Review OOP & UML

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Why OOP?

OOP

- OOP can make software development more modular
- Which can make it easier to upgrade and update

- OOP systems can be easily upgraded from small to large systems
- It is very easy to partition the work in a project

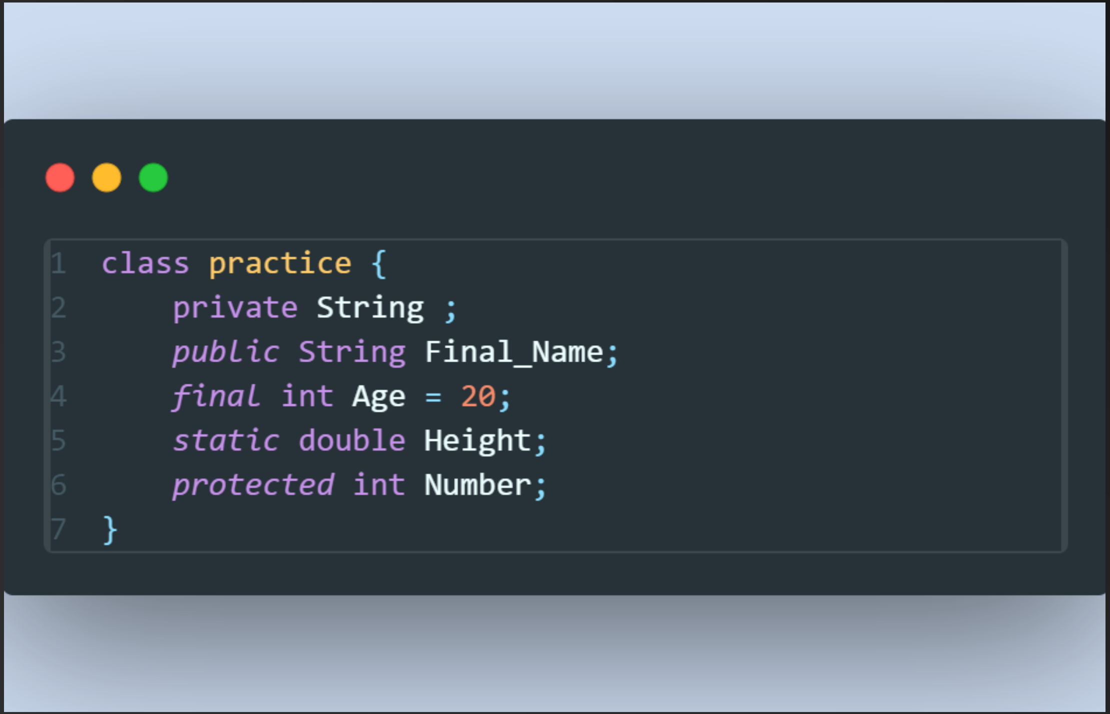
Class Attributes

- **Java class attributes** are the variables that are bound in a class

- A class attribute defines the state of the class during program execution

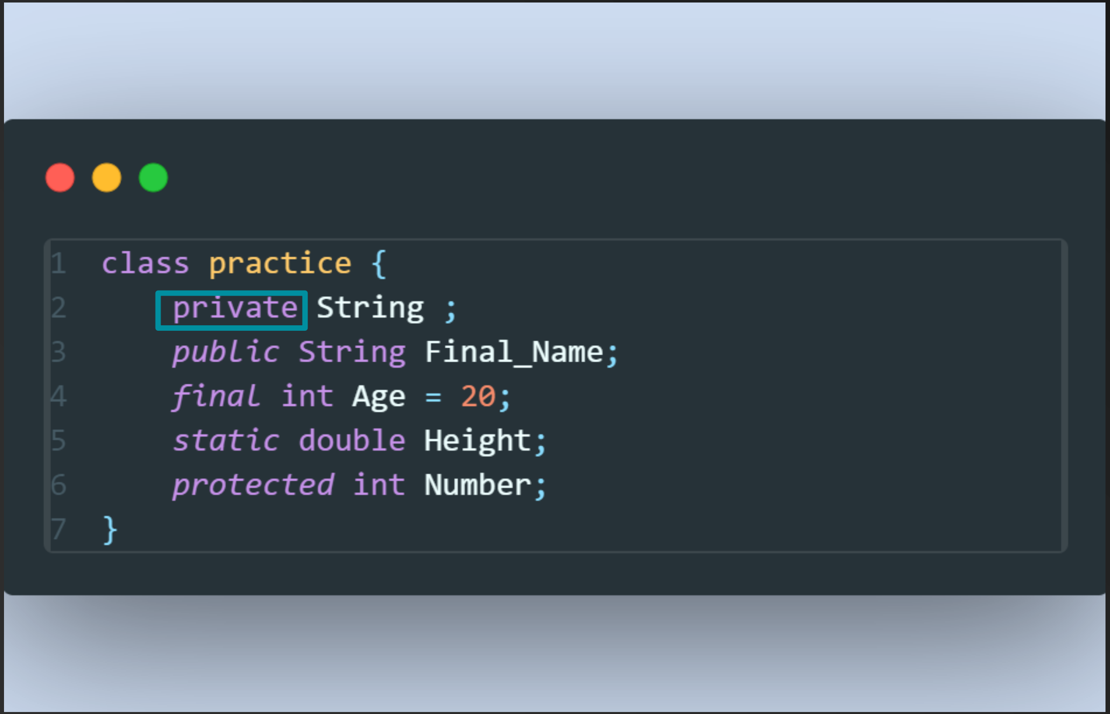
- A class attribute is accessible within class methods by default.

