

More Sophisticated Behaviour

Technical Support System V1.0



Produced Dr. Siobhán Drohan
by: Mr. Colm Dunphy
 Mr. Diarmuid O'Connor
 Dr. Frank Walsh



Waterford Institute of Technology
INSTITIÚID TEICNEOLAÍOCHTA PHORT LÁIRGE

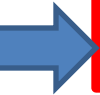
Department of Computing and Mathematics
<http://www.wit.ie/>

Lectures and Labs

- The Tech Support System lectures and labs are based on examples in Chapter 5 of:
 - Objects First with Java
- A Practical Introduction using BlueJ,
© David J. Barnes, Michael Kölling



Topic List



1. Recap of Library Classes (**Java's API**).

2. **Interface Vs Implementation.**

3. Technical Support System **V1**:

– Three Classes:

1. **InputReader** class

2. **Responder** class

3. **SupportSystem** class

The Java class library (**API**)

- Thousands of **classes**.
- Tens of thousands of **methods**.
- Many useful classes that make life much easier.
- A competent Java programmer **must be able to work with the libraries**.
- Documentation of the Java libraries is in HTML format (generated using **javadoc** comments).
- Readable in a web browser.
- **API**: *Application Programmers' Interface*

Using library classes

- Classes from the library must be imported
 - using an ***import*** statement

```
import javax.swing.*;
```

```
import javax.swing.JOptionPane;
```

- exception are classes from *java.lang*
- They can then be used like classes from the current project.

Working with the library

You should:

- know some important classes by name.
- know how to find out about other classes.

Remember:

- We only need to know the **interface**, not the **implementation**.
- **API** contains the **interface** description for all library classes.

Topic List

1. Recap of Library Classes (**Java's API**).



2. Interface Vs Implementation.

3. Technical Support System **V1**:

- Overview of the System

- Three Classes:

1. **InputReader** class

2. **Responder** class

3. **SupportSystem** class

Interface vs implementation

The documentation includes:

- Class name;
- Class description;
- List of constructors and methods
- Return values and parameters for constructors and methods
- Description of the purpose of each constructor and method



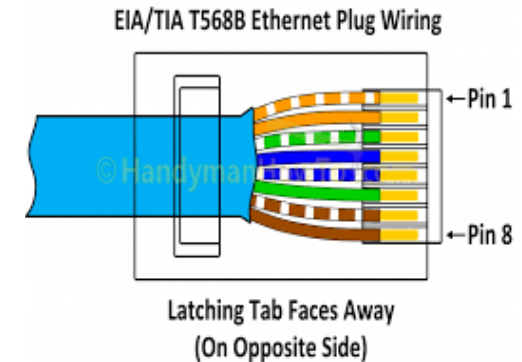
 the **interface** of the class

Interface vs implementation

*The documentation **does not** include*

- private fields
 - (most fields are private)
- private methods
- the bodies
 - (source code) for each method

➡ the **implementation** of the class



Cat5e Wire Diagram for T568B (Straight Through Cable)				
RJ45 Pin #	Wire Color (T568A)	Wire Diagram (T568A)	10Base-T Signal 100Base-TX Signal	1000Base-T Signal
1	White/Orange		Transmit+	BI_DA+
2	Orange		Transmit-	BI_DA-
3	White/Green		Receive+	BI_DB+
4	Blue		Unused	BI_DC+
5	White/Blue		Unused	BI_DC-
6	Green		Receive-	BI_DB-
7	White/Brown		Unused	BI_DD+
8	Brown		Unused	BI_DD-

Topic List

1. Recap of Library Classes (**Java's API**).

2. Interface Vs Implementation.

3. Technical Support System **V1**:



– Overview of the System

– Three Classes:

1. **InputReader** class

2. **Responder** class

3. **SupportSystem** class

Technical Support System V1



01

Console based system.

02

Textual dialog system

- you enter text on the console and the system will provide a response.

03

System always responds with the same String:

- *"That sounds interesting. Tell me more..."*

Technical Support System V1



Sample

Welcome to the DodgySoft Technical Support System.

