Agenda:

Prototype & Registry

Prototype

- helps us to create copy of objects

```
Student st = new Student(. . . );
```

↳ copy of student.

private property in Student.

```
Student copySt = new Student();
copySt.name = St.name;
copySt.age = st.age;
```

1. Client side copy code is not reusable and it is also causing tight coupling

2. Cannot access private properties

3. Student 5
   ↓
   IntelligentStudent 3

intelligentS student?

```
copy(Student st) {
if (st instanceOf Student)
{ ____
  ____
}
elseif (st instanceOf IntelliSt)
}  ——
}  ——
```

Student
↓ ↑ copy();
IntelliStudent
↑ copy();

```
1)  class Student {

        // copy constructor
            or

        Student copy ( ) {
            Student copyObject = new Student();
            copyObj.name = this.name;
            copyObj.age = this.age;
              :
            return copyObject;
        }
    }
```

↓
Student st

st.copy()

```
Student st = new Student(.....);
Student stCopy = st.copy();
```

Give responsibility of creating a copy of an object to the object itself.

class something {

____
____
____
________ } 80% of properties having same value

____
________ } 20% of properties value changes.

}

Class Tree {

- color
- size
- pixelMap
- position (x,y)

}

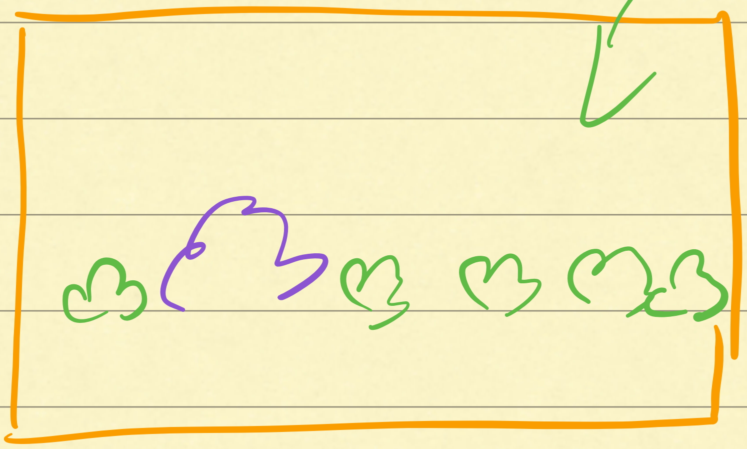
→ new Tree ( );

color = "green";

size = 10px;

pixelMap = fetched from somewhere & rendered.

take a lot of time



```
class SearchQuery {
    String url;
    String username;
    String password
    String SearchQuery;
}
```

```
class Enemy {
    ___        size;
    ___        void move();
    ___        pixelMap;
    ___
    ___
    ___
}
```

$$\begin{tikzcd} & {} \arrow[dl] \arrow[d] \arrow[dr] & \\ \text{Turtle} & \text{Duck} & \text{Porcupine} \end{tikzcd}$$

```
func() {
Enemy Turtle = new Enemy("Turtle", ...).
Enemy Duck = new Duck("Duck", ...);
Enemy Porcupine = new Porcupiene("Porc" ...);
}
```

```
func2( ) {



}
```

Registry:

```
    HashMap<String, Enemy> enemyRegistry;
 Enemy Duck = new Duck("Duck", ...);
  eReg.put("Duck", duck);


  duckCopy = eReg.get("Duck").copy();
  duckCopy.position = (10, 20);
```

Break Till 8:10