Lets See an Example!



```
class practice {
    private String ;
    public String Final_Name;
    final int Age = 20;
    static double Height;
    protected int Number;
}
```

Lets See an Example!



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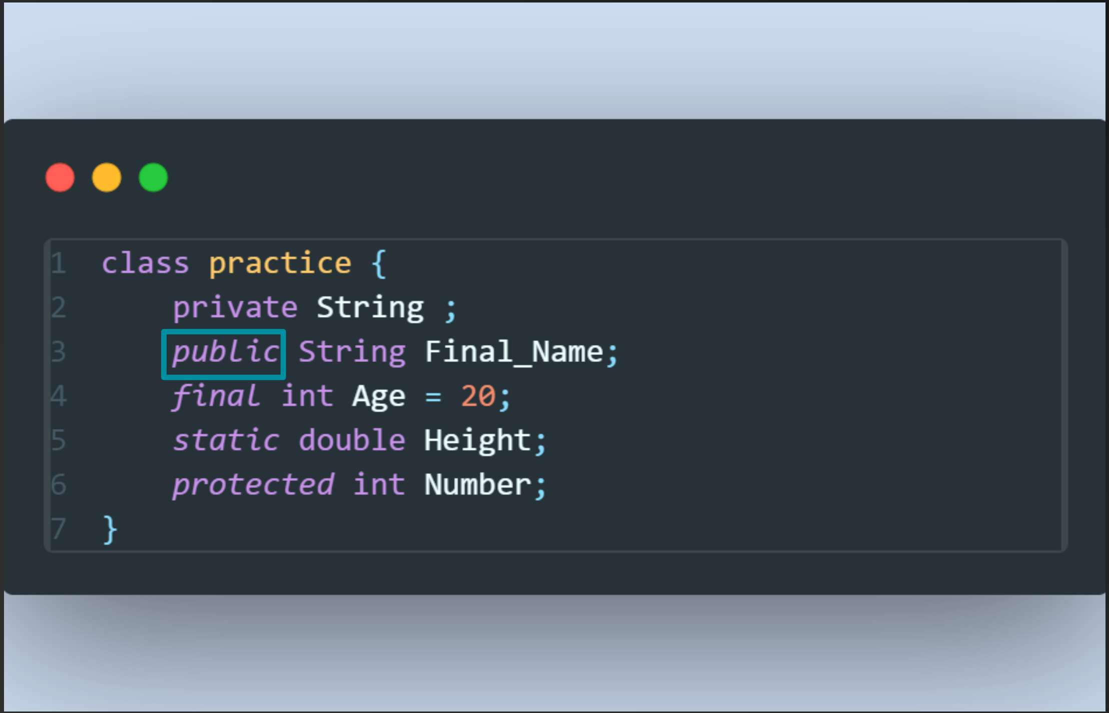

