Home Designer

1.Statement of Work:

        At the present time, Every person needs a house to survive. Therefore, The Building Contractors build a new house or apartment on the purchased plot. After that, They are looking for a householder to sell buildings .But, These things do not end with this. Then, People are trying to decorate their own home. They visit many stores and adapt their favorite items to their new home. Instead of this, The house can be sold according to the selected features by showing people a catalog. As a result of this, A better life center can be offered for people. Even, It can be classification according to certain similarities of house. Here are some conditions like number of floors, near or away from city, total square meter of the house. In shortly, I think that the contractors work can be compatible with the software world. In this way, people can decide to buy the new apartment or house before the construction of the house begins.

2.Design Patterns:

        In this study, I preferred to use decorator pattern and strategy pattern to solving the problem. These patterns may useful solution for it. Well, Why?. Because, I used a decorator pattern so people can make changes interior and exterior the house or home. People may want to salon set, good lampshade ,television or garage ,pool, gym center etc. The decorator pattern ,attaches additional responsibilities to an object dynamically. Decorators provide a flexible alternative to subclassing for extending functionally. Secondly, I used a strategy pattern because that people can change according to their physical properties. For example, Near or Away from city center, Number of floors, sun-facing facade etc. That pattern defines a family of algorithms, encapsulate each one, and makes them interchangeable. Strategy lets the algorithm vary independently from clients that use it. But clients are the contractor, not the person who buys the customer.

3.UML:

        Uml diagram is attached. or

        Link: https://drive.google.com/open?id=1t6LGF49NMlu3HGpsronunsjZsse179aQ

4.Research:

I researched free and open source floor plan and arrange furniture freely, I saw a lot of projects on the internet about of this. But, I did not have the opportunity to examine these projects closely. These projects usually works with programs installed on the computer. So, I need to do a more detailed and comprehensive research.

5.Implementation:

Github : https://github.com/SirriBakirtan/DesignPatternExamples

Testing Class

```java
import static java.lang.Math.round;

public class LetsTest {
    public static void main(String[] args) {
        Home home = new OnePlusOneApartment(new NearCityCenter());
        ((OnePlusOneApartment) home).setPrice(home.cost());
        home = new Garage(home);
        home = new Pool(home);
        home = new SalonSet(home);
        System.out.println(home.getDescription());
        System.out.println("The amount you have to pay : " + round(home.cost())+",99 Turkish Lira");
    }
}
```

Sırrı Bakırtan.