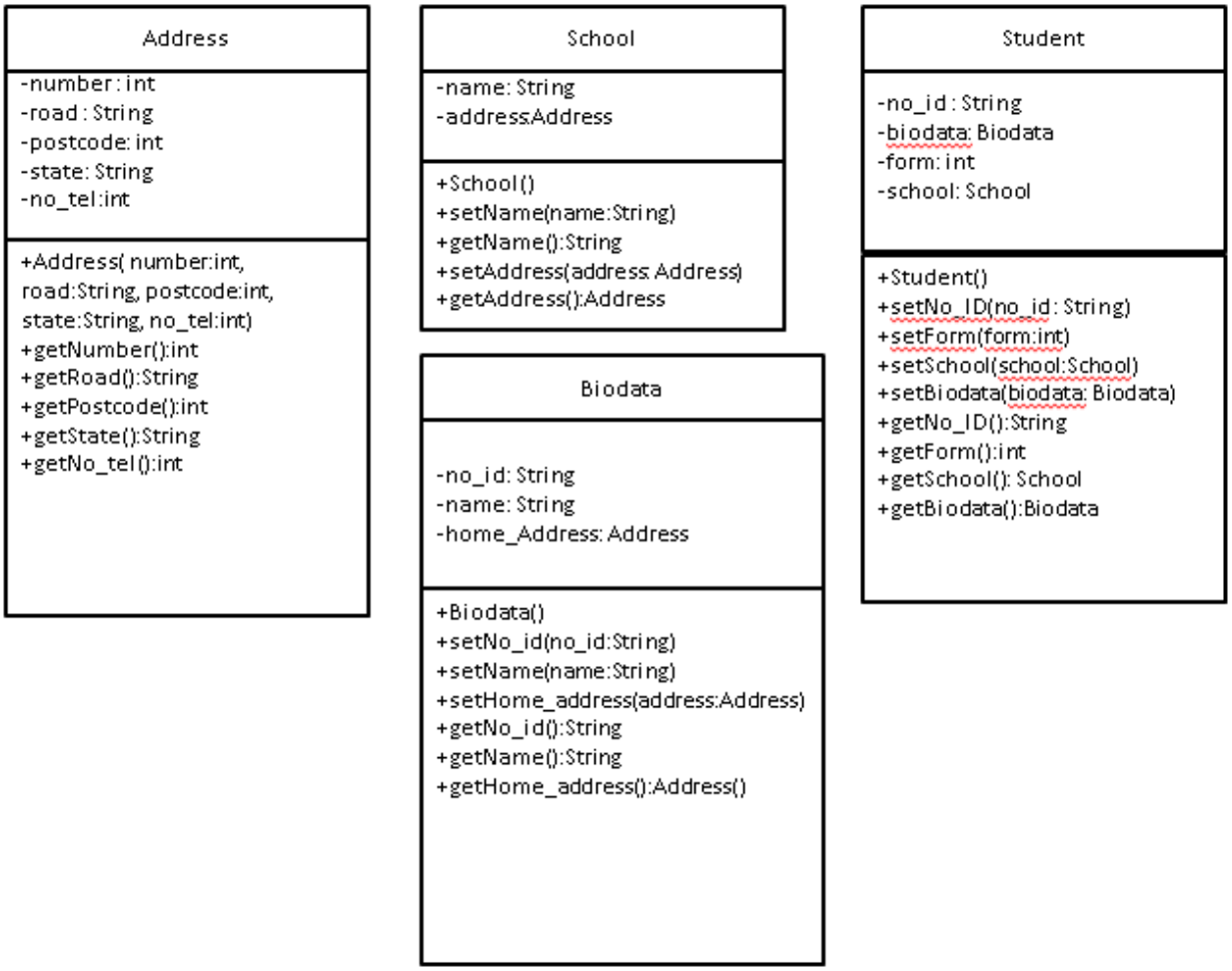
1. Answer the following questions
    a. Write the Java implementation for the UML classes given below.



    b. After completing the UML classes above, write a main application named MyLab2Main.java. Set values of student based on the value given below.

Student
No id : A12345 **Biodata** : No_id: A12345 Name: Ahmad **Address**: 789, Jalan Munshi Abdullah, 75400 Melaka 0623232323 Form: 5 School Sekolah Tun Tijah School Address: 5, Jalan Tun Fatimah, 75400 Melaka

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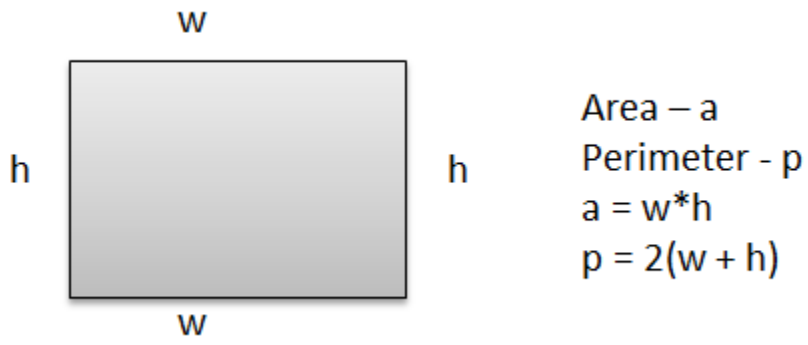

2. The diagram above shows a rectangle with width w and height h. The formula to get an area and perimeter also been given in the diagram. Draw a UML class diagram named Rectangle and then write source code implementation of the class. After that, Write one class named MyMain.java that creates two **Rectangle** objects . The first object with width **4** and height **40** and the seconds object with width **3.5** and **35.9**. Display the width, height, area and perimeter of each rectangle object.
    a. Two **double** data fields named **width** and **height** that specify the width and height of the rectangle. The default value is **1** for both width and height.
    b. A no-argument constructer that creates a default rectangle.
    c. A constructor that creates a rectangle with specific width and height.
    d. A method named **getArea()** that returns the area of this rectangle.
    e. A method named **getPerimeter()** that returns the perimeter

3. In n-sided regular polygon, all sides have the same length and all angles have the same degree (i.e. the polygon is both equilateral and equiangular). Design a class named RegularPolygon that contains:
    a. A private **int** data field named n that defines the number of sides in the polygon with default value **3**.
    b. A private double data field name side that stores the length of the side with default value **1**
    c. A private double data filed named x that defines the x-coordinates of the polygon's center with default value **0**.
    d. A private double data field named y that defines the y-coordinates of the polygon's center with default value **0**.
    e. A no-argument constructor that creates a regular polygon with default values.

f. A constructor that creates a regular polygon with the specific number of sides and length of side, center at (**0,0**).
g. A constructor that creates a regular polygon with the specific number of sides, length of side, and x-and y-coordinates.
h. The accessor and mutator methods for all data fields.
i. The getPerimeter() that returns the perimeter of the polygon.
j. The method getArea() that returns the area of the polygon. The formula for computing the area of a regular polygon is $= \frac{\mathrm{n\ X}\ s^2}{4\ \mathrm{X}\ \tan\left(\frac{\pi}{n}\right)}$.

Draw the UML class diagram for the class and then implement the class. Write a test program that creates three RegularPolygon objects. Create using no-argument constructor, usiong RegularPolygon(6, 4) and using RegularPolygon(10, 4, 5.6, 7.8). For each object, display its perimeter and area.