=====
          WANG & HRIDOV'S TECH - EMPLOYEE MANAGEMENT
=====
1. Add New Employee
2. Update Employee
3. Delete Employee
4. Search Employee (ID/Name)
5. Show All Employees
6. Payroll Menu
7. Vacation Menu
8. Exit
=====
Enter your choice: █
```

Option Function

1 Add new employee (enter name, department, salary, etc.)

2 Update existing employee (requires employee ID)

3 Delete employee (requires ID + confirm with "Y")

4 Search employee by ID or name

5 View all employees (Has two **default values** named **Wang** and **Hridoy**)

6 Open Payroll Menu (generate pay reports)

7 Open Vacation Menu (manage vacation days)

8 Exit the application

4. Key Feature Guides

Payroll Management (Menu 6)

1. Select "1" to generate a single employee's pay report (enter ID).
2. Select "2" to generate reports for all employees.
3. Reports display:
 1. Gross Pay
 2. Taxes Deducted
 3. Net Pay

```
==== PAYROLL MENU ====
1. Generate Report for Single Employee
2. Generate Report for All Employees
Choice (1/2): 2
==== PAYROLL REPORT ====
Employee: Wang Haochen (ID: 1)
Department: Engineering | Tenure: 5 Years

Annual Gross: $ 20,000.00
Annual Taxes: $ 5,400.00
Annual Net: $ 14,600.00

Monthly Gross: $ 1,666.67
Monthly Net: $ 1,216.67
Pay Period: December 2025
=====
```

Vacation Management (Menu 7)

1. Select "1" to add vacation days (enter ID + 0-365 days).
2. Select "2" to record used vacation days (system checks for sufficient days).
3. Select "3"/"4" to generate vacation reports (total/used/remaining days).

```
==== VACATION MENU ====
1. Add Vacation Days
2. Use Vacation Days
3. Single Employee Report
4. All Employees Report
Choice (1-4): 4
==== VACATION REPORT ====
Employee: Wang Haochen (ID: 1)
Department: Engineering | Tenure: 5 Years

Total Allocated:    15
Days Used:          0
Remaining:          15
=====
```

5. Input Guidelines

1. All inputs include **validation** (e.g., salary: 10k–1M; dates: MM/dd/yyyy).

```
Enter the number for your choice. 1
Annual Salary (10000-1000000, no $ or 'k'): 21
X Salary must be between $10,000 and $1,000,000 (enter full number, e.g., 80000)
Annual Salary (10000-1000000, no $ or 'k'): 20000
Hire Date (MM/dd/yyyy) : 20/10/2020
X Invalid date format. Use MM/dd/yyyy (e.g., 10/20/2020).
Hire Date (MM/dd/yyyy) : 10/20/2030
X Hire date cannot be in the future.
Hire Date (MM/dd/yyyy) : 10/10/2010
X our company was established in 2020. Hire date cannot be before 2020.
Hire Date (MM/dd/yyyy) : 10/10/2020
Initial Vacation Days (0-365): 10
✓ Employee added! ID: 3 | Name: hridoy Hawladar
```

2. Leave fields blank during updates to keep current values.

4. Project Structure (Reference)

```
EmployeeManagementSystem/
└── Models/
    ├── Employee.cs                                # Domain model (encapsulates state/behaviour)
    └── Enums/
        └── Department.cs                         # department enum
── Interfaces/
    ├── IEmployeeRepository.cs                  # Data access contract
    ├── IPayrollService.cs                     # Payroll logic contract
    └── IVacationService.cs                   # Vacation logic contract
── Repositories/
    └── InMemoryEmployeeRepository.cs          # In-memory data store
── Services/
    ├── PayrollService.cs                      # Implements payroll logic
    └── VacationService.cs                    # Implements vacation logic
── UI/
    └── ConsoleMenu.cs                        # Handles user input/output
└── Program.cs                               # Entry point
```