

# CSC 113

# Tutorial 5

Inheritance

## Person

- firstName : String

- lastName : String

# id : int

+ Person()

+Person(firstName: String,  
lastName: String, id: int)

+Setters/Getters

+display() : void

# Empty Constructor for initializing the object.

```
private String firstName;  
private String lastName;  
protected int id;
```

```
public Person()  
{  
  
}
```

Person
- firstName : String - lastName : String # id : int
+ Person() +Person(firstName: String, lastName: String, id: int) +Setters/Getters +display() : void

Second constructor that assign the values to corresponding attributes.

```
public Person(String firstName, String lastName, int
id)
{
    this.firstName = firstName;
    this.lastName = lastName;
    this.id = id;
}
```

Person
- firstName : String - lastName : String # id : int
+ Person() +Person(firstName: String, lastName: String, id: int) +Setters/Getters +display() : void

# Setters/Getters

```
public String getFirstName() {  
    return firstName;  
}  
  
public void setFirstName(String firstName) {  
    this.firstName = firstName;  
}  
  
public String getLastName() {  
    return lastName;  
}  
  
public void setLastName(String lastName) {  
    this.lastName = lastName;  
}  
  
public void setId(int id) {  
    this.id = id;  
}
```

Person
- firstName : String - lastName : String # id : int
+ Person() +Person(firstName: String, lastName: String, id: int) +Setters/Getters +display() : void

