

TP 13

Nama: Mohammad Fathurrohman

Nim: 2211104070

Kelas: SE 0603

Design_Pattern_Implementation

Source Code:

Observer.js

```
1 class Subject {
2   constructor() {
3     this.observers = [];
4     this.state = null;
5   }
6
7   attach(observer) {
8     this.observers.push(observer);
9   }
10
11   detach(observer) {
12     this.observers = this.observers.filter((
13     obs) => obs !== observer);
14   }
15
16   notify() {
17     this.observers.forEach((observer) =>
18     observer.update(this));
19   }
20
21   setState(newState) {
22     this.state = newState;
23     this.notify();
24   }
25
26   getState() {
27     return this.state;
28   }
29 }
30
31 class ConcreteObserver {
32   constructor(name) {
33     this.name = name;
34   }
35
36   update(subject) {
37     console.log(
38     `${this.name}
39     menerima update: State sekarang = ${subject.
40     getState()}`
41     );
42   }
43 }
```

Main.js

```

1  const { Subject, ConcreteObserver } = require(
    "./observer");
2
3  const subject = new Subject();
4
5  const observer1 = new ConcreteObserver(
    "Observer 1");
6  const observer2 = new ConcreteObserver(
    "Observer 2");
7
8  subject.attach(observer1);
9  subject.attach(observer2);
10
11 subject.setState("Aktif");
12
13 subject.detach(observer1);
14 subject.setState("Tidak Aktif");
15

```

Output:

```

PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS
PS D:\KPL_Mohammad Fathurrohman_2211104070_SE0603> cd 13_Design_Pattern_Implementation
PS D:\KPL_Mohammad Fathurrohman_2211104070_SE0603\13_Design_Pattern_Implementation> cd TP
PS D:\KPL_Mohammad Fathurrohman_2211104070_SE0603\13_Design_Pattern_Implementation\TP> node main.js
Observer 1 menerima update: State sekarang = Aktif
Observer 2 menerima update: State sekarang = Aktif
Observer 2 menerima update: State sekarang = Tidak Aktif
PS D:\KPL_Mohammad Fathurrohman_2211104070_SE0603\13_Design_Pattern_Implementation\TP>

```

Penjelasan:

- **Subject:**
Objek utama yang menyimpan **state** dan daftar **observer**.
Saat state berubah (setState()), semua observer diberi tahu lewat notify().
- **ConcreteObserver:**
Objek yang **menanggapi perubahan** dari Subject dengan cara menampilkan state baru ke konsol.
- **Proses Utama:**
 1. Dua observer (observer1, observer2) didaftarkan ke subject.
 2. Saat state diubah jadi "Aktif", kedua observer menerima update dan mencetaknya.
 3. Lalu observer1 dilepas (detach).

4. Saat state diubah jadi "Tidak Aktif", hanya observer2 yang menerima update.