**KING SAUD UNIVERSITY**

**College of Applied Studies and Community Service**

**CT1411**

**Sheet 2**

**Question 1:**

Given the following diagram, Implement all the Classes and write a client code to test your application.

Emlpoyee

+ name

+Ssn

+CalculateEarning()

SalariedEmployee

-weeklySalaryValue

+CalculateEarning()

CommissionEmployee

-grossSales value

-commisionRateValue

CalculateEarning()

1. Class Employee:

CalculateEarning(): return double and its must override method.

1. Class Salaried Employee:

CalculateEarning(): return the weekly salary employee

1. Class Commission Employee:

CalculateEarning(): return the commission rate multiply by gross sales values.

1. Write appropriate properties for each class.
2. The client program should be test the application by creating 2 Salaries employee object and display their salaries. In addition to create 2 commission employee objects and display their salaries.

**Question 2:**

* Write a program to represent a class Student with information including name, id, total credit hours, and college.
* The class should include a constructor that receives name, id and college for a new student.
* The class should also include methods to add to the total credit hours, in addition to method show to retrieve all information in one string.
* Finally, the class should keep track of the total number of students added.
* Write a client program that creates three students and uses the different methods in the class Student.

**Question 3:**

With the help of Inheritance define suitable classes for geometrical figures:

Square, Circle, Rectangle, Oval.

Assume that we do not need rotation, to define square and circle using center of object and only one property - radius for circle and side length for square. This way, it is possible to define rectangle and oval with position and two properties (width and height).

Add 2 methods that must overrides:

* Show: return the geometrical information
* Calculate area: to calculate area for each figure.

Design suitable form to test your classes.