// Subsystem classes

class Amplifier {

public void on() { System.out.println("Amplifier on"); }

public void off() { System.out.println("Amplifier off"); }

public void setVolume(int level) { System.out.println("Setting volume to " + level); }

}

class Tuner {

public void on() { System.out.println("Tuner on"); }

public void off() { System.out.println("Tuner off"); }

}

class DVDPlayer {

public void on() { System.out.println("DVD Player on"); }

public void off() { System.out.println("DVD Player off"); }

public void play(String movie) { System.out.println("Playing " + movie); }

}

class Projector {

public void on() { System.out.println("Projector on"); }

public void off() { System.out.println("Projector off"); }

}

class TheaterLights {

public void dim(int level) { System.out.println("Dimming lights to " + level + "%"); }

}

class Screen {

public void down() { System.out.println("Screen down"); }

public void up() { System.out.println("Screen up"); }

}

class PopcornPopper {

public void on() { System.out.println("Popcorn Popper on"); }

public void pop() { System.out.println("Popping popcorn"); }

}

// Facade class

class HomeTheaterFacade {

private Amplifier amp;

private Tuner tuner;

private DVDPlayer dvd;

private Projector projector;

private TheaterLights lights;

private Screen screen;

private PopcornPopper popper;

public HomeTheaterFacade(Amplifier amp, Tuner tuner, DVDPlayer dvd, Projector projector,

TheaterLights lights, Screen screen, PopcornPopper popper) {

this.amp = amp;

this.tuner = tuner;

this.dvd = dvd;

this.projector = projector;

this.lights = lights;

this.screen = screen;

this.popper = popper;

}

public void watchMovie(String movie) {

System.out.println("Get ready to watch a movie...");

popper.on();

popper.pop();

lights.dim(10);

screen.down();

projector.on();

amp.on();

amp.setVolume(5);

dvd.on();

dvd.play(movie);

}

public void endMovie() {

System.out.println("Shutting movie theater down...");

popper.off();

lights.dim(100);

screen.up();

projector.off();

amp.off();

dvd.off();

}

}

// Client code to test Facade Pattern

public class HomeTheaterTestDrive {

public static void main(String[] args) {

Amplifier amp = new Amplifier();

Tuner tuner = new Tuner();

DVDPlayer dvd = new DVDPlayer();

Projector projector = new Projector();

TheaterLights lights = new TheaterLights();

Screen screen = new Screen();

PopcornPopper popper = new PopcornPopper();

HomeTheaterFacade homeTheater = new HomeTheaterFacade(amp, tuner, dvd, projector, lights, screen, popper);

homeTheater.watchMovie("Inception");

homeTheater.endMovie();

}

}