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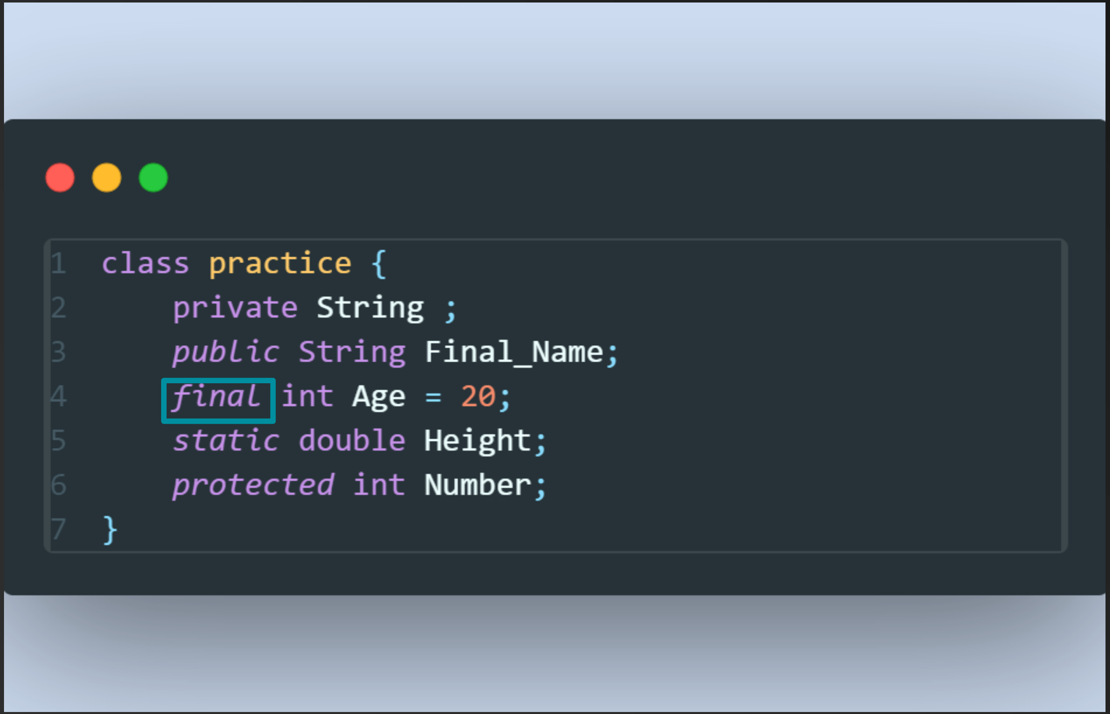