Please tell us about your problem. We will assist you with any problem you might have. Please type 'bye' to exit our system.

> my computer is broken

That sounds interesting. Tell me more...

> really broken

That sounds interesting. Tell me more...

> help me

That sounds interesting. Tell me more...

> pleaseeeeeeee

That sounds interesting. Tell me more...

> BETY

That sounds interesting. Tell me more...

> BYE

Nice talking to you. Bye...

Topic List

1. Recap of Library Classes (**Java's API**).

2. Interface Vs Implementation.

3. Technical Support System **V1**:

- Overview of the System



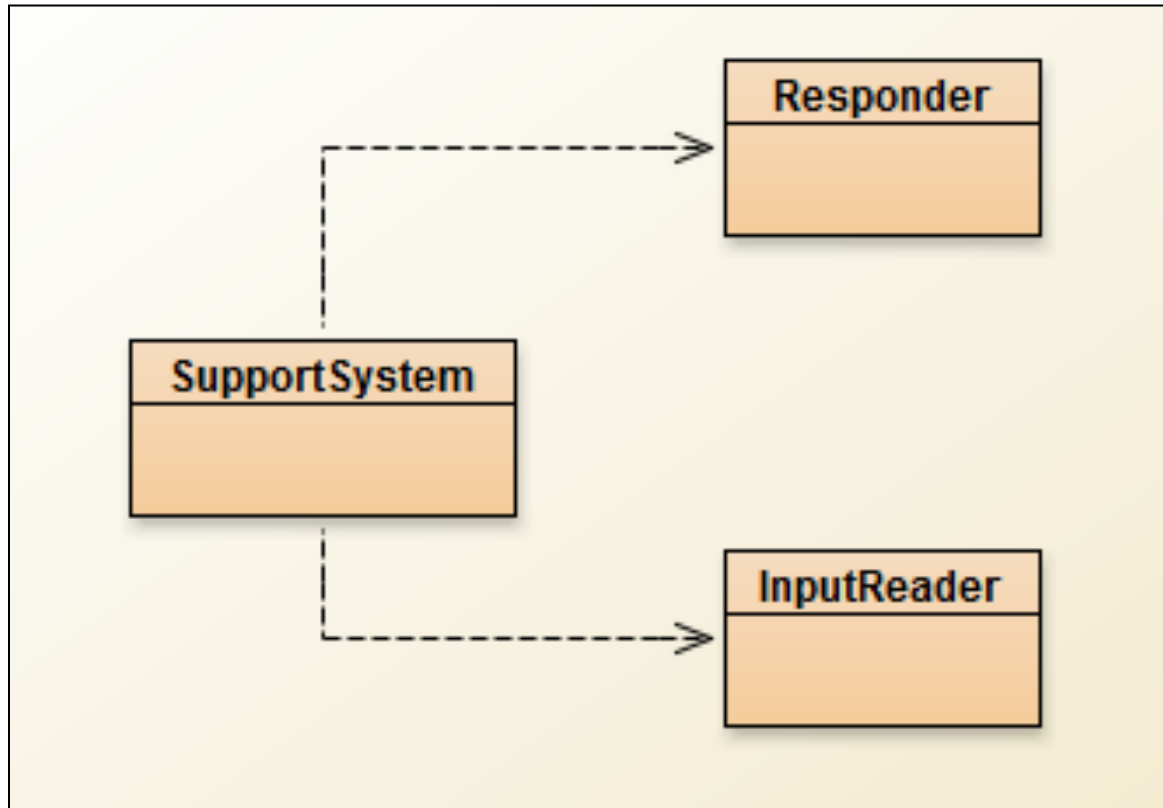
- Three Classes:

1. **InputReader** class

2. **Responder** class

3. **SupportSystem** class

Class Diagram



Three Classes



InputReader

Fields

- `input`

Methods

- `InputReader()`
- `getInput()`

Responder

Fields

Methods

- `generateResponse()`
- `Responder()`

SupportSystem

Private Fields

- `reader`
- `responder`

Methods

- `SupportSystem()`
- `main()`
- `start()`
- `printWelcome()`
- `printGoodbye()`

Topic List

1. Recap of Library Classes (**Java's API**).

2. Interface Vs Implementation.

3. Technical Support System **V1**:

- Overview of the System

- Three Classes:



