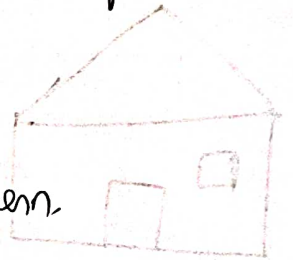


Builder Design Pattern

String Builder is totally based upon builder Design Pattern.

It is a Creational Design pattern, helps in creation of an object/entity.

Problem solved by ~~over~~ Builder Design Pattern.



```
public class Student {
```

```
    int rollNumber; → only mandatory field
```

```
    int age;
```

```
    String name;
```

```
    String fatherName;
```

```
    List<String> subjects
```

```
    String mobileNumber;
```

```
    public Student(int rollNumber, int age, String name) {
```

```
    }
```

```
    public Student(int rollNumber, String name, String fatherName) {
```

```
    }
```

```
    public Student(int rollNumber, String name, String motherName) {
```

```
    }
```

↪ this will give compilation error.

Builder design pattern creates Object Step by Step.

Example → lets say Creation of House Object. It cannot be just constructed



Each method returns a House Builder Object

addRoof() → Housebuilder Object is returned.

addWindow() → House builder Object is returned.

addDoor() → Housebuilder Object is returned

add Walls() → Housebuilder Object

House Object ← returns housebuilder.build() → returns the House Object

This House builder is an intermediate Object which returns us the concrete Object-

public class Student {

int rollNo;

int age;

String name;

public Student(StudentBuilder builder) {

this.rollNo = builder.rollNo

this.name = builder.name

}

public abstract class StudentBuilder {

int rollNo;

int age;

String name;

Disadvantage of Code Duplication

public StudentBuilder setRollNo(rollNo) {

this.rollNo = rollNo

}

public StudentBuilder setAge(age) {

this.age = age

}

}

}

pattern class Page 100

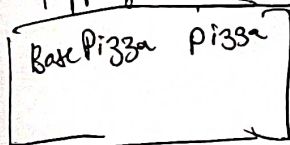
Difference between Decorator Pattern and Builder

Decorator

Base pizza → abstract class



(is-a) (has-a)
Toppings extends BasePizza



both
are
base
pizza

BasePizza pizza = new Margherita();

pizza = new Mushroom (pizza);

pizza = new Mushroom (new Cheese (pizza));

↳ Whatever this returns is still a
pizza only and can be modified
dynamically

(Structural Design Pattern)

Creating Complex Structures

Builder.

Pizza {

~~int~~ Base crust;

int cheeseSlice

int mushroom pieces

}

PizzaBuilder {

}



these are being added by
at the Pizza builder.

But when we do

PizzaBuilder - build();

we cannot modify it
any more

(Creational
Design Pattern.)