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    static double Height;
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}
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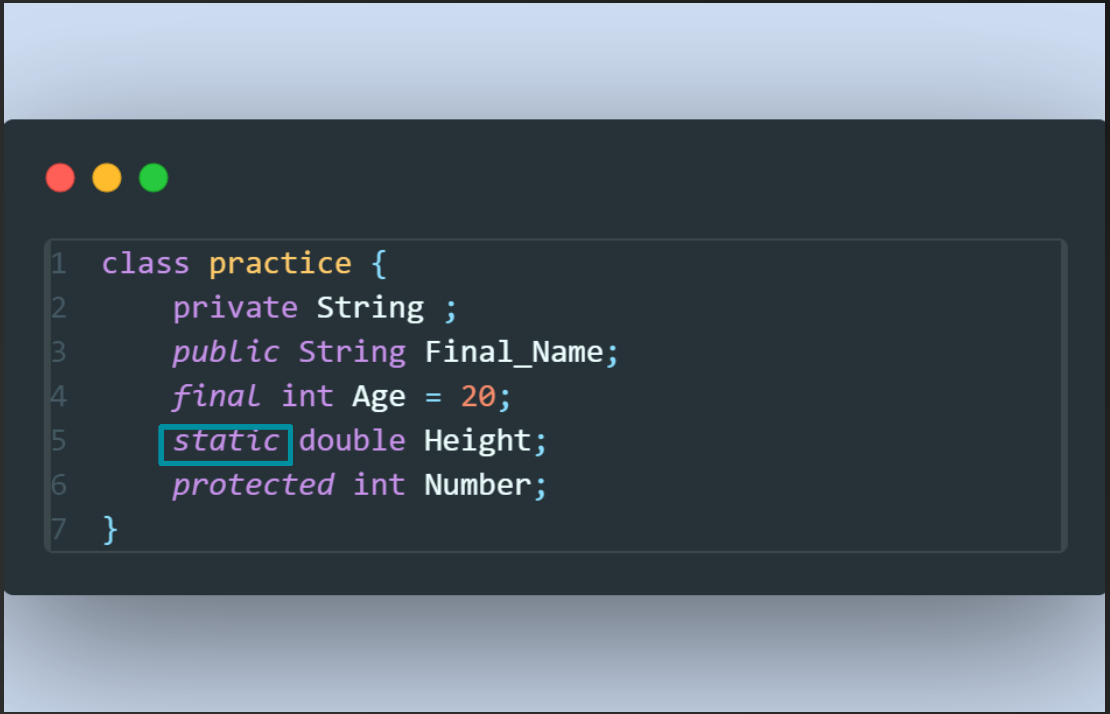

```
class practice {
    private String ;
    public String Final_Name;
    final int Age = 20;
    static double Height;
    protected int Number;
}
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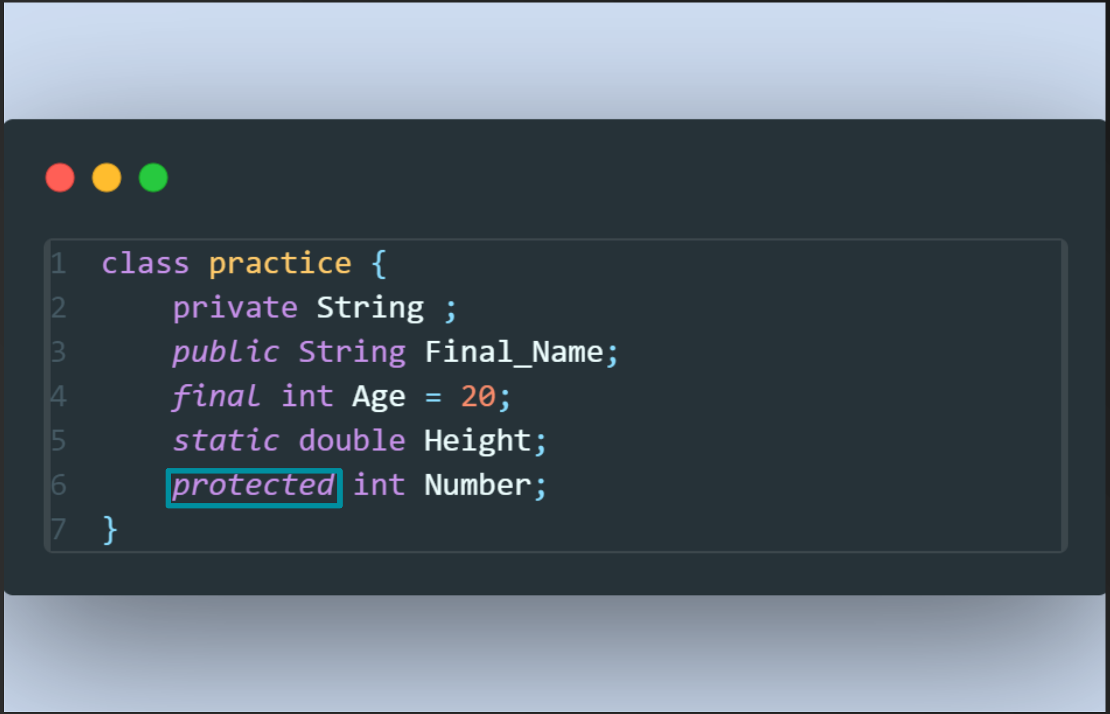


