

# More Sophisticated Behaviour

Technical Support System **V2.0**

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# Topic List

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1. Recap: Technical Support System V1

2. Technical Support System V2

- Overview of the System
- Responder class
  - Random

# Technical Support System V1

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- A console based system.
- A textual dialog system i.e. you enter text on the console and the system will provide a response.
- In this version, the system responds with the same String always:
  - “That sounds interesting. Tell me more...”

# Technical Support System V1

---

```
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
```

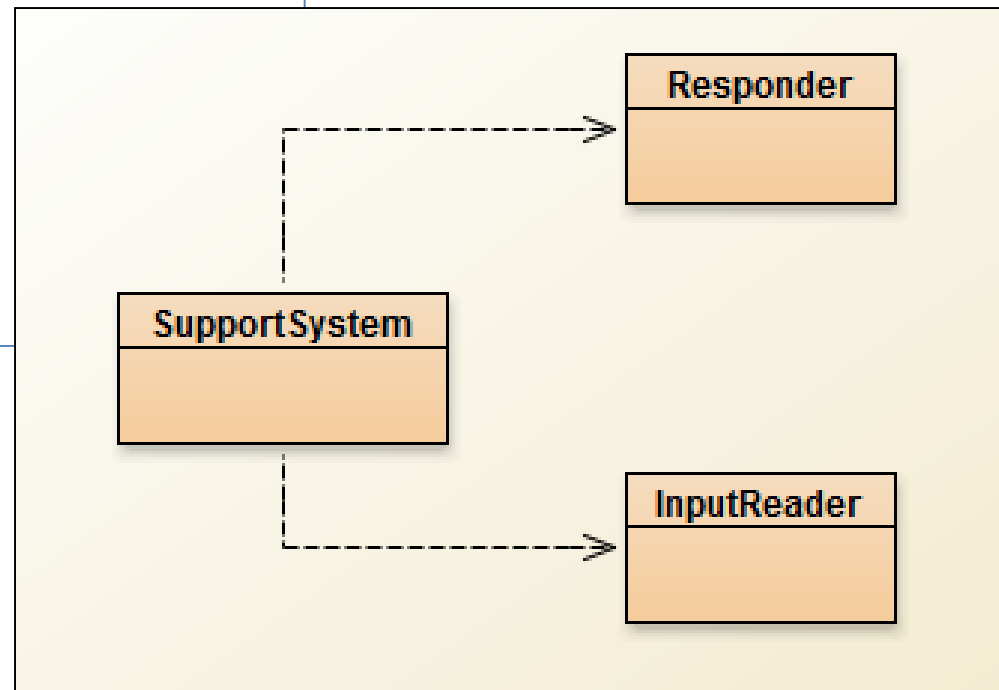
```
That sounds interesting. Tell me more...
```

```
> BETY
```

```
That sounds interesting. Tell me more...
```

```
> BYE
```

```
Nice talking to you. Bye...
```




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- 
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    - Random

# Technical Support System V2



- A console based, textual dialog system.
- The system provides a **random** response from a list of pre-defined responses

- "That sounds interesting. Tell me more..."
- "I need a bit more information on that."
- "Have you checked that you do not have a dll conflict?"
- "That is explained in the manual. Have you read the manual?"
- "That's not a bug, it's a feature!"
- "Could you elaborate on that?"
- etc.

repository

# Technical Support System V2

## 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

No other customer has ever complained about this before. What is your system configuration?

> windows

That sounds odd. Could you describe that problem in more detail?

> it won't boot up

That sounds odd. Could you describe that problem in more detail?

> I get the blue screen of death

I need a bit more information on that.

> it's blue

That sounds interesting. Tell me more...

