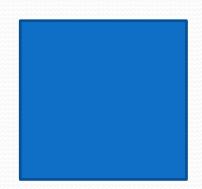
# Object Oriented Programming

- The next example corresponds to a class that models squares.
- The relevant data of the square entities (according to the context of the application) is color and side.
- The only operation (besides getters&setters) is calculate area.



#### Square

- color: String

- side: int

+ Square()

+ getColor(): String

+ getSide( ): int

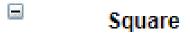
+ setColor(String): void

+ setSide(int): void

+ calculateArea(): int

Class definition:

```
public class Square {
}
```



- color: String

- side: int

+ Square()

+ getColor(): String

+ getSide( ): int

+ setColor(String): void

+ setSide(int): void

+ calculateArea(): int

Instance variables definition:

private String color;
private int side;

### Square

- color: String

- side: int

+ Square()

+ getColor(): String

+ getSide(): int

+ setColor(String): void

+ setSide(int): void

+ calculateArea(): int

#### Constructor definition:

```
public Square(){
    side = 0;
    color = "blue";
}
```

```
Square

    color: String

                                        Getters:
- side: int
                                         public String getColor() {
                                             return color;
+ Square()
+ getColor(): String
+ getSide( ): int
                                         public int getSide() {
+ setColor(String): void
                                             return side;
+ setSide(int): void
+ calculateArea( ): int
```

```
Square

    color: String

                                        Setters:
side: int
                                        public void setColor(String sColor) {
+ Square()
                                           color = sColor;
+ getColor(): String
+ getSide( ): int
+ setColor(String): void
                                          public void setSide(int sSide) {
+ setSide(int): void
                                            side = sSide;
+ calculateArea( ): int
```

```
Square

    color: String

- side: int
+ Square()
+ getColor(): String
+ getSide( ): int
+ setColor(String): void
+ setSide(int): void
+ calculateArea(): int
```

```
public int calculateArea() {
   return side * side;
}
```

## **All Together**



#### Square

- color: String
- side: int
- + Square()
- + getColor(): String
- + getSide(): int
- + setColor(String): void
- + setSide(int): void
- + calculateArea(): int



```
public class Square {
 private String color;
 private int side;
 public Square(){
    side = o;
    color = "blue";
 public String getColor( ) {
       return color;
 public int getSide( ) {
       return side;
 public void setColor(String sColor) {
     color = sColor;
 public void setSide(int sSide) {
     side = sSide;
 public int calculateArea() {
     return side * side;
```