

Monday Sep. 10
Lecture 2

Lab 0 & I.I

Lab session today -

Study Advice : check moodle announcement .

Visualizing Person objects at Runtime

```

class Person {
    int age;
    String nationality;
    double weight;
    double height;
    Person(int x, String n, double w, double h) {
        this.age = x;
        this.nationality = n;
        this.weight = w;
        this.height = h;
    }
}
    
```

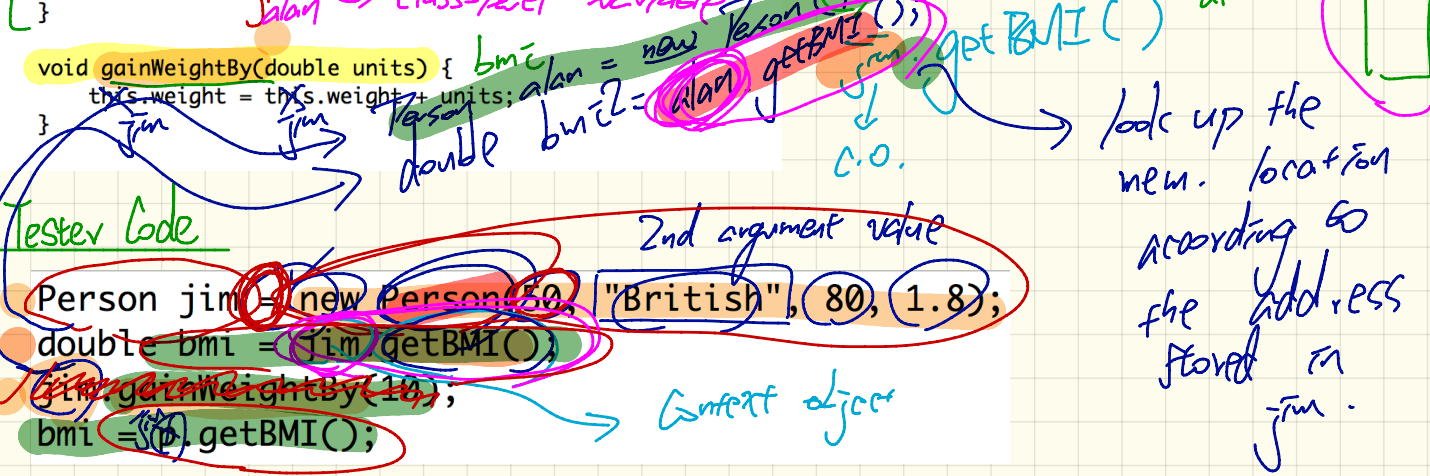
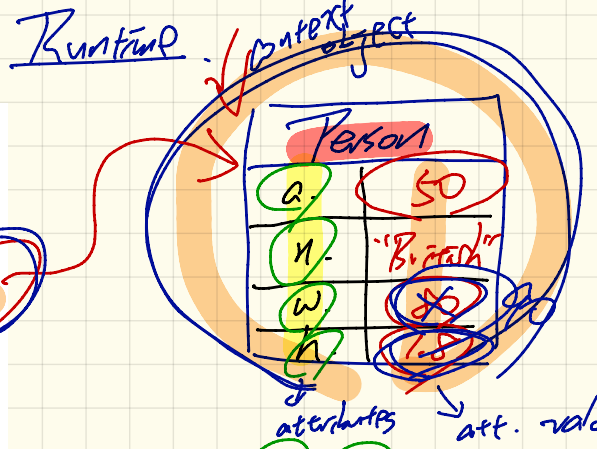
```

double getBMI() {
    double bmi = this.weight / (this.height * this.height);
    return bmi;
}

void gainWeightBy(double units) {
    this.weight = this.weight + units;
}
    
```

```

Tester Code
Person jim = new Person(50, "British", 80, 1.8);
double bmi = jim.getBMI();
jim.gainWeightBy(10);
bmi = jim.getBMI();
    
```



```
class Person {  
    double weight;
```

```
    void setWeight (double weight) {
```

```
        weight = weight;
```

```
    }
```

shadow

this.weight = weight;

oop

class (compile-time)