```
class practice {
    private String ;
    public String Final_Name;
    final int Age = 20;
    static double Height;
    protected int Number;
}
```

Access modifiers Review

Private

Protected

Public

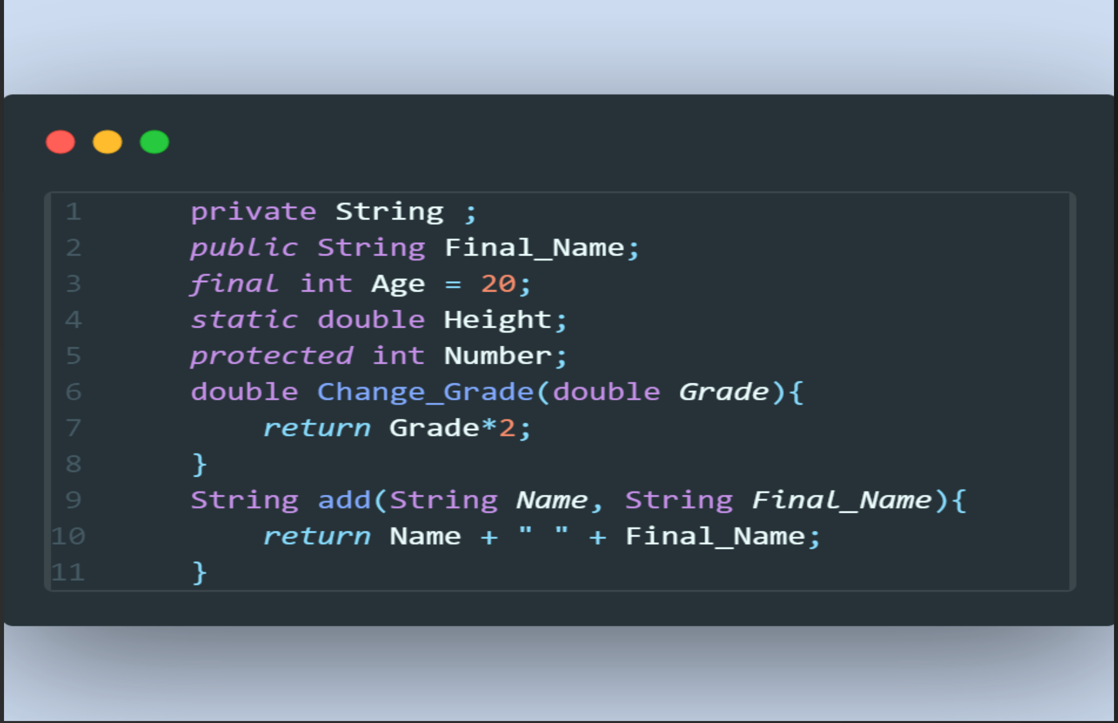
02

Methods

Class Methods

- A method in Java is a set of instructions that can be called for execution using the method name
- Getters and setters are used to protect your data

Lets See an Example!



```
private String ;
public String Final_Name;
final int Age = 20;
static double Height;
protected int Number;
double Change_Grade(double Grade){
    return Grade*2;
}
String add(String Name, String Final_Name){
    return Name + " " + Final_Name;
}
```

03

Constructors

Constructors

- A constructor is a special method in a class that initializes new objects.
- In most programming languages, the constructor has the same name as the class. (such as JAVA)

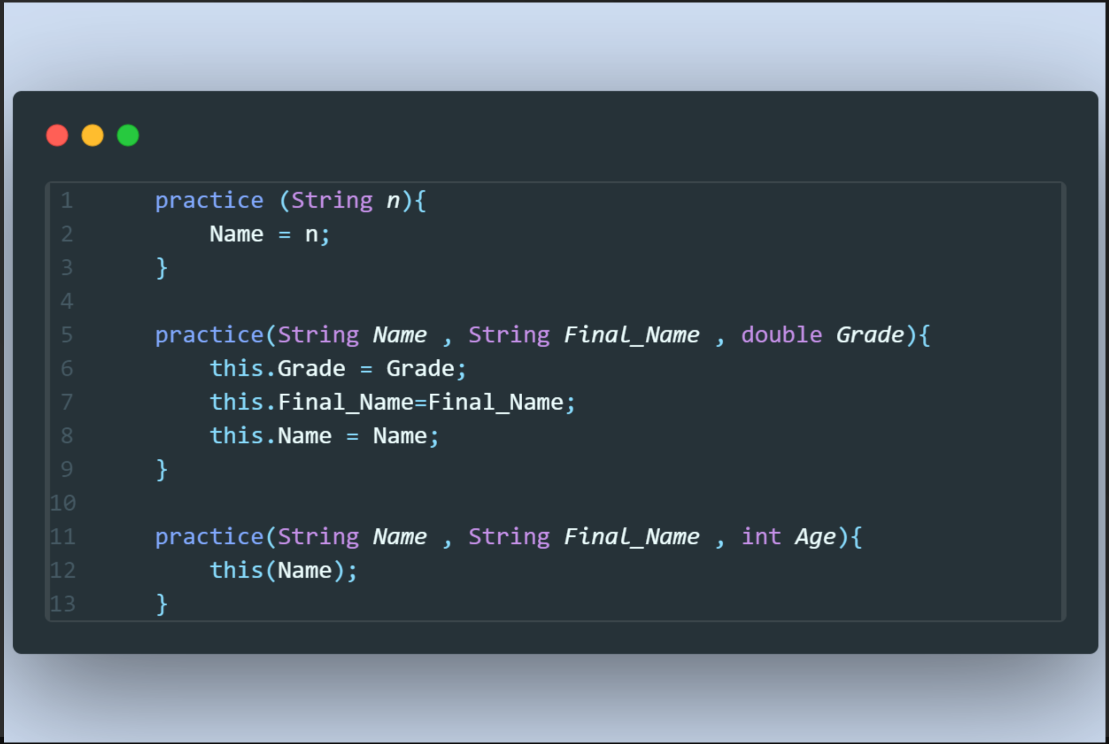
What are the types of Constructors?

No Arguements

Default

Parametrized

Lets See an Example!

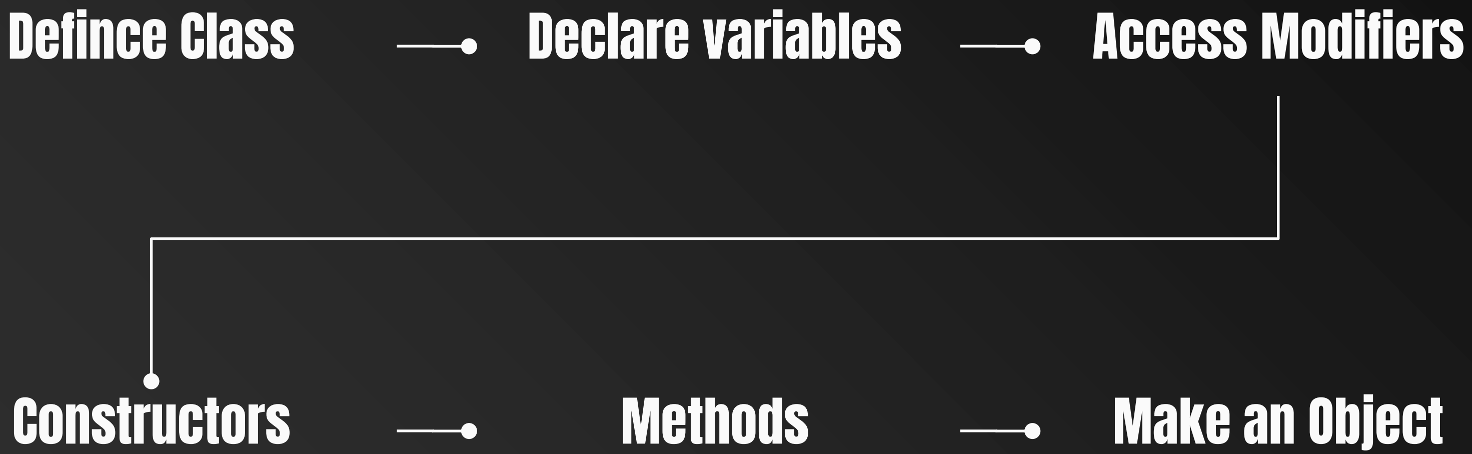


