OOPS!

Person
int a

```
Person p1 = new Person();
p1.age = 10;
p1.name = "A";
p1.sayHi();

Person p2 = new Person();
p2.age = 20;
p2.name = "B";
p2.sayHi();

Person p3 = p2;
p3.sayHi();

p2.name = "C";
p2.sayHi();
p3.sayHi();
```
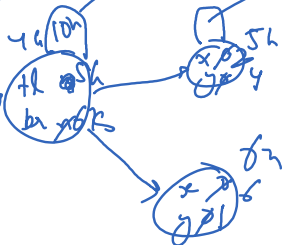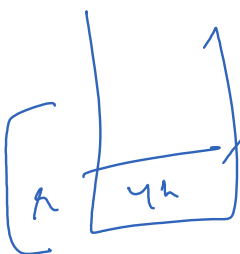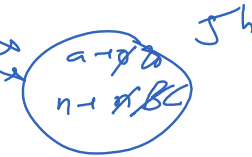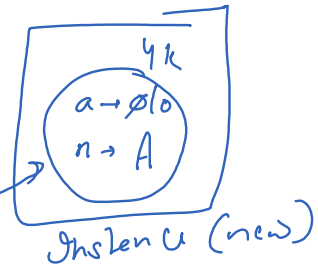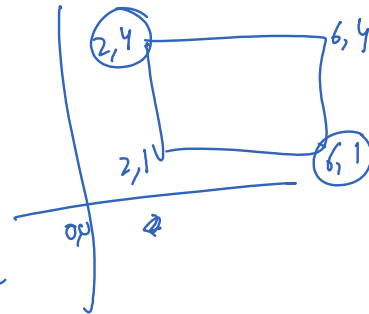
4k
a → 0|0
n → A

Instance (new)

p3 | 5k
p2 | 5h
b1 | 4h

main (ref)

a → 0|0   5h
n → ABC

jre   javac   Main.java
                Main.class

j-cre

forw... state   Recty

10n

4k 10n
tl   5h
br   ...

x p 2
j p 4   5h

x p 6
y p 1

Point i x
     i y

Recty
Point tl
Point br

Recy
r = new Rectyle

r.tl = new Pont()   r.br = new Pont
r.tl.x = 2   r.br.x = 6
r.tl.y = 4   r.br.y = 1

2,4   6,4

2,1   6,1
   op
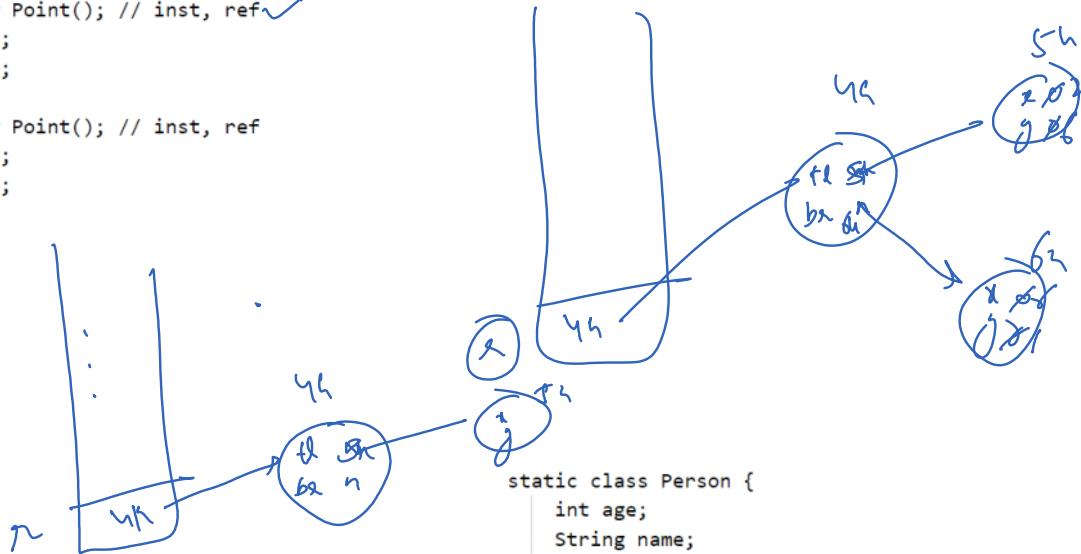
```
blic static void main(String[] args)
    Rectangle r = new Rectangle(); // in
    r.tl = new Point(); // inst, ref
    r.tl.x = 2;
    r.tl.y = 6;

    r.br = new Point(); // inst, ref
    r.br.x = 6;
    r.br.y = 1;
```



```
static class Person {
    int age;
    String name;

    void sayHi(){
        int age = 200;

        System.out.println(this.name + "[" + age + "] says hi.");
    }
}
```
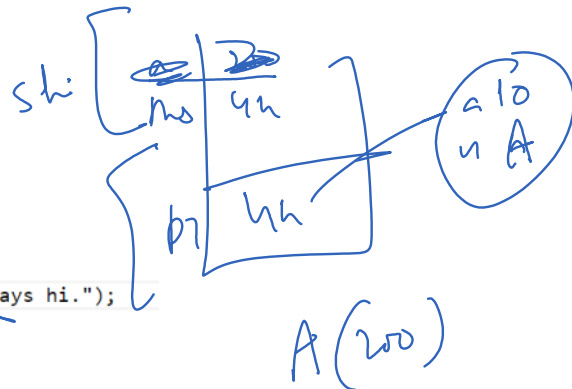
```
static class Person {
    int age;
    String name;

    void sayHi(){
        int age = 200;

        System.out.println(this.name + "[" + age + "] says hi.");
    }
}
```