↳ attributes

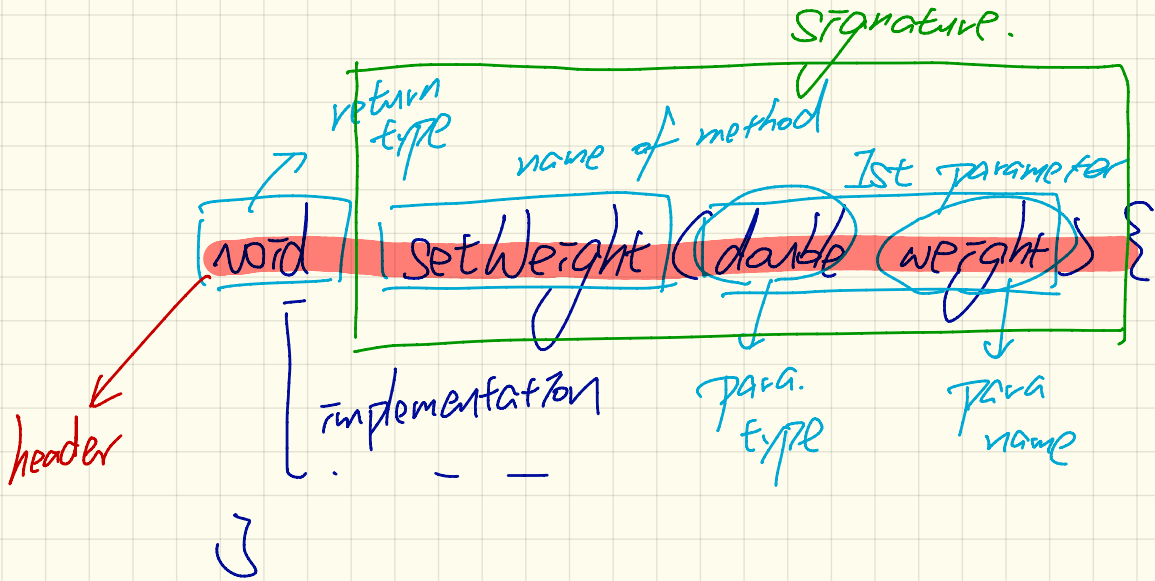
↳ methods

objects (runtime)

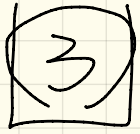
↳ objects

↳ context object

↳ method call



header vs. signature



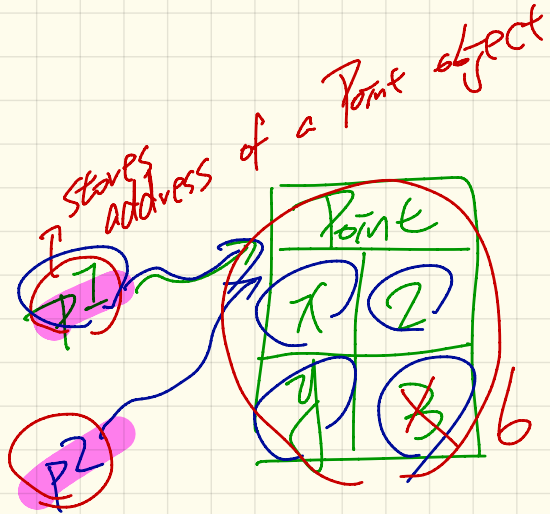
i



j



k



Point p2 = p1;