```
    practice (String n){
        Name = n;
    }

    practice(String Name , String Final_Name , double Grade){
        this.Grade = Grade;
        this.Final_Name=Final_Name;
        this.Name = Name;
    }

    practice(String Name , String Final_Name , int Age){
        this(Name);
    }
```

Sequence



Defince Class

Declare variables

Access Modifiers

Constructors

Methods

Make an Object

```
<div className="dropdown col-md-12">
  {/* level 1 */}
  <CSSTransition
  in={activeMenu === "main"}
  timeout={500}
  classNames="menu-primary"
  unmountOnExit
  onEnter={calcHeight}
  >
   <div className="menu">
    {categoryList.map((val) => {
     return (
      <DropdownItem
       leftIcon={val.icon}
       goToMenu={val.id}
       key={val.id}
       rightIcon={<RightArrowIcon />}
       >
       <h4>{val.name}</h4>
      </DropdownItem>
     );
    })}
    {linklv1List.map((val) => {
     return (
      <DropdownItem
       goToMenu="main"
       lefticon={<BoltIcon />}
       key={val.id}
       goHref={val.link}
       >
       {val.name}
      </DropdownItem>
     );
    })}
   </div>
  </CSSTransition>

  {/* level 2 */}
  <CSSTransition
   in={activeMenu === linkName}
   timeout={500}
   classNames="menu-secondary"
   unmountOnExit
   onEnter={calcHeight}
  >
   <div className="menu">
    <DropdownItem goToMenu="main" leftIcon={<ArrowIcon />}>
    <h4>Kembali</h4>
    </DropdownItem>

    {linkList.map((vallink) => {
     return (
      <DropdownItem
       lefticon={<BoltIcon />}
       goToMenu={linkName}
       goHref={vallink.link}
       >
       {vallink.name}
      </DropdownItem>
     );
    })}
   </div>
  </CSSTransition>
</div>v
```

