DESIGN PATTERN - FRONT CONTROLLER PATTERN

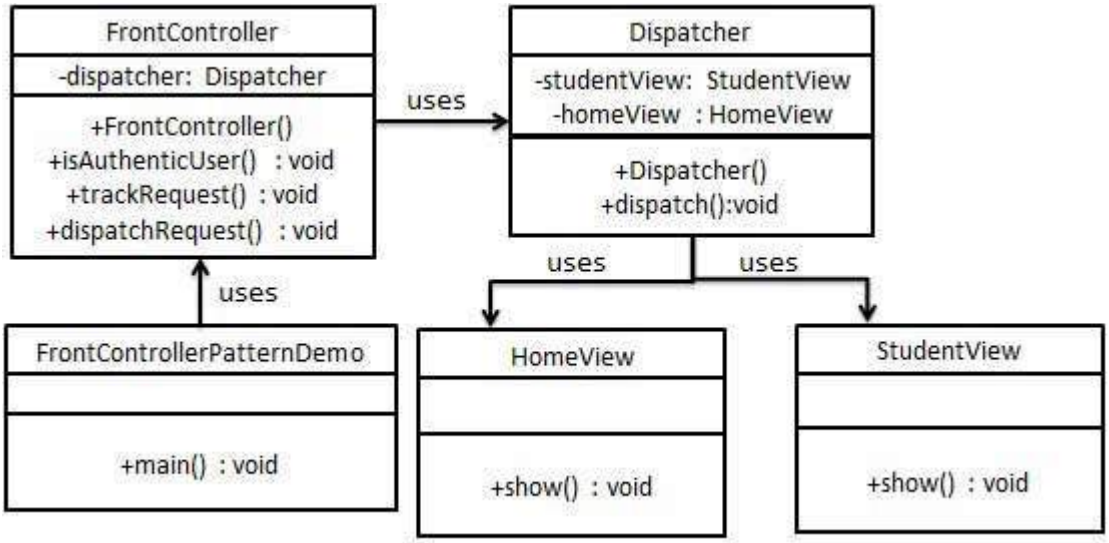
The front controller design pattern is used to provide a centralized request handling mechanism so that all requests will be handled by a single handler. This handler can do the authentication/ authorization/ logging or tracking of request and then pass the requests to corresponding handlers. Following are the entities of this type of design pattern.

- **Front Controller** - Single handler for all kinds of requests coming to the application *either web based / desktop based*.
- **Dispatcher** - Front Controller may use a dispatcher object which can dispatch the request to corresponding specific handler.
- **View** - Views are the object for which the requests are made.

Implementation

We are going to create a *FrontController* and *Dispatcher* to act as Front Controller and Dispatcher correspondingly. *HomeView* and *StudentView* represent various views for which requests can come to front controller.

FrontControllerPatternDemo, our demo class, will use *FrontController* to demonstrate Front Controller Design Pattern.



Step 1

Create Views.

HomeView.java

```
public class HomeView {
   public void show(){
      System.out.println("Displaying Home Page");
   }
}
```

StudentView.java

```
public class StudentView {
   public void show(){
      System.out.println("Displaying Student Page");
   }
}
```

Step 2

Create Dispatcher.

Dispatcher.java

```
public class Dispatcher {
   private StudentView studentView;
   private HomeView homeView;

   public Dispatcher(){
      studentView = new StudentView();
      homeView = new HomeView();
   }

   public void dispatch(String request){
      if(request.equalsIgnoreCase("STUDENT")){
         studentView.show();
      }
      else{
         homeView.show();
      }
   }
}
```

Step 3

Create FrontController

FrontController.java

```
public class FrontController {

   private Dispatcher dispatcher;

   public FrontController(){
      dispatcher = new Dispatcher();
   }

   private boolean isAuthenticUser(){
      System.out.println("User is authenticated successfully.");
      return true;
   }

   private void trackRequest(String request){
      System.out.println("Page requested: " + request);
   }

   public void dispatchRequest(String request){
      //log each request
      trackRequest(request);

      //authenticate the user
      if(isAuthenticUser()){
         dispatcher.dispatch(request);
      }
   }
}
```

Step 4

Use the *FrontController* to demonstrate Front Controller Design Pattern.

FrontControllerPatternDemo.java

```
public class FrontControllerPatternDemo {
   public static void main(String[] args) {
```

```
      FrontController frontController = new FrontController();
      frontController.dispatchRequest("HOME");
      frontController.dispatchRequest("STUDENT");
   }
}
```

Step 5

Verify the output.

```
Page requested: HOME
User is authenticated successfully.
Displaying Home Page
Page requested: STUDENT
User is authenticated successfully.
Displaying Student Page
```