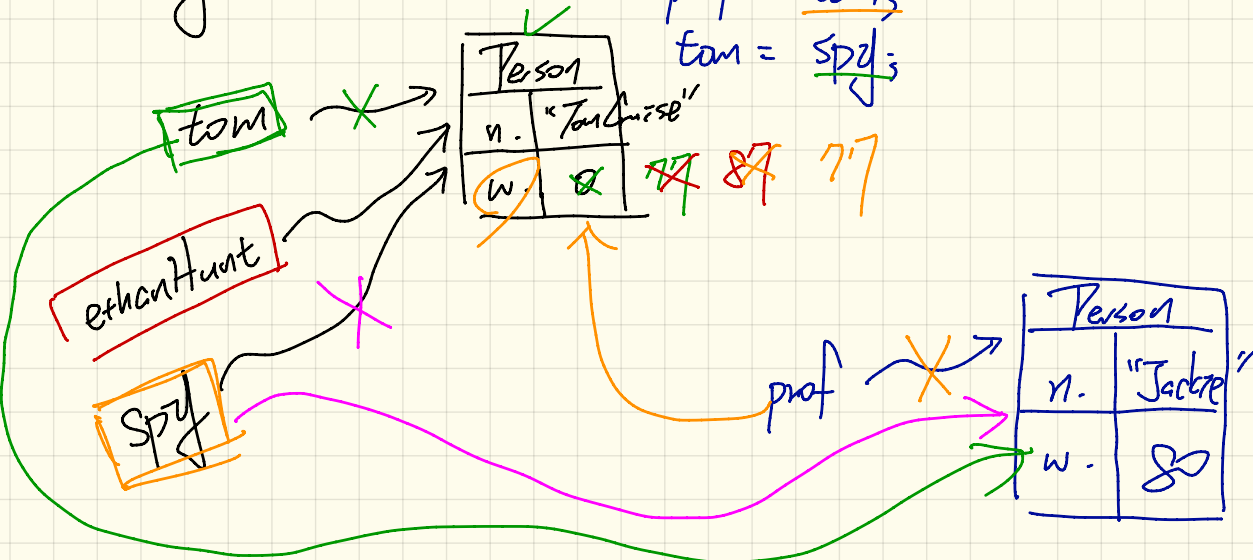
println (p1.x + " " + p1.y);

p2. moveUp (3); aliasing: jas if p1. moveUp (3)

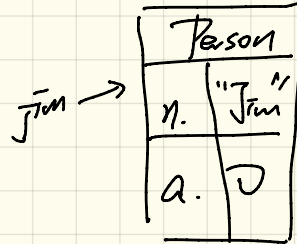
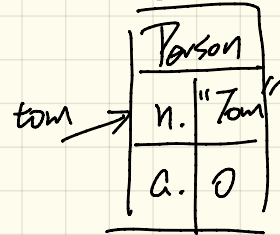
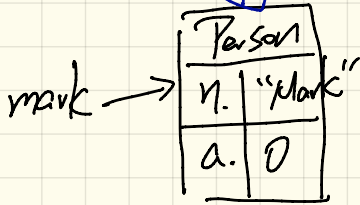
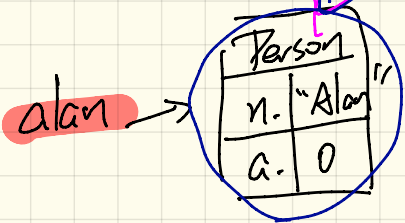
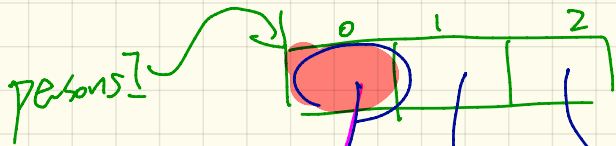
println (p1.x + " " + p1.y);

Aliasing

spy = prof ;
prof = tom ;
tom = spy ;



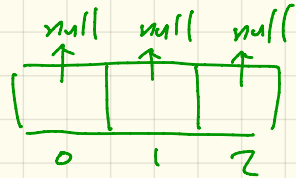
```
System.out.println(prof.name + " teaches 2030");  
System.out.println("EthanHunt is " + ethanHunt.name);  
System.out.println(EthanHunt is  + spy.name);  
System.out.println(TomCruise is  + tom.name);  
System.out.println("Jackie is " + prof.name);
```

aliasing

alan == persons1[0]

persons2



initializer

Person[] persons1 = {alan, mark, tom};

↳ Person[] persons1 = new Person[3];

persons1[0] = alan; persons1[1] = mark; persons1[2] = tom;