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Facade Design Pattern Tutorial

Posted by Derek Banas on Sep 29, 2012 in Java Video Tutorial | 15 comments



Welcome to may Facade Design Pattern Tutorial! The Facade pattern is extremely easy to understand. Chances are you have used it already and just didn't know it.

The Facade pattern basically says that you should simplify your methods so that much of what is done is in the background. In technical terms you should decouple the client from the sub components needed to perform an operation.

All of the code that follows the video will fill you in on anything you don't catch in the video.

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Code from the Video

WELCOMETOBANK.JAVA

```
01
   public class WelcomeToBank{
02
03
        public WelcomeToBank() {
04
            System.out.println("Welcome to ABC Bank");
05
            System.out.println("We are happy to give you your money if we can
06
   find it\n");
07
80
        }
09
10
11 }
```

ACCOUNTNUMBERCHECK.JAVA

```
01
   public class AccountNumberCheck{
02
03
        private int accountNumber = 12345678;
04
05
        public int getAccountNumber() { return accountNumber; }
06
        public boolean accountActive(int acctNumToCheck){
07
80
09
            if(acctNumToCheck == getAccountNumber()) {
10
11
                return true;
```

SECURITYCODECHECK.JAVA

```
01
   public class SecurityCodeCheck {
02
03
        private int securityCode = 1234;
04
        public int getSecurityCode() { return securityCode; }
05
06
07
        public boolean isCodeCorrect(int secCodeToCheck){
80
            if(secCodeToCheck == getSecurityCode()) {
09
10
11
                return true;
12
13
            } else {
14
15
                return false;
16
            }
17
18
19
        }
20
21 }
```

FUNDSCHECK.JAVA

```
01
   public class FundsCheck {
02
03
       private double cashInAccount = 1000.00;
04
05
       public double getCashInAccount() { return cashInAccount; }
06
07
       public void decreaseCashInAccount(double cashWithdrawn) {
   cashInAccount -= cashWithdrawn; }
80
09
        public void increaseCashInAccount(double cashDeposited) {
   cashInAccount += cashDeposited; }
10
       public boolean haveEnoughMoney(double cashToWithdrawal) {
11
12
13
            if(cashToWithdrawal > getCashInAccount()) {
14
15
                System.out.println("Error: You don't have enough money");
```

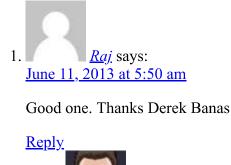
```
System.out.println("Current Balance: " + getCashInAccount());
   16
   17
                   return false;
   18
   19
   20
               } else {
   21
   22
                   decreaseCashInAccount(cashToWithdrawal);
   23
                   System.out.println("Withdrawal Complete: Current Balance is "
   24
       + getCashInAccount());
   25
   26
                   return true;
   27
   28
               }
   29
   30
           }
   31
   32
           public void makeDeposit(double cashToDeposit) {
   33
               increaseCashInAccount(cashToDeposit);
   34
   35
   36
               System.out.println("Deposit Complete: Current Balance is " +
       getCashInAccount());
   37
           }
   38
   39
   40 }
BANKACCOUNTFACADE.JAVA
   01 // The Facade Design Pattern decouples or separates the client
   02 // from all of the sub components
```

```
03
   // The Facades aim is to simplify interfaces so you don't have
04
   // to worry about what is going on under the hood
05
96
   public class BankAccountFacade {
07
80
09
       private int accountNumber;
10
       private int securityCode;
11
12
       AccountNumberCheck acctChecker;
13
       SecurityCodeCheck codeChecker;
       FundsCheck fundChecker;
14
15
16
       WelcomeToBank bankWelcome;
17
       public BankAccountFacade(int newAcctNum, int newSecCode){
18
19
20
            accountNumber = newAcctNum;
21
            securityCode = newSecCode;
22
23
            bankWelcome = new WelcomeToBank();
24
```

```
25
               acctChecker = new AccountNumberCheck();
   26
               codeChecker = new SecurityCodeCheck();
   27
               fundChecker = new FundsCheck();
   28
   29
           }
   30
   31
           public int getAccountNumber() { return accountNumber; }
   32
           public int getSecurityCode() { return securityCode; }
   33
   34
   35
           public void withdrawCash(double cashToGet){
   36
   37
   38
               if(acctChecker.accountActive(getAccountNumber()) &&
   39
                       codeChecker.isCodeCorrect(getSecurityCode()) &&
                       fundChecker.haveEnoughMoney(cashToGet)) {
   40
   41
   42
                            System.out.println("Transaction Complete\n");
   43
   44
                       } else {
   45
                            System.out.println("Transaction Failed\n");
   46
   47
                       }
   48
   49
           }
   50
   51
   52
           public void depositCash(double cashToDeposit){
   53
   54
   55
               if(acctChecker.accountActive(getAccountNumber()) &&
   56
                       codeChecker.isCodeCorrect(getSecurityCode())) {
   57
   58
                            fundChecker.makeDeposit(cashToDeposit);
   59
                            System.out.println("Transaction Complete\n");
   60
   61
   62
                       } else {
   63
   64
                            System.out.println("Transaction Failed\n");
   65
                       }
   66
   67
   68
           }
   69
   70 }
TESTBANKACCOUNT.JAVA
```

```
public class TestBankAccount {
01
02
03
       public static void main(String[] args){
04
05
            BankAccountFacade accessingBank = new BankAccountFacade(12345678,
```

