Object Oriented Programming
Midterm Exam

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Class
2i

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1 How to write a class

Based on the code below, please explain if the code is correct or not.

```
public class ClassA {
    float fl = 0.15f;

    float hitung() {
        float x = 2f * f1;
    }
}
```

The code above is still *incorrect* because the `hitung()` method does not return any value. The correct code should be like this:

```
public class ClassA {
    float fl = 0.15f;

    float hitung() {
        float x = 2f * f1;
        return x;
    }
}
```

2 Sum of 2 dimensional array

Write a java code to calculate the sum of a 2 dimensional array using a loop.

```
public class SoalArray {
    public static void main(String[] args) {
        int[][] arrayInt = {
            {1, 1, 4},
            {2, 1, 2},
            {3, 2, 1}
        };

        int sum = 0;
        for (int i = 0; i < arrayInt.length; i++) {
            for (int j = 0; j < arrayInt[i].length; j++) {
                sum += arrayInt[i][j];
            }
        }

        System.out.println(sum);
    }
}
```

3 Attribute and Methods inheritance

Mention what attributes and methods that has been inherited by the class `ClassY` from the class `Class`. Also explain how the code works!

```
public class Class {
    int a = 2;
    int x = 0;

    int hitung() {
        x = x + 5 * a;
        return x;
    }
}

public class ClassY extends Class {
    int b = 5;
    int y = 0;

    int hitungY() {
        y = hitung() * b;
        return y;
    }

    public static void main(String[] args) {
        ClassY cy = new ClassY();
        System.out.println(cy.hitungY());
    }
}
```

The attributes and methods that has been inherited by the class `ClassY` from the class `Class` are `a`, `x`, and `hitung()`. The `hitungY` method works by calling the `hitung()` method from the parent class, then multiply the result with the `b` attribute.

4 Class with constructor

Inside the class below, complete the code with:

1. Add constructor to fill the `nim`, `name`, `address` and `gender`.
2. Instantiate the object and fill the attributes through the constructor.

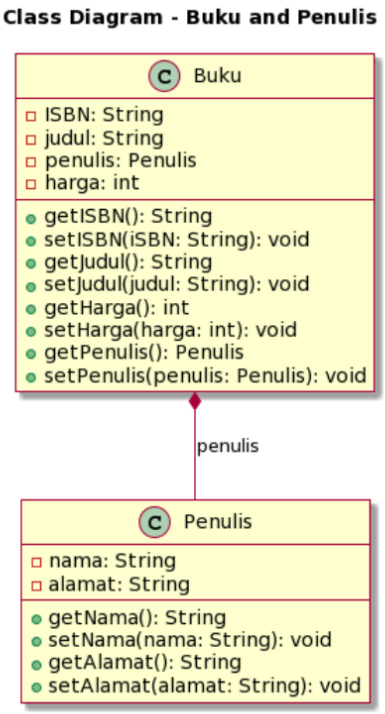
```java
public class Student {
    String nim, name, address;
    char gender;

    public Student(String nim, String name, String address, char gender) {
        this.nim = nim;
        this.name = name;
        this.address = address;
        this.gender = gender;
    }

    public static void main(String[] args) {
        Student s = new Student(
            "2241720002",
            "Dicha Zelianivan Arkana",
            "Jl. Terusan Kembang Turi",
            'M'
        );
    }
}
```

5 OOP

Translate the class diagram below into a working code using OOP!




```
public class Buku {
    private String isbn;
    private String title;
    private Writer writer;
    private int price;

    public getIsbn() {
        return isbn;
    }

    public setIsbn(String isbn) {
        this.isbn = isbn;
    }

    public getTitle() {
        return title;
    }

    public setTitle(String title) {
```

```
        this.title = title;
    }

    public getWriter() {
        return writer;
    }

    public setWriter(Writer writer) {
        this.writer = writer;
    }

    public getPrice() {
        return price;
    }

    public setPrice(int price) {
        this.price = price;
    }
}

public class Writer {
    private String name;
    private String address;

    public getName() {
        return name;
    }

    public setName(String name) {
        this.name = name;
    }

    public getAddress() {
        return address;
    }

    public setAddress(String address) {
        this.address = address;
    }
}
```