```
"eslintConfig": {
  "extends": [
    "react-app",
    "react-app/"
  ]
},
```

```
{
position: fixed;
left: 0;
top: 0;
right: 0;
bottom: 0;

background-color: rgba(14, 7, 7, 0.514);
opacity: 0;
transition: all 0.3s ease-in-out;
pointer-events: none;

display: flex;
align-items: start;
justify-content: center;
}
},
"scripts": {
 "start": "react-scripts start",
 "build": "react-scripts build",
 "test": "react-scripts test",
 "eject": "react-scripts eject"
},
```

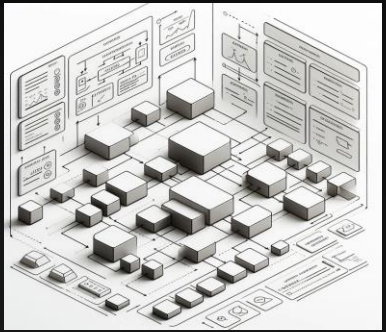
```
.App {
  text-align: center;
}
```

Uml Diagrams!

04

UML

UML

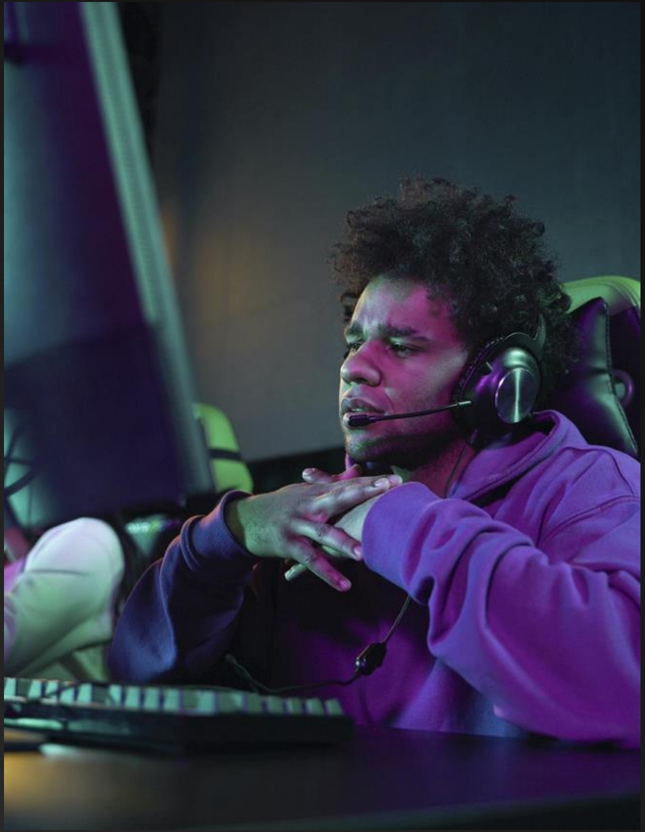


- The UML Class diagram is a graphical notation
- Is used to construct and visualize object oriented systems
- Is a type of static structure diagram
- Describes the structure of a system

Important Marks

