



Object oriented Programming

Typescript chapter 3



Agenda OOP concept

1. Why OOP in the production
2. UML for visualization
3. 4 pillar of the OOP
4. Abstraction
5. Encapsulation
6. Inheritance
7. Polymorphism
8. Example

Why OOP

- Make project structure more organized
- Make every member on the team work separately but can work together

UML – class diagram

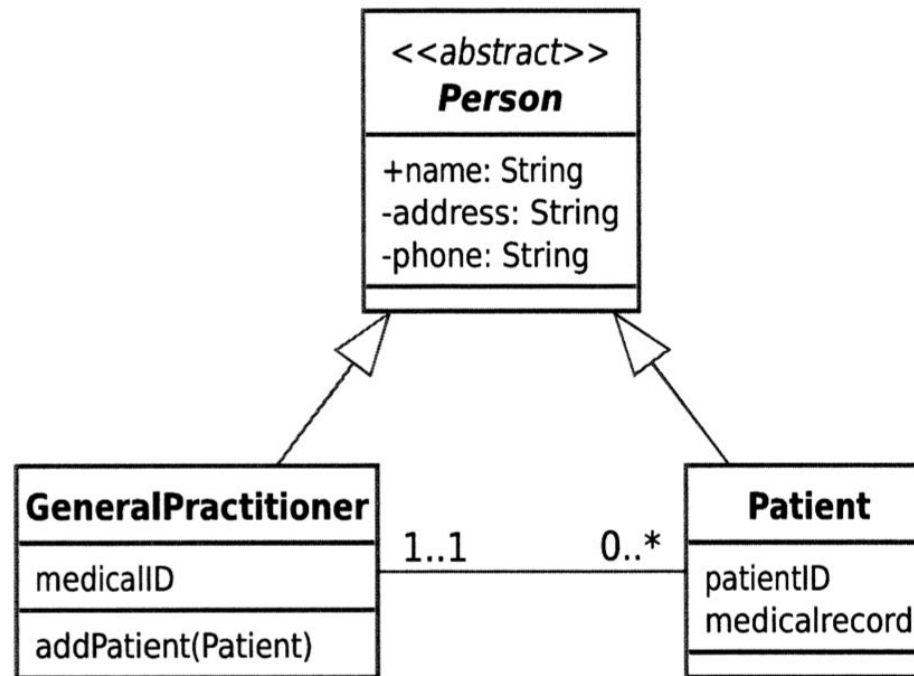
- Very important diagram for visualized project in the team
- [UML Cheatsheet | Class Diagram Resource | Khalil Stemmler](#)
- [Class Diagram | Unified Modeling Language \(UML\) - GeeksforGeeks](#)

4 Pillar of OOP

- Abstraction : Base Class
- Encapsulation : Business entity of the project
- Inheritance : How Base Class interact with other class
- Polymorphism : How child class be represent of other based class (Liskov substitution Principle)