# display()

```
public void display()
```

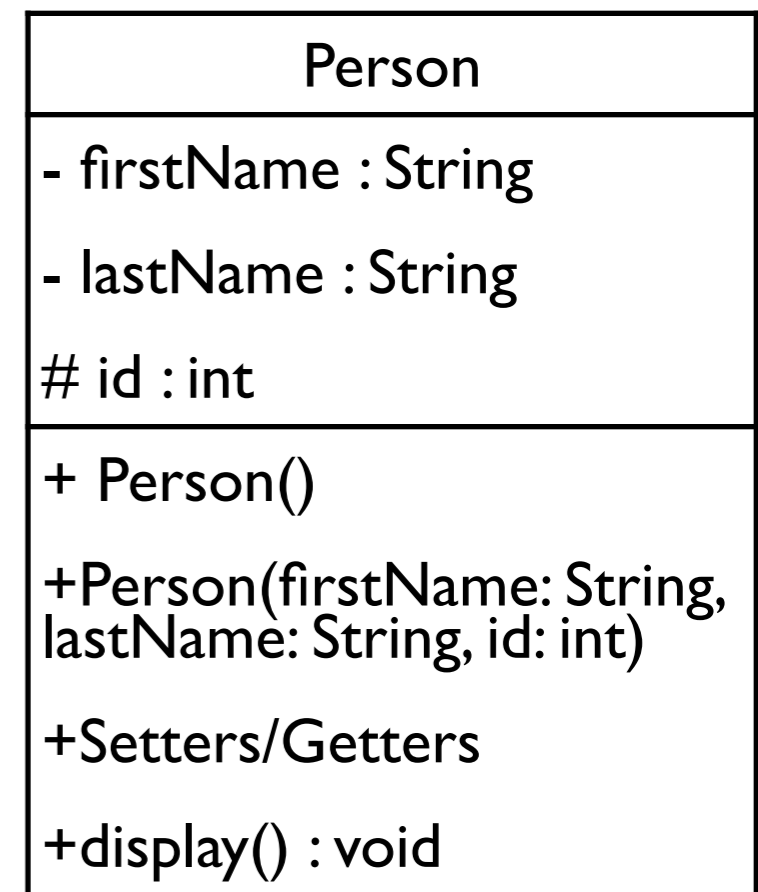
```
{
```

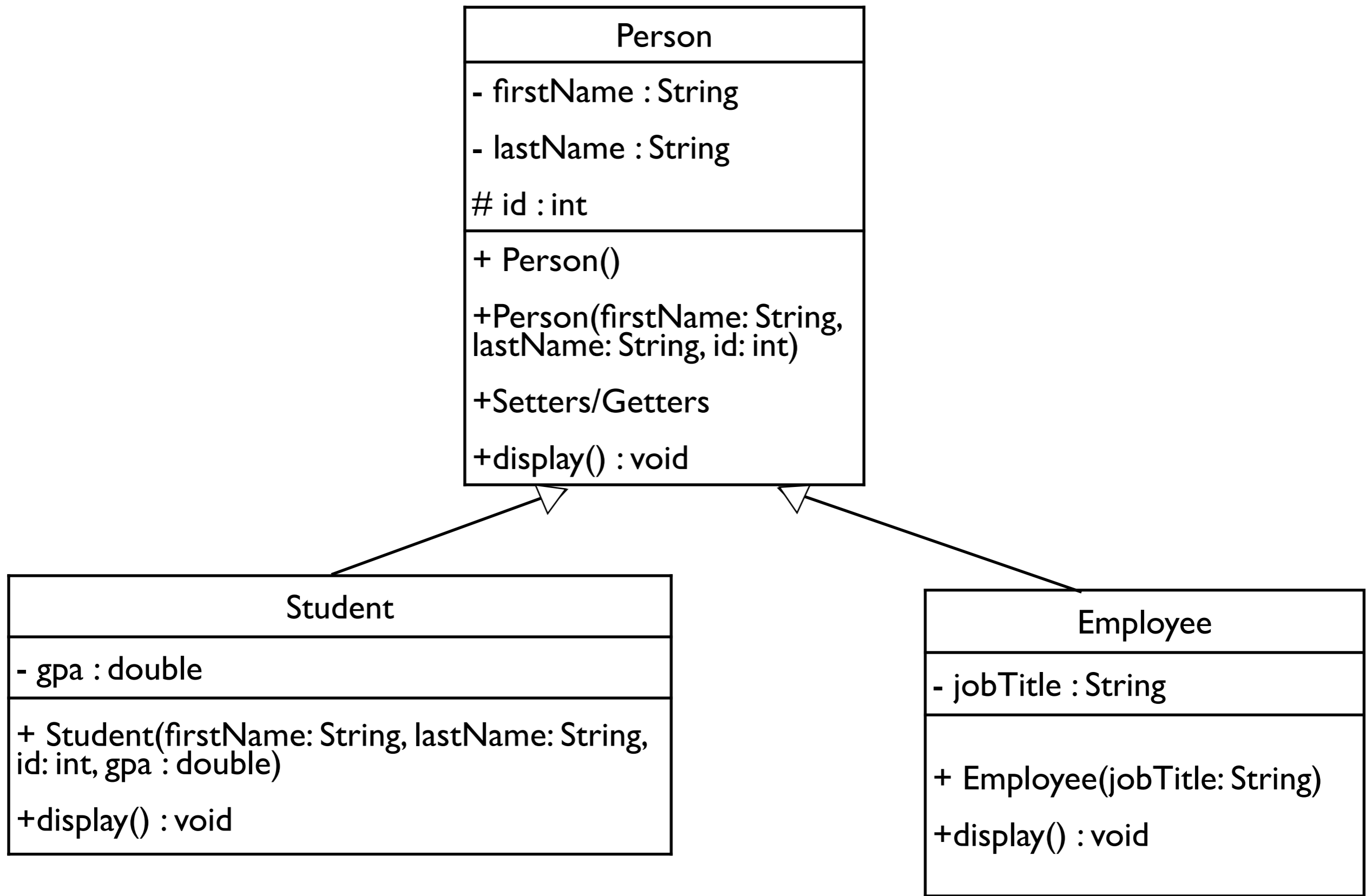
```
    System.out.println("\n---Person Display---");
```

```
    System.out.println("ID: "+id);
```

```
    System.out.println("Name: "+firstName+" "+lastName);
```

```
}
```





# Constructor should call super first.

```
public class Student extends Person{
```

```
    private double gpa;
```

```
    public Student(String firstName,  
                  String lastName, int id, double gpa)
```

```
{
```

```
    //Constructor must be the first statement.
```

```
    super(firstName,lastName,id);
```

```
    this.gpa = gpa;
```

```
}
```

Student
- gpa : double
+ Student(firstName: String, lastName: String, id: int, gpa : double)
+display() : void



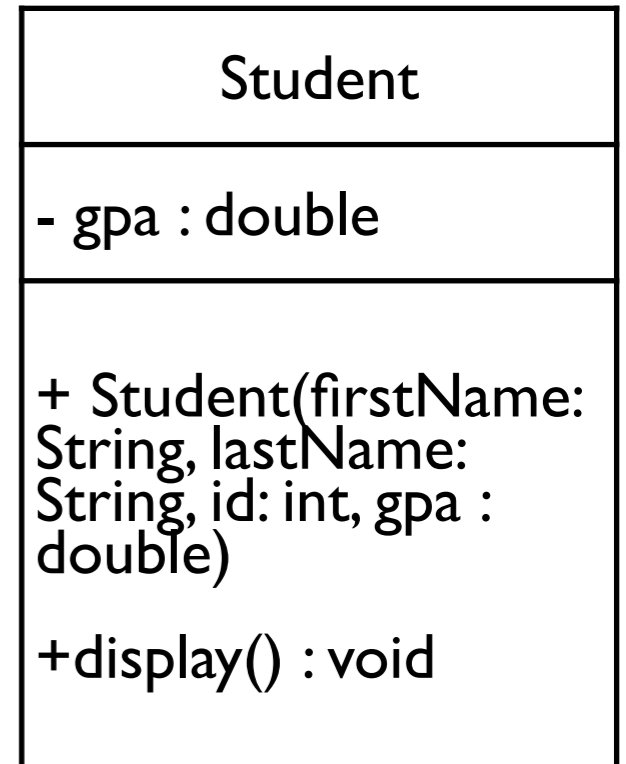
# Constructor

Employee
- jobTitle : String
+ Employee(jobTitle: String) +display() : void

```
public class Employee extends Person{  
  
    private String jobTitle;  
  
    public Employee(String jobTitle)  
    {  
        this.jobTitle = jobTitle;  
    }  
}
```

# Student display()

```
public void display()
{
    System.out.println("\n---Student Display---");
    System.out.println("ID: "+id);
    System.out.println("Name: "+getFirstName()+"
"+super.getLastName());
    System.out.println("GPA: "+gpa);
}
```



# Employee display()

Employee
- jobTitle : String
+ Employee(jobTitle: String) +display() : void

```
public void display()  
{  
    System.out.println("\n---Employee display---");  
    System.out.println("jobTitle: "+ jobTitle);  
  
    super.display();  
}
```

# Main

```
Person p = new Person("Majed", "Fahad", 26);  
p.display();
```

```
---Person Display---  
ID: 26  
Name: Majed Fahad
```

# Main

```
Student s = new Student("ahmed", "Ali",22,4.9);  
s.display();
```

```
---Student Display---  
ID: 22  
Name: ahmed Ali  
GPA: 4.9
```

# Main

```
Employee e = new Employee("Professor");  
e.setFirstName("Fahad");  
e.setLastName("Abdullah");  
e.setId(99);  
e.display();
```

```
---Employee display---  
jobTitle: Professor
```

```
---Person Display---  
ID: 99  
Name: Fahad Abdullah
```

Questions?