- 1. InputReader** class

- 2. Responder** class

- 3. SupportSystem** class


```
import java.util.Scanner;
```

```
public class InputReader{
```

```
    Scanner input;
```

```
    public InputReader() {
```

```
        input = new Scanner(System.in);
    }
```

```
    /**
```

```
     * Read a line of text from the console and return it as a String.
```

```
     *
```

```
     * @return A String typed by the user.
```

```
     */
```

```
    public String getInput() {
```

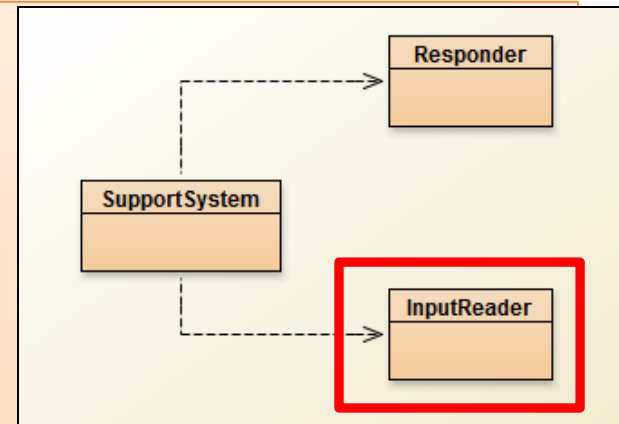
```
        System.out.print("> ");           // print prompt
```

```
        String inputLine = input.nextLine().trim().toLowerCase();
```

```
        return inputLine;
```

```
    }
```

```
}
```



Topic List

1. Recap of Library Classes (**Java's API**).

2. Interface Vs Implementation.

3. Technical Support System **V1**:

- Overview of the System

- Three Classes:

 - 1. **InputReader** class

 - 2. **Responder** class

 - 3. **SupportSystem** class

```
public class Responder{
```

```
/**
```

```
 * Construct a Responder - nothing to do
```

```
 */
```

```
public Responder(){\n}
```

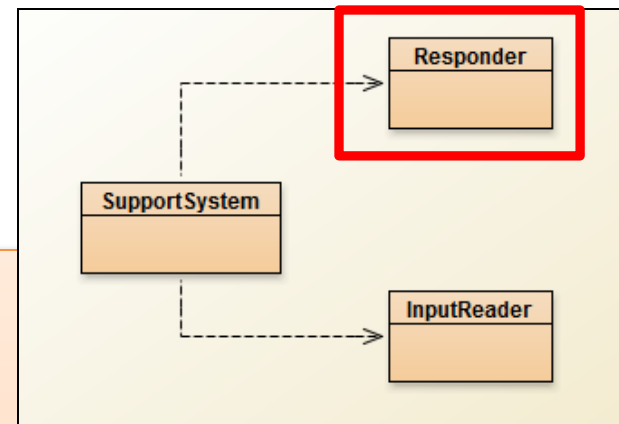
```
/**
```

```
 * Generate a response.
```

```
 * @return  A string that should be displayed as the response
```

```
 */
```

```
public String generateResponse(){\n    return "That sounds interesting. Tell me more...";\n}\n}
```



Topic List

1. Recap of Library Classes (**Java's API**).

2. Interface Vs Implementation.

3. Technical Support System **V1**:

- Overview of the System

- Three Classes:

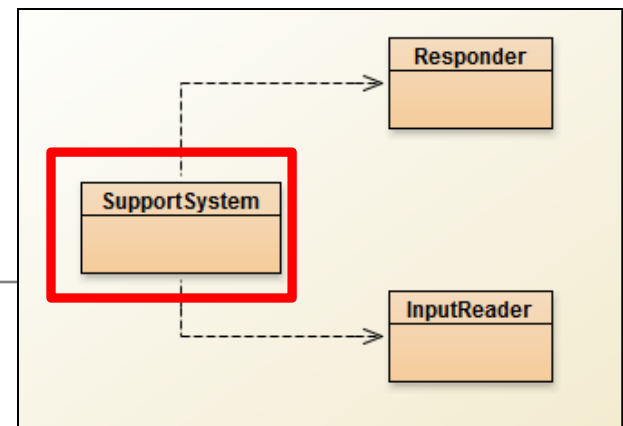
 - 1. **InputReader** class

 - 2. **Responder** class

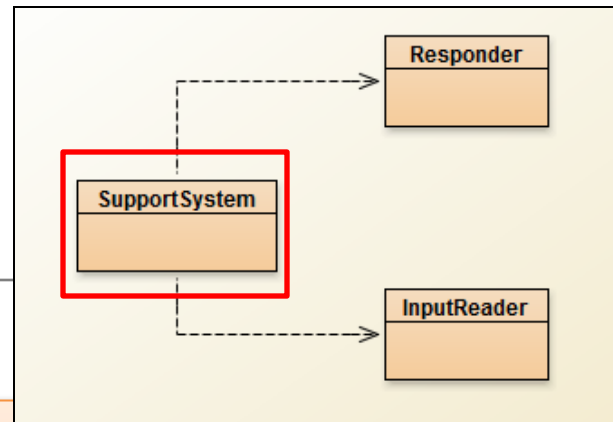
 - 3. **SupportSystem** class



```
public class SupportSystem{  
    private InputReader reader;  
    private Responder responder;  
  
    public SupportSystem() {  
        reader = new InputReader();  
        responder = new Responder();  
    }  
  
    public static void main(String[] args){  
        SupportSystem app = new SupportSystem();  
        app.start();  
    }  
  
    public void start() {  
        printWelcome();  
        String input = reader.getInput();  
        while(! input.startsWith("bye")) {  
            String response = responder.generateResponse();  
            System.out.println(response);  
            input = reader.getInput();  
        }  
        printGoodbye();  
    }  
}
```



More on next slide >>



```
private void printWelcome() {
    System.out.println("Welcome to the DodgySoft Technical Support System.");
    System.out.println();
    System.out.println("Please tell us about your problem. We will assist you");
    System.out.println("with any problem you might have. Please type 'bye'");
    System.out.println("to exit our system.");
}

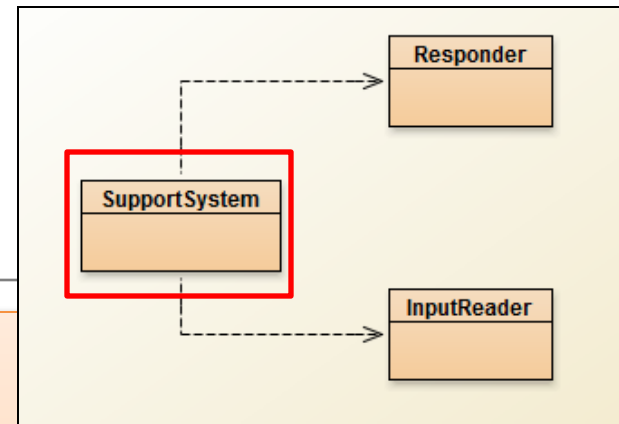
private void printGoodbye() {
    System.out.println("Nice talking to you. Bye...");
}

}
```

Main loop structure

```
public void start(){  
    printWelcome();  
    String input = reader.getInput();  
    while(! input.startsWith("bye")) {  
        String response = responder.generateResponse();  
        System.out.println(response);  
        input = reader.getInput();  
    }  
    printGoodbye();  
}
```

```
Get input  
while(input does not start with "bye"){  
    do something (i.e. print response)  
    Get some new input  
}
```



Three Classes



InputReader

Fields

- `input`

Methods

- `InputReader()`
- `getInput()`

Responder

Fields

Methods

- `generateResponse()`
- `Responder()`

SupportSystem

Private Fields

- `reader`
- `responder`

Methods

- `SupportSystem()`
- `main()`
- `start()`
- `printWelcome()`
- `printGoodbye()`

**Any
Questions?**