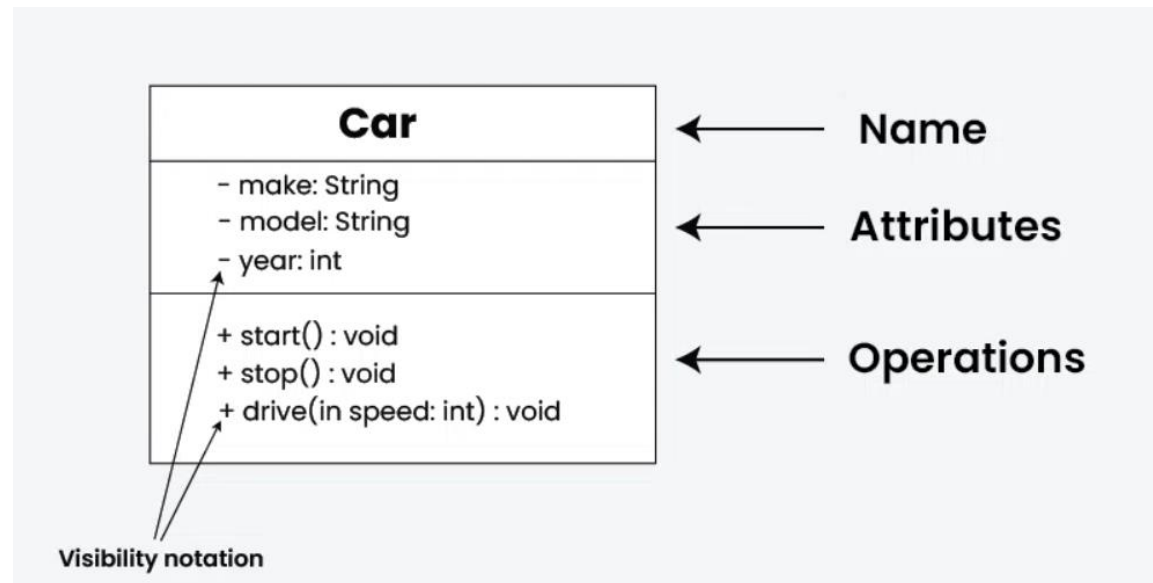
Abstraction

- The base class or Mother class of the project



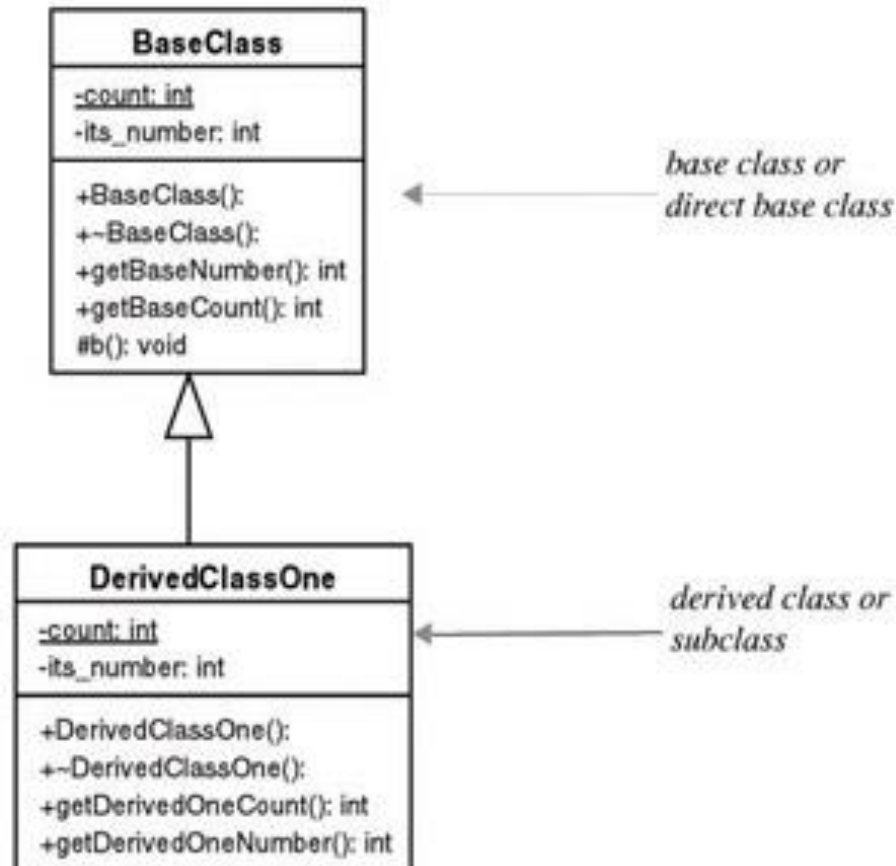
Encapsulation

- The business Entity of the project class encapsulate what data should be represent or kept in the application
- Private
- Protected
- public



