

SINGLETON

PATTERN

<A/C_>

#VIMDIESELS

SARA CORREIA

DESIGN PATTERNS



CREATIONAL

STRUCTURAL

BEHAVIORAL

PROBLEMS IT SOLVES

ENSURE THAT A CLASS HAS JUST A SINGLE INSTANCE

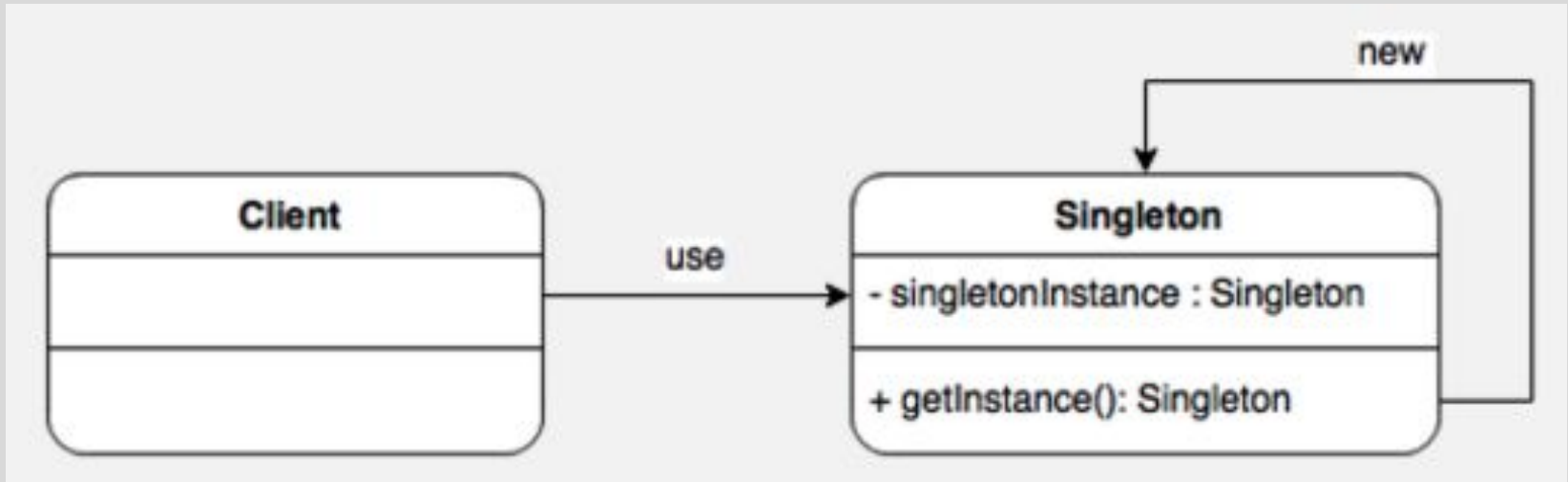
PROVIDE A GLOBAL ACCESS POINT TO THAT INSTANCE

IT'S FUCKING AWESOME!





STRUCTURE



TYPES OF IMPLEMENTATION



EAGER INITIALIZATION

STATIC BLOCK INITIALIZATION

LAZY INITIALIZATION

THREAD SAFE SINGLETON

BILL PUGH SINGLETON IMPLEMENTATION

USING REFLECTION TO DESTROY SINGLETON PATTERN

ENUM SINGLETON

SERIALIZATION AND SINGLETON

IMPLEMENTATION

```
public class Log {  
  
    private final String filename = "log.txt";  
    private static Log log = new Log();  
  
    private PrintWriter writer;  
  
    private Log(){ ... }  
  
    public static Log getInstance() {  
        return log;  
    }  
  
    public void logger(String log) {  
        this.writer.println("Log: " + log);  
    }  
}
```

```
public class CalorieTracker {  
  
    private User user;  
  
    public CalorieTracker(User user){  
        this.user = user;  
    }  
  
    public void login(){  
        //do login{ ... }  
  
        Log log = Log.getInstance();  
        log.logger("User <" + this.user.getUserName() + "> logged in.");  
    }  
  
    public void insertCalories(FoodType foodType, int calories){ ... }  
}
```


IMPLEMENTATION

```
public class Main {  
  
    public static void main(String[] args) {  
  
        Log log = Log.getInstance();  
        log.logger("Application started.");  
  
        User user = new User("God of Thunder");  
  
        CalorieTracker calorieTracker = new CalorieTracker(user);  
        calorieTracker.login();  
        calorieTracker.insertCalories(FoodType.MANGO, 60);  
        calorieTracker.insertCalories(FoodType.APPLE, 45);  
  
        log.logger("Application closed.");  
    }  
}
```



log.txt	
1	Log: Application started.
2	Log: User <God of Thunder> logged in.
3	Log: <God of Thunder> ingested a whole: MANGO. Number of calories: 60.
4	Log: <God of Thunder> ingested a whole: APPLE. Number of calories: 45.
5	Log: Application closed.
6	

ADVANTAGES

THE SINGLE INSTANCE IS
ACCESSIBLE BY DIFFERENT PARTS
OF THE PROGRAM, OR DIFFERENT
CLIENTS

CONTROL ACCESS TO RESOURCES,
SUCH AS DATABASES CONNECTIONS
OR SOCKETS - ONE CONNECTION OR
THREAD AT A TIME

OFFICE

PEACE OUT !