OL Academy

ITCS107/114

Chapter 6

Review of Classes & Methods

T. Abeer Rozba

class syntax:

```
public class className {
        // variables (data fields
        // constructors
        // methods
            main method
}
```

variables

instance variables

static variables

local variables

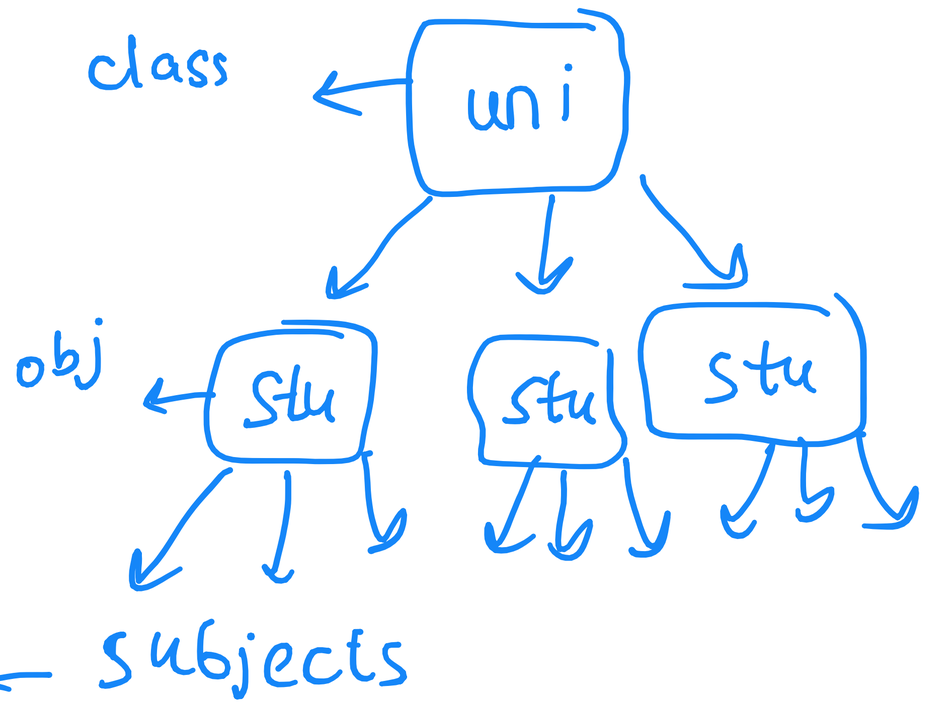
no modifier

private

public

protected

access modifiers



(A) write a class called **Person** have the following data members (Private): name(string), cpr(long)

and the following methods:

- Set and get methods for name and cpr.
- print method.

set → • initilization • changing values

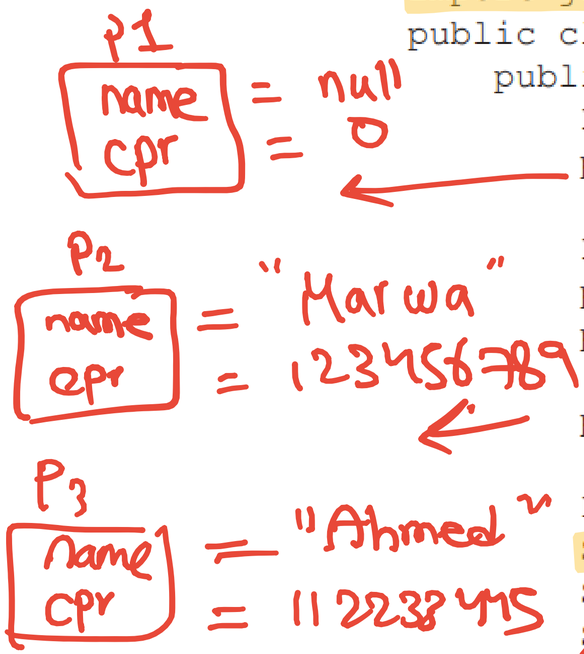
get → • fetch variable

```
public class Person {
    private String namei
    private long cpr i

    public void setName(String name ) {
        this.name = namei }
    public String getName() { return name;}
    public void setCpr ( long newCpr) {
        cpr = newCpri }
    Public long getCpr() { return cpri }
    public void print( ) {
        System.out.println("Name:" + name + "cpr" +
                           cpr ) }

}
```

(B) Write a class TestPerson having only main method. In the main method declare two objects p1 and p2 of type person. create an object of type Person having some suitable values of attributes and assign it to variable p1 .




```
import java.util.Scanner;
public class TestPerson {
    public static void main(String[] args) {
        Person p1 = new Person();
        p1.print();       >> null   0

        Person p2 = new Person();
        p2.setName("Marwa");
        p2.setCpr(123456789);

        p2.print();   >> Marwa   123456789

        Person p3 = new Person ();
        Scanner kbd = new Scanner (System.in);
        System.out.println("Enter name:");
        String name;
        name = kbd.nextLine();   >> Ahmed   Ali

        p3.setName(name);

        System.out.println("Enter cpr:");
        long cpr;
        cpr = kbd.nextLong(); >> 112233445
        p3.setCpr(cpr);

        p3.print(); >> Ahmed    112233445


} //end of class Test
```

- Create a class called **Employee** that has three private data members:
  - empID (**long**), default value is 1001
  - salary(**double**), should be non-negative floating point number, default = 500.0
  - name (string), default “No name”
- Additionally, the class should have:
  - Default Constructor
  - Constructor with parameters for all private members.
  - One mutator method (*set*) for empID, salary and name.
  - Three accessor methods (*get*) for empID, salary and name.
  - A method print to output the values of empID, salary and name.

```
public class Employee {
    private long empID;
    private double salary;
    private String name;

    // default constructor
    public Employee () {
        empID = 1001;
        salary = 500;
        name = "No name"
    }

    // constructor with parameters
    public Employee (long newEmpID, double newSalary,
                     String name) {
        empID = newEmpID;
```

```
if ( newSalary < 0 ) {
    System.out.print " Salary invalid. " ;
        salary = 500 ;
else { salary = newSalary ; }
 this . name = name ; }
public void setVariables (long empID , double salary,
                          String name) {
        this.empID = empID ;
        this . salary = salary ;
        this . name = name ; }
public long getEmpID ( ) { return empID ; }
public double getSalary ( ) { return salary ; }
public String getName ( ) { return name ; }
public void print ( ) {
    System. out.println (" EmpID: " + empID + " Salary: " +
        salary + " name: " + name ) ;
}
```

Recap

- Class syntax
  - variables
  - constructors
  - methods → main
- types of variables
  - instance
  - static
  - local
- types of access modifiers → private, protected, public, default
- Set and get methods
  - change / initialization
  - retrieve values
- types of constructors
  - default
  - with parameters