A (200)

```
Person p1 = new Person();
p1.age = 10;
p1.name = "A";
```

```
Person p1 = new Person();
p1.age = 10;
p1.name = "A";
p1.sayHi();

Person p2 = new Person();
p2.age = 20;
p2.name = "B";
p2.sayHi();

Person temp = p1;
p1 = p2;
p2 = temp;

p1.sayHi();
p2.sayHi();
```
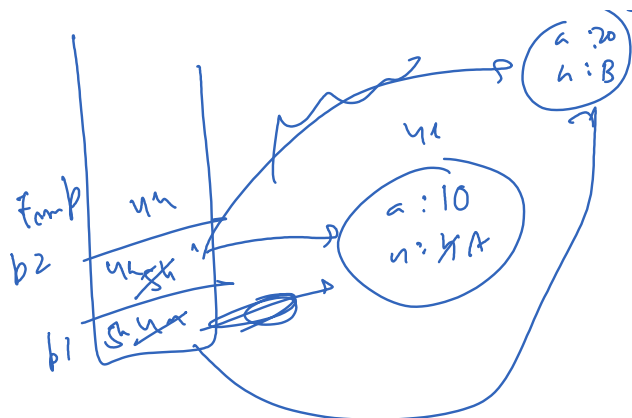
A [10]
B [20]

B (20)
A [10]

```
Person p1 = new Person();
p1.age = 10;
p1.name = "A";
p1.sayHi();

Person p2 = new Person();
p2.age = 20;
p2.name = "B";
p2.sayHi();

swap(p1, p2);

p1.sayHi();
p2.sayHi();

}

static void swap(Person a, Person b){
  Person t = a;
  a = b;
  b = t;
}
```

```java
        Person p1 = new Person();
        p1.age = 10;
        p1.name = "A";
        p1.sayHi();

        Person p2 = new Person();
        p2.age = 20;
        p2.name = "B";
        p2.sayHi();

        swap(p1, p2);

        p1.sayHi();
        p2.sayHi();

    }

    static void swap(Person a, Person b){
        int tage = a.age;
        a.age = b.age;
        b.age = tage;

        String tname = a.name;
        a.name = b.name;
        b.name = tname;
    }
```
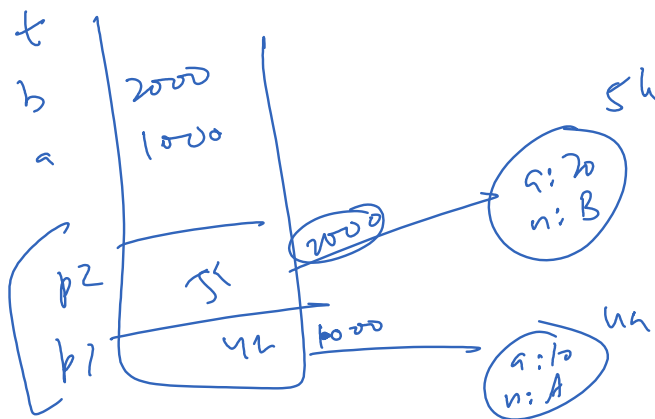
. n = C

```java
static class BankAccount {
    int anum;
    int money;
    static int roi;

    void announce(){
        System.out.println(this.anum + ", " + this.money + ", " + this.roi);
    }
}

public static void main(String[] args) throws NumberFormatException, IOExce
    BankAccount a1 = new BankAccount();
    a1.anum = 10;
    a1.money = 100;
    a1.roi = 4

    a1.announce();

    BankAccount a2 = new BankAccount();
    a2.anum = 11;
    a2.money = 110;
    a2.roi = 5

    a2.announce();
    a1.announce();
}
```
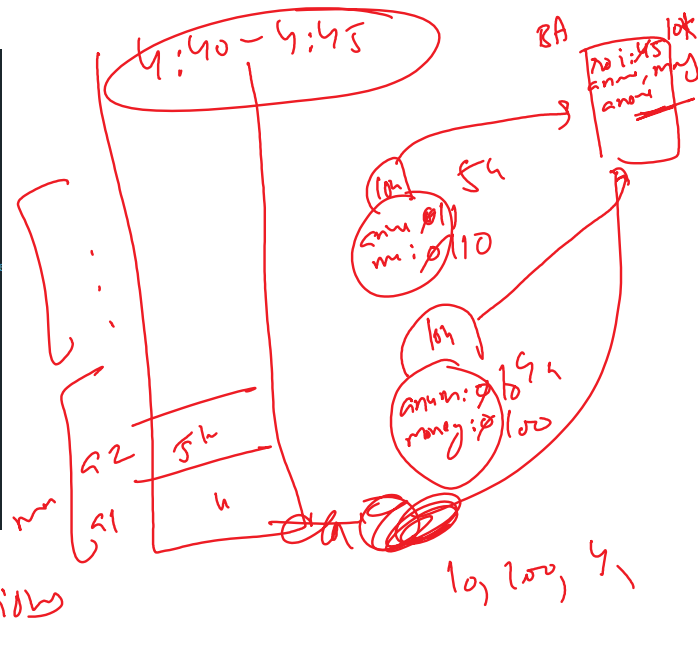
BankAccount.roi = 4   [Obvious

4:40 - 4:45

BankAccount . roi = 4

10, 200, 4