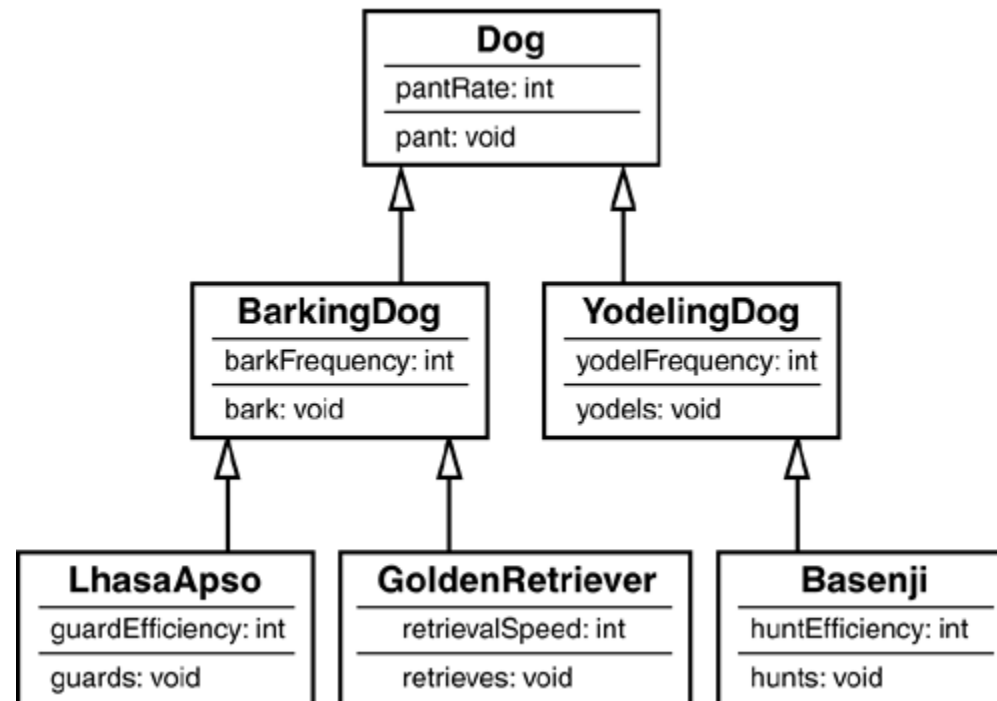
Inheritance

- The action that class can inheritance their attribute to their other class

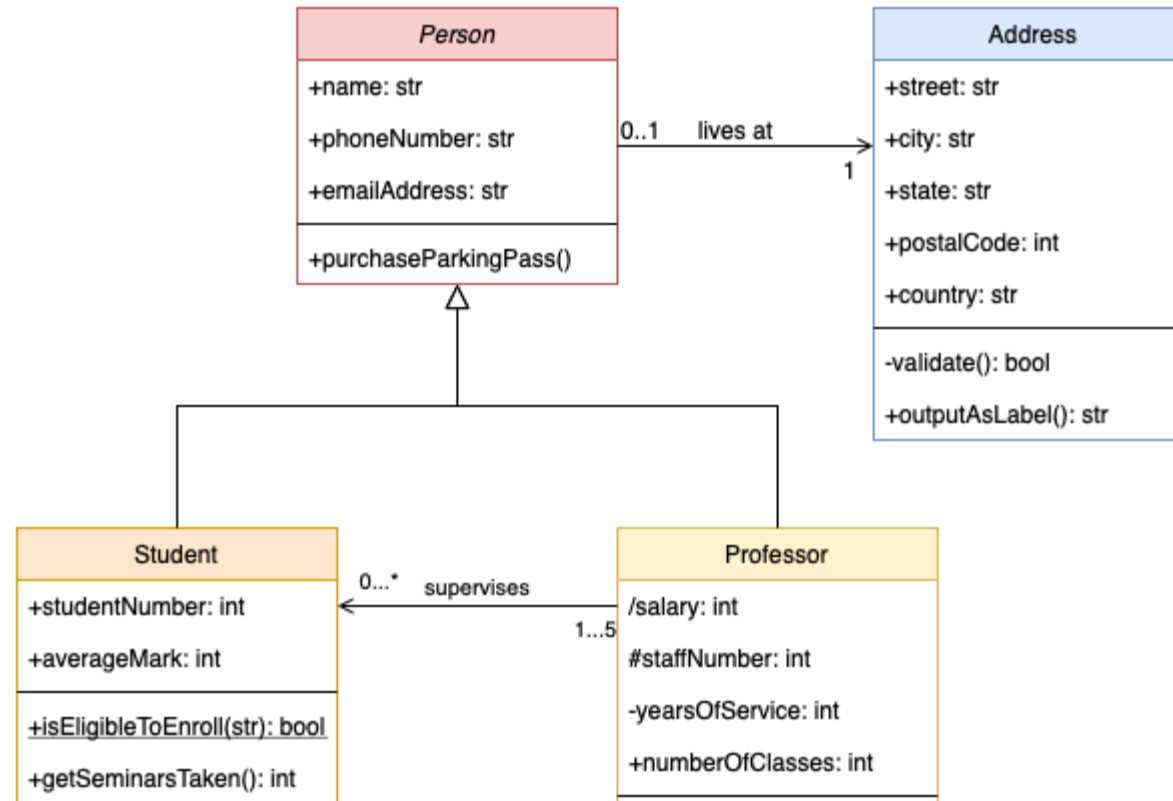


Polymorphism

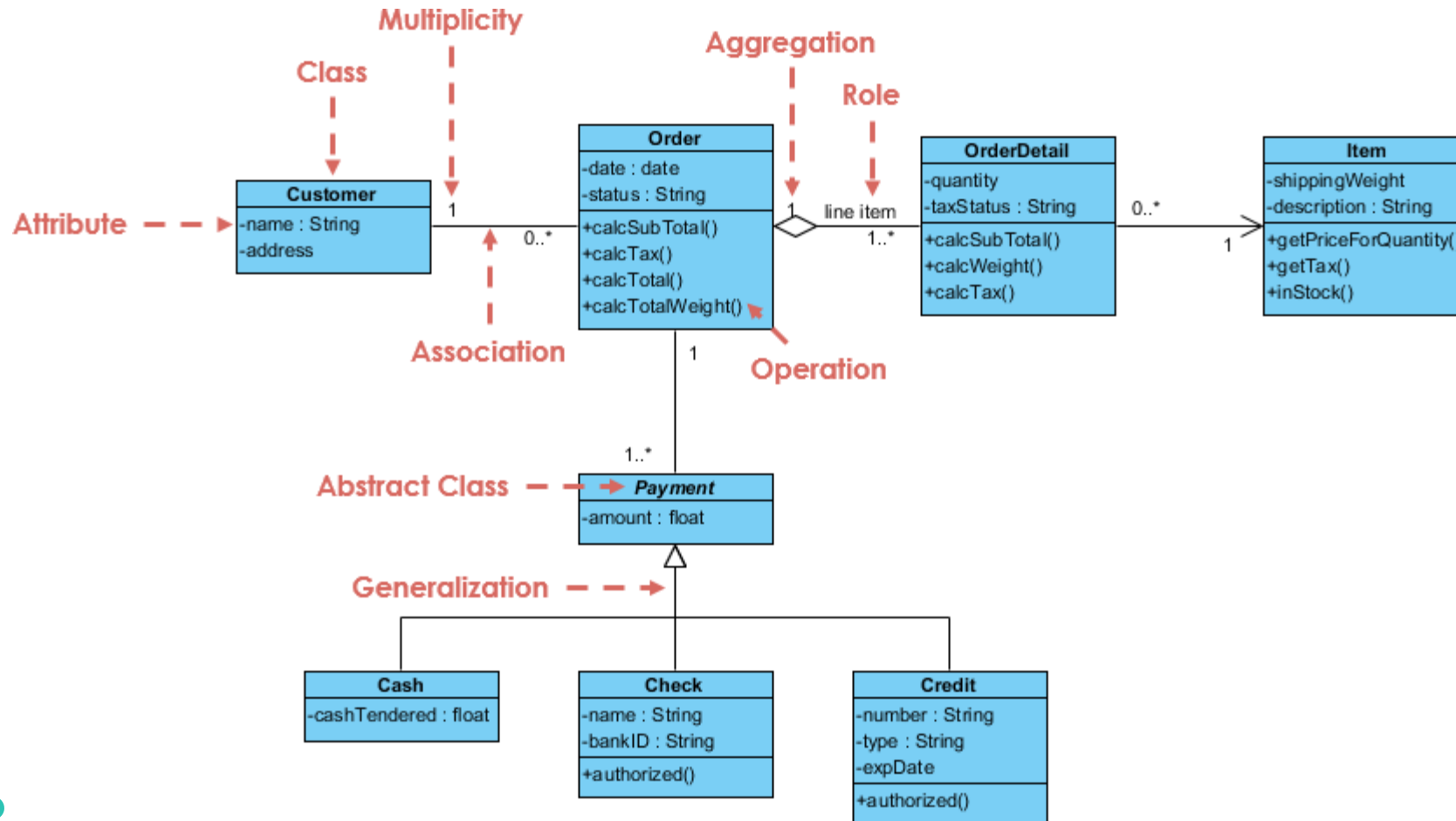
- The attribute that child class can represent their mother class