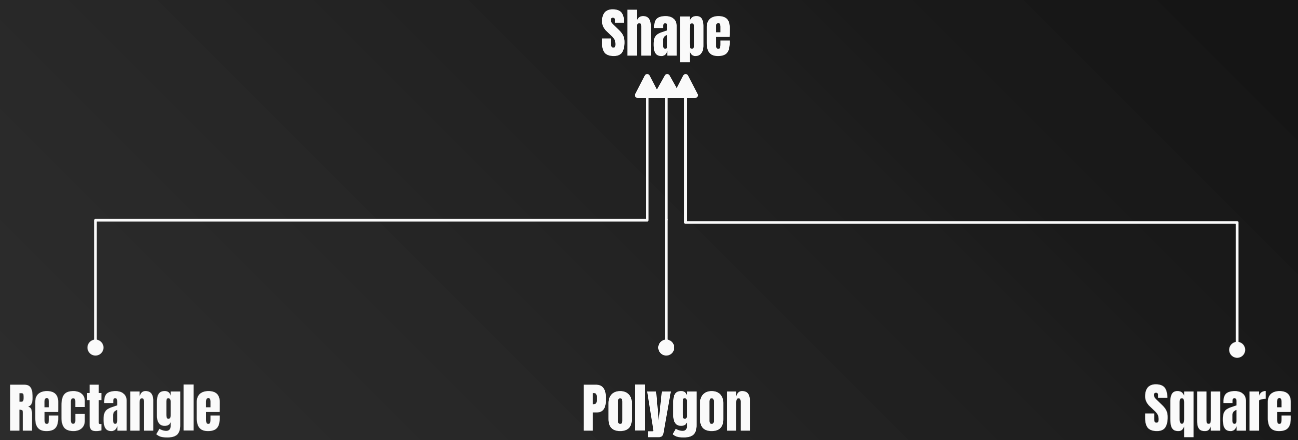
Public	Private	Protected
+	-	#
Package	Derived	Static
~	/	_

Why do we need UML Diagrams?



UML provides a standardized way to visualize the design of a system

Separate Targets



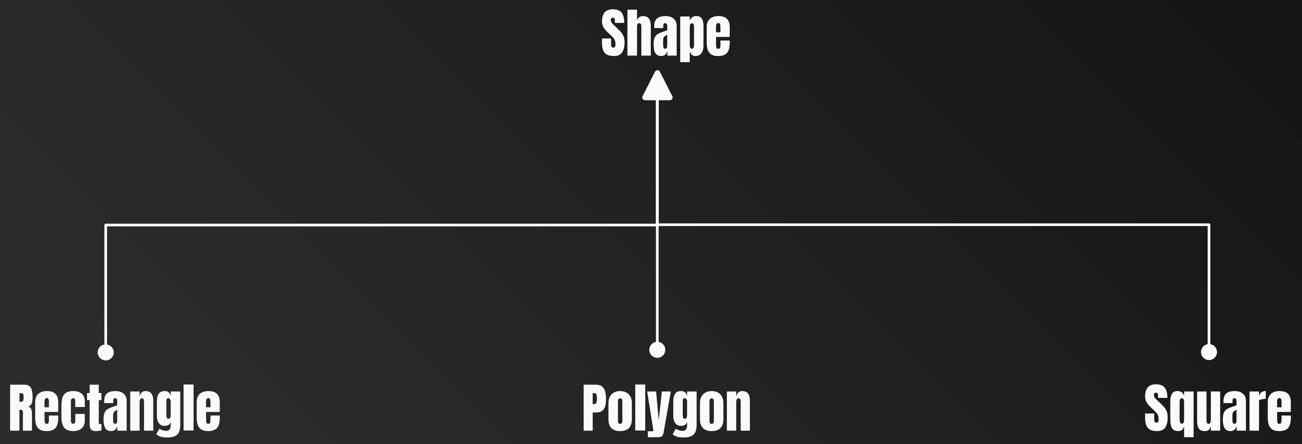
Shape

Rectangle

Polygon

Square

Shared Targets



Shape

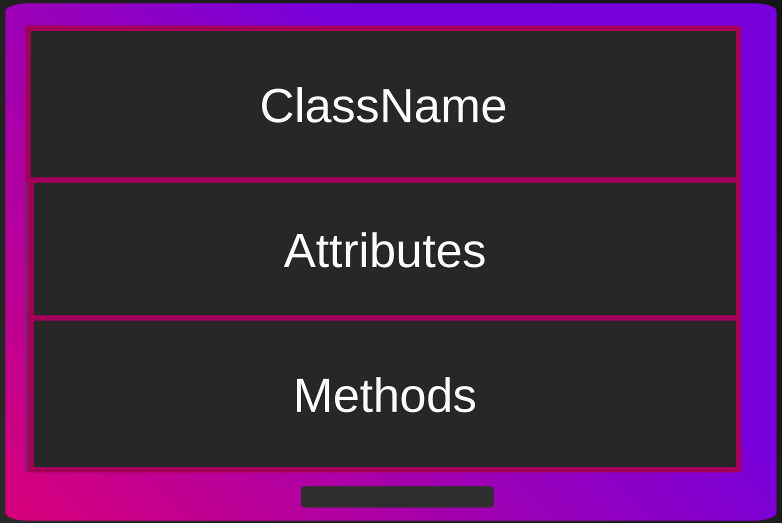
Rectangle

Polygon

Square

Info Shown

- Variable Names
- Access modifiers
- Methods and Their Arguements



ClassName

Attributes

Methods

Resources

https://www.w3schools.com/java/java_classes.asp
https://www.simplilearn.com/tutorials/java-tutorial/methods-in-java
https://www.javatpoint.com/java-constructor
https://www.programiz.com/java-programming/constructors

Any Questions?

Thanks!

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