**package** nz.ac.ara.lancem.exercises;

// the generic MODEL of the VIEW

**public** **interface** View {

// allow the user to input a string

// prompt is optional

**public** String get();

**public** String get(String prompt);

// display to the user ANYTHING

**public** <T> **void** say(T message);

// initialize the user interface

**public** **void** start();

// close down the user interface

**public** **void** stop();

}

**package** nz.ac.ara.lancem.exercises;

**import** java.util.Scanner;

**public** **class** ConsoleView **implements** View {

Scanner in = **new** Scanner(System.***in***);

@Override

**public** String get( String prompt ) {

**this**.say( prompt + ">");

String input;

System.***out***.println(">");

input = in.nextLine();

**return** input;

}

@Override

**public** String get() {

**this**.say( ">");

String input;

input = in.nextLine();

**return** input;

}

@Override

**public** <T> **void** say(T message) {

System.***out***.println(message);

}

@Override

**public** **void** start() {

System.***out***.println("STARTING");

}

@Override

**public** **void** stop() {

System.***out***.println("BYE!");

}

}

**package** nz.ac.ara.lancem.exercises;

**public** **abstract** **class** ExerciseController {

**protected** View myView;

**private** String data;

// the VIEW is injected

**public** ExerciseController( View theView ){

**this**.myView = theView;

}

// must be implemented differently for each exercise

**abstract** **protected** **void** doStuff();

// general method so can call many exercises

**public** **void** go() {

**this**.myView.start();

**this**.doStuff();

**this**.myView.stop();

}

}

**package** nz.ac.ara.lancem.exercises;

**public** **class** Ex0 {

**public** String greet( String name ) {

**return** "Hello " + name;

}

}

**package** nz.ac.ara.lancem.exercises;

**public** **class** Ex1 {

**public** String checkMark ( **int** mark ){

String result = "FAIL";

**if** (mark >= 50) {

result = "PASS";

}

**return** result;

}

}

**package** nz.ac.ara.lancem.exercises;

**public** **class** Ex1Controller **extends** ExerciseController {

Ex1 ex1 = **new** Ex1();

**public** Ex1Controller(View theView) {

**super**(theView);

}

@Override

**protected** **void** doStuff() {

**for** ( **int** i = 1; i <= 100; i++) {

**this**.myView.say( "" + i + " = " + ex1.checkMark( i ) );

}

}

}

**package** nz.ac.ara.lancem.exercises;

**public** **class** Main {

**public** **static** **void** main(String[] args) {

View view = **new** ConsoleView();

ExerciseController ex0 = **new** Ex0Controller( view );

ex0.go();

ex0.go();

ex0.go();

ExerciseController ex1 = **new** Ex1Controller( view );

ex1.go();

}

}