15 Responses to "Facade Design Pattern Tutorial"



<u>Derek Banas</u> says: June 11, 2013 at 6:22 pm

You're very welcome 🙂

<u>Reply</u>

2. *Roandmy* says: June 12, 2013 at 9:35 am

Thanks.! 🙂

<u>Reply</u>

Derek Banas says: June 14, 2013 at 7:09 am

You're very welcome $\stackrel{\cdot \cdot \cdot}{\circ}$

3. Anthony Trần says:
September 11, 2013 at 12:55 am

<u>Reply</u>

I really admire and appreciate your work but i have a question: You said facade uses a simplified interface to decouples or separates the client from all the sub components. But i don't see any interface in the code. Why is that?

Reply



Derek Banas says:

September 11, 2013 at 5:29 pm

Thank you Usar't referring to a java interface, but instead a general interface like a GUI. I should have used a different word. Sorry about that.

Reply



Abhishek says:

October 2, 2013 at 11:28 am

Very nicely explained. Thanks Derek 🙂

<u>Reply</u>



Derek Banas says:

October 3, 2013 at 10:25 am

You're very welcome U Thank you

Reply



j j says:

December 9, 2013 at 5:13 pm

You made it very clear with simple examples.

now I linked Facade – Withdraw money, Command – remote etc. easy to understand $\stackrel{\cdot}{\cup}$ thanks a lot Derek

<u>Reply</u>



Derek Banas says:

December 10, 2013 at 6:11 pm

Reply

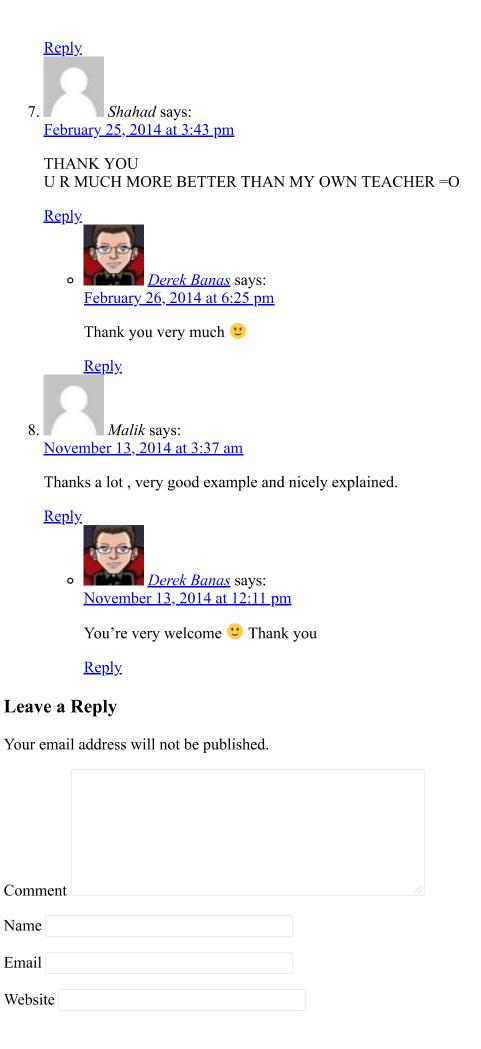


<u>narayana</u> says:

December 15, 2013 at 4:06 pm

As you said, we use this pattern many places in our code, but never realized it is Façade design pattern.

Thanks for making it clear.



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