1. class Square
   1. Attributes
      * int s ; // side
   2. Member functions
      * Helping function
        + int square(int i);

Return the square of i

* + - Manager functions
      * Constructor
    - Implementor
      * void enLarge(int ds);

s is increased by ds

* + - * int area();
      * Call the method [square](https://hc.labnet.sfbu.edu/~henry/sfbu/course/introjava/java_class/slide/exercises3.html#sq)() to compute area of a square

* + - * int perimeter();

Return the perimeter of a square

* + - Access functions
      * 1 get functions
      * 1 set functions
      * Predicate
        + isLarge();

A square is large if its side is greater than 10

1. class Circle
   1. Attributes
      * double r; // radius
   2. Member functions
      * Helping function
        + double pi();

Return the value 3.1416

* + - Manager functions
      * Constructor
    - Implementor
      * void enLarge(double dr);

r is increased by dr

* + - * double area();

Call the method [pi](https://hc.labnet.sfbu.edu/~henry/sfbu/course/introjava/java_class/slide/exercises3.html#pi)() to compute area of a circle

* + - * double circumference();

Call the method [pi](https://hc.labnet.sfbu.edu/~henry/sfbu/course/introjava/java_class/slide/exercises3.html#pi)() to compute the cicumference of a circle

* + - Access functions
      * 1 get function
      * 1 set function
      * Predicate
        + isLarge();

A circle is large if its radius is greater than 10

* + - * + isAPoint();

A circle is a point if r == 1;

1. class Coin
   1. Attributes
      * Cicle circleObj;
      * Square squareObj;
   2. Member functions
      * Helping function
        + calcCircleArea();

Return the area of the coin's circle portion

* + - * calcSquareArea();

Return the area of the coin's square portion

* + - Manager functions
      * Two Constructors
      * public Coin(int s1, double r1);
      * public Coin(Square squareObj1, Circle circleObj1);

* + - Implementor
      * area(): Use the helping functions to compute the area of a coin which is equal to the substraction of the square's area from its circle's area.
    - Access functions
      * 2 get functions
      * 2 set functions
      * Predicate
        + isNormal();
    - A coin is normal if its diameter is longer
    - than the diagnal of the square.

1. Test your class by
   1. Create 1 object, coin
      * coin whose square's side is 2 and its circle's radius is 2
   2. Print the area of coin
   3. Check if coin is normal
   4. Knowledge of four concepts are required in this question:
      * [Aggregation](https://hc.labnet.sfbu.edu/~henry/sfbu/course/introjava/java_class/slide/classStruct.htm)
      * [Summary of toString(), clone(), equals()](https://hc.labnet.sfbu.edu/~henry/sfbu/course/introjava/java_class/slide/summary_table.html)
      * [Clone](https://hc.labnet.sfbu.edu/~henry/sfbu/course/introjava/java_class/slide/clone.html) (with and without object attributes)
      * [toString()](https://hc.labnet.sfbu.edu/~henry/sfbu/course/introjava/java_class/slide/toString.html)
      * [equals()](https://hc.labnet.sfbu.edu/~henry/sfbu/course/introjava/java_class/slide/equalMethod.html)
      * References
        + [4 types of member functions](https://hc.labnet.sfbu.edu/~henry/sfbu/course/introjava/java_class/slide/javaMemFunc.html)
          - [Geometry](https://hc.labnet.sfbu.edu/~henry/sfbu/course/introjava/java_class/slide/javaMemFunc.html#geometry)
        + [Class structure](https://hc.labnet.sfbu.edu/~henry/sfbu/course/introjava/java_class/slide/classStruct.htm)
          - [Class containing one layer of multiple simple objects attributes](https://hc.labnet.sfbu.edu/~henry/sfbu/course/introjava/java_class/slide/classStruct.htm#Class%20containing%20one%20layer%20of%20multiple%20simple%20objects%20attributes)
        + [Constructor Types](https://hc.labnet.sfbu.edu/~henry/sfbu/course/introjava/java_class/slide/constructor_type.html)
        + [Summary of toString(), clone(), equals()](https://hc.labnet.sfbu.edu/~henry/sfbu/course/introjava/java_class/slide/summary_table.html)