HOCHSCHULE FURTWANGEN UNIVERSITY | HFU

Class Diagrams

and their analogies in code (TypeScript)

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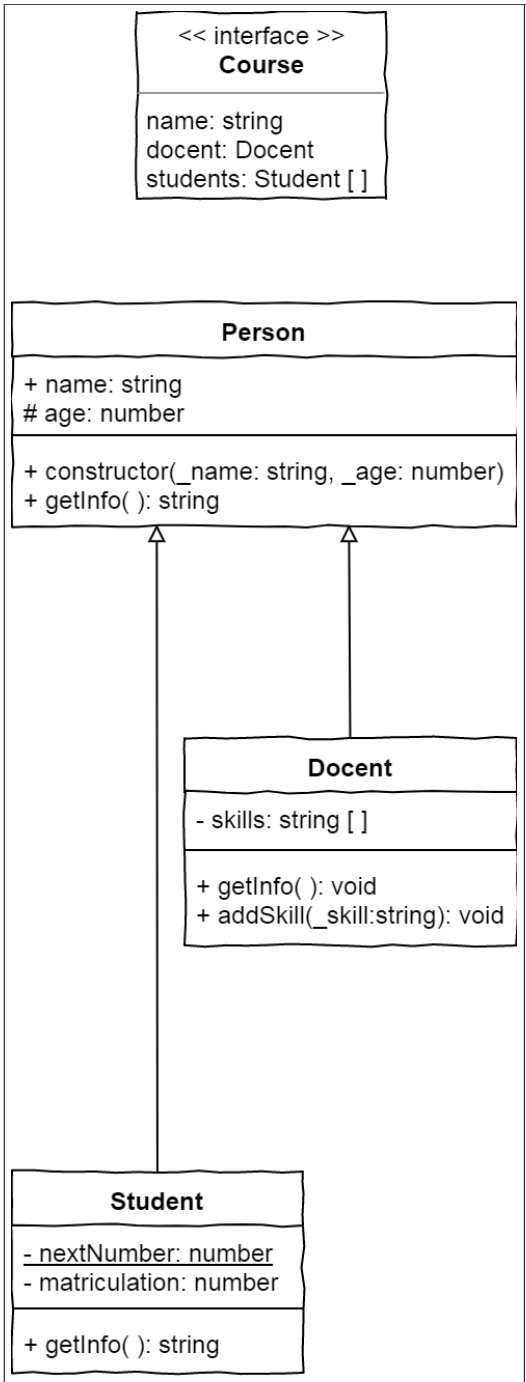
```
let courses: Course[] = [];

let course: Course = { name: "Physics", docent: null, students: [] };
course.docent = new Docent("Einstein", 71);
course.docent.addSkill("Relativity");
let student: Student = new Student("Heisenberg", 49);
course.students.push(new Student("Hawking", 8), student);

courses.push({
  name: "Art",
  docent: new Docent("Picasso", 69),
  students: [student, new Student("Dali", 46)]
});

for (let i: number = 0; i < courses.length; i++) {
    let course: Course = courses[i];
    console.log("Course: " + course.name);
    console.log("Docent: " + course.docent.getInfo());
    for (let student of course.students)
        console.log("Student " + student.getInfo());
}
```




```typescript
interface Course {
  name: string;
  docent: Docent;
  students: Student[];
}

class Person {
  public name: string;
  protected age: number;

  public constructor(_name: string, _age: number) {
    this.name = _name;
    this.age = _age;
  }

  public getInfo(): string {
    return this.name;
  }
}

class Docent extends Person {
  private skills: string[] = [];

  public getInfo(): string {
    return
"Prof. " + super.getInfo() + ", age: " + this.age;
  }

  public addSkill(_skill: string): void {
    this.skills.push(_skill);
  }
}

class Student extends Person {
  private static nextNumber: number = 0;
  private matriculation: number;

  public constructor(_name: string, _age: number) {
    super(_name, _age);
    this.matriculation = Student.nextNumber;
    Student.nextNumber++;
  }

  public getInfo(): string {
    return
      this.matriculation + ": " + super.getInfo();
  }
}
```