# Object Oriented Programming

## Objective

* To write a simple class.
* Use exception handling mechanism to handle runtime errors.

## Assignments to be done in this session

1. Develop Employee Management System for Litware Organization. Write a Class Library project LitwareLib.
   1. Add class Employee with following private members:
      * EmpNo int
      * EmpName string
      * Salary double
      * HRA double
      * TA double
      * DA double
      * PF double
      * TDS double
      * NetSalary double
      * GrossSalary double.

Write methods for accepting EmpNo, EmpName and Salary. HRA, TA, DA, PPF, TDS, NET, GROSS should be calculated automatically. Follow the table for calculations.

|  |  |  |  |
| --- | --- | --- | --- |
| Salary | HRA % of Salary | TA % of Salary | DA % of Salary |
| <5000 | 10 | 5 | 15 |
| <10000 | 15 | 10 | 20 |
| <15000 | 20 | 15 | 25 |
| <20000 | 25 | 20 | 30 |
| >=20000 | 30 | 25 | 35 |

## GrossSalary = Salary + HRA + TA + DA.

Calculate PF, TDS and Net salary in a function named “CalculateSalary()”

## PF = 10 % of GrossSalary. TDS = 18 % of GrossSalary.

NetSalary = GrossSalary – (PF + TDS).

e) Write a console application Employee Management which allow HR staff member to register newly joined employee with EmpNo, EmpName and Salary. Display gross salary of employee on console. LitwareLib class Library will be used in Test console application for creating objects and invoking functionality of Employee class. Use Exception Handling mechanism wherever necessary.

**Code :-**

**Employee.cs**

using System;

namespace LitwareLib

{

public class Employee

{

int EmpNo;

string EmpName;

double Salary;

double HRA;

double TA;

double DA;

double PF;

double TDS;

double NetSalary;

double GrossSalary;

public void setempno(int empno)

{

this.EmpNo = empno;

}

public void getEmpNo()

{

Console.WriteLine("Employee Number is: " + this.EmpNo);

}

public void setempname(string empname)

{

this.EmpName = empname;

}

public void getEmpName()

{

Console.WriteLine("Employee Name is: " + this.EmpName);

}

public void setEmpSalary(double Sal)

{

this.Salary = Sal;

}

public void getEmpSalary()

{

Console.WriteLine("Employee Salary is: " + this.Salary);

}

public void sethra()

{

double hra;

switch (Salary)

{

case double n when n > 0 & n < 5000:

hra = (10 \* Salary) / 100;

this.HRA = hra;

break;

case double n when n > 5000 & n < 10000:

hra = (15 \* Salary) / 100;

this.HRA = hra;

break;

case double n when n > 10000 & n < 15000:

hra = (20 \* Salary) / 100;

this.HRA = hra;

break;

case double n when n > 15000 & n < 20000:

hra = (25 \* Salary) / 100;

this.HRA = hra;

break;

case double n when n >= 20000:

hra = (30 \* Salary) / 100;

this.HRA = hra;

break;

default:

Console.WriteLine("Enter correct value: ");

break;

}

}

public void gethra()

{

Console.WriteLine("Employee HRA is: " + this.HRA);

}

public void setta()

{

double ta;

switch (Salary)

{

case double n when n > 0 & n < 5000:

ta = (5 \* Salary) / 100;

this.TA = ta;

break;

case double n when n > 5000 & n < 10000:

ta = (10 \* Salary) / 100;

this.TA = ta;

break;

case double n when n > 10000 & n < 15000:

ta = (15 \* Salary) / 100;

this.TA = ta;

break;

case double n when n > 15000 & n < 20000:

ta = (20 \* Salary) / 100;

this.TA = ta;

break;

case double n when n >= 20000:

ta = (25 \* Salary) / 100;

this.TA = ta;

break;

default:

Console.WriteLine("Enter correct value: ");

break;

}

}

public void getta()

{

Console.WriteLine("Employee TA is: " + this.TA);

}

public void setda()

{

double da;

switch (Salary)

{

case double n when n > 0 & n < 5000:

da = (15 \* Salary) / 100;

this.DA = da;

break;

case double n when n > 5000 & n < 10000:

da = (20 \* Salary) / 100;

this.DA = da;

break;

case double n when n > 10000 & n < 15000:

da = (25 \* Salary) / 100;

this.DA = da;

break;

case double n when n > 15000 & n < 20000:

da = (30 \* Salary) / 100;

this.DA = da;

break;

case double n when n >= 20000:

da = (35 \* Salary) / 100;

this.DA = da;

break;

default:

Console.WriteLine("Enter correct value: ");

break;

}

}

public void getda()

{

Console.WriteLine("Employee DA is: " + this.DA);

}

public void setgs()

{

double gs;

gs = Salary + HRA + TA + DA;

this.GrossSalary = gs;

}

public void getgs()

{

Console.WriteLine("Employee GrossSalary is :" + this.GrossSalary);

}

public void calculatesalary()

{

double pf, tds, ns;

pf = (10 \* GrossSalary) / 100;

this.PF = pf;

tds = (18 \* GrossSalary) / 100;

this.TDS = tds;

ns = GrossSalary - (PF + TDS);

this.NetSalary = ns;

}

public void getcs()

{

Console.WriteLine("Employee PF is :" + PF);

Console.WriteLine("Employee TDS is :" + TDS);

Console.WriteLine("Employee NetSalary is :" + NetSalary);

}

}

}

**Program.cs**

using System;

using LitwareLib;

namespace EmployeeManagement

{

class Program

{

public static void Main()

{

try

{

Console.WriteLine("Enter no. of employee : ");

int size = Convert.ToInt32(Console.ReadLine());

Employee[] obj1 = new Employee[size];

Employee obj = new Employee();

Console.WriteLine("-------Accepting Employee Details--------");

for (int i = 0; i < obj1.Length; i++)

{

Console.WriteLine("Enter Employee Number: ");

int no = int.Parse(Console.ReadLine());

obj.setempno(no);

Console.WriteLine("Enter Employee Name: ");

string name = Console.ReadLine();

obj.setempname(name);

Console.WriteLine("Enter Employee Salary: ");

double salary = double.Parse(Console.ReadLine());

obj.setEmpSalary(salary);

obj.sethra();

obj.setta();

obj.setda();

obj.setgs();

obj.calculatesalary();

}

Console.WriteLine("----------Employee Details----------");

for (int i = 0; i < obj1.Length; i++)

{

obj.getEmpNo();

obj.getEmpName();

obj.getEmpSalary();

obj.gethra();

obj.getta();

obj.getda();

obj.getgs();

obj.getcs();

}

}

catch (Exception ex)

{

Console.WriteLine(ex.GetType().Name);

}

Console.ReadKey();

}

}

}