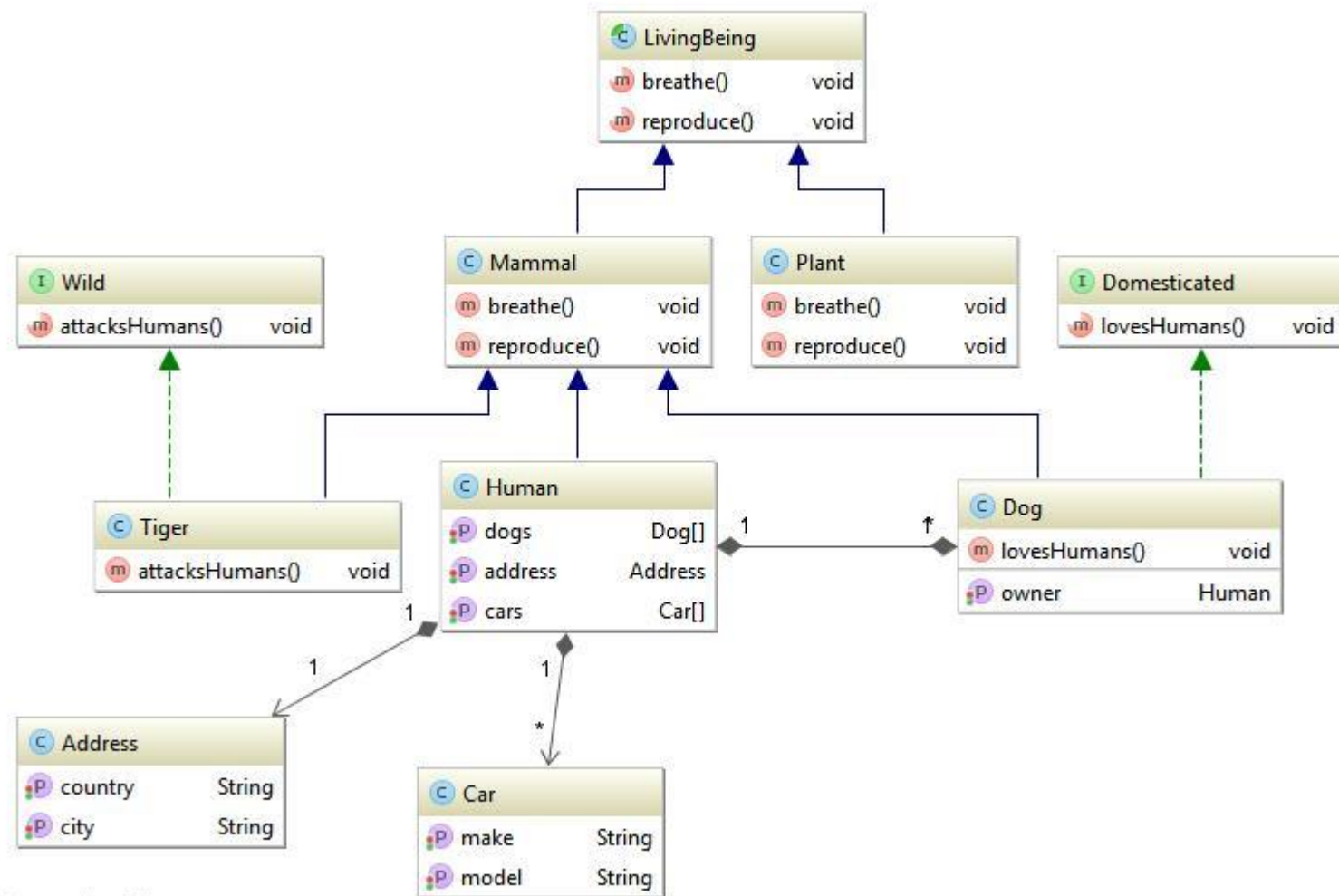
The OOP example 1



The OOP example 2

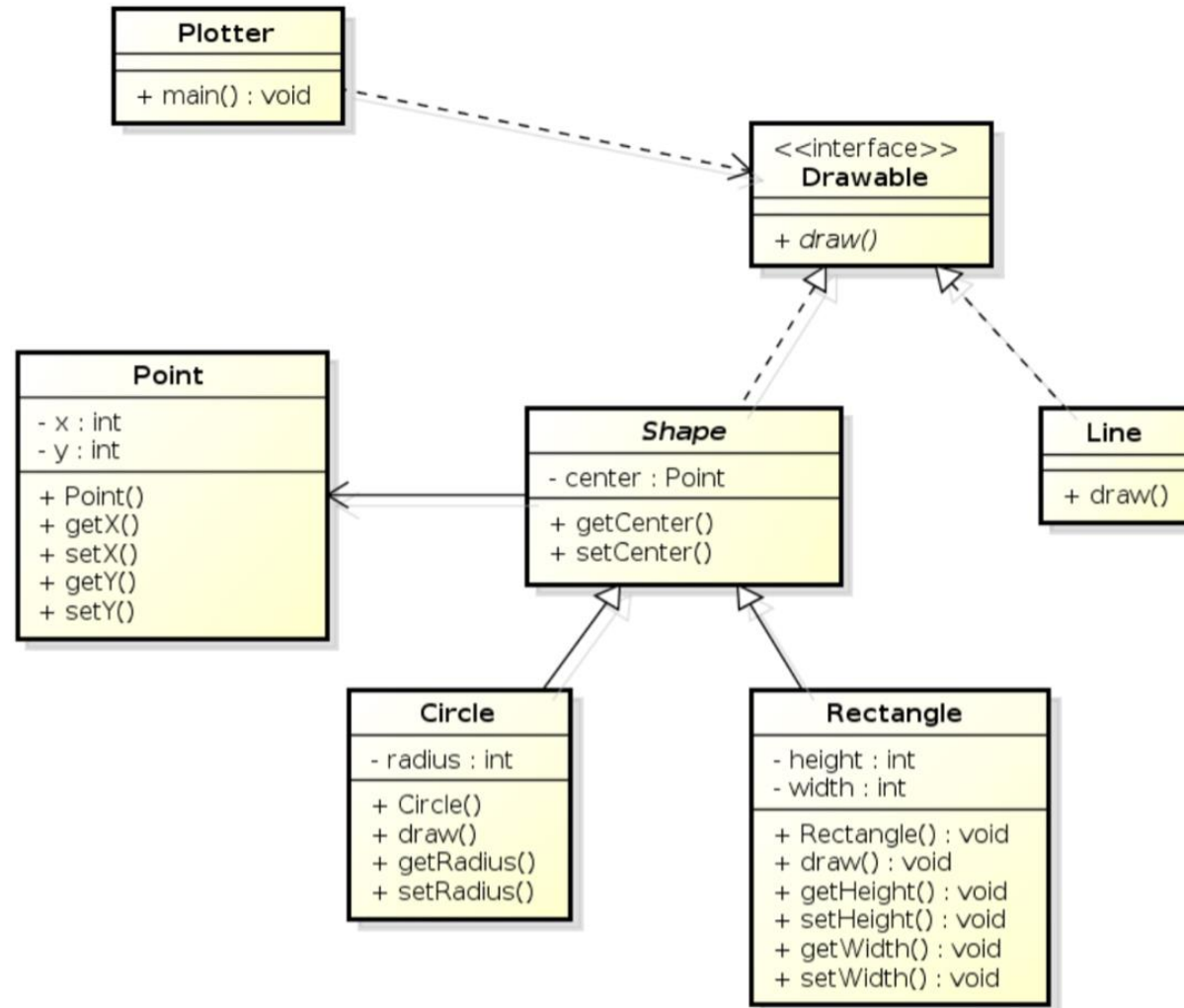


The OOP example 3



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The OOP example 4





Agenda OOP in typescript

1. type, interface, class
2. type: union type, intersection type, type index
3. class: Generic
4. interface : Generic
5. export, export default
6. Encapsulation
7. Abstraction
8. Inheritance
9. Polymorphism

Workshop 1: UML

- Every Model need to have base model
- Movie model
- Comment model

Workshop 2: Coding from UML

- Create normal typescript project
- From what you learn today coding from your uml

Assignment 1: Movie app

- Create express application
- From what you learn today create movie app base on your UML follow by this api
- GET /movies : get all movie in mock movie
- GET /movies/:id : get specific movie in mock movie
- GET /movies/:id/avg : get specific movie average rating
- POST /movies/:id/comment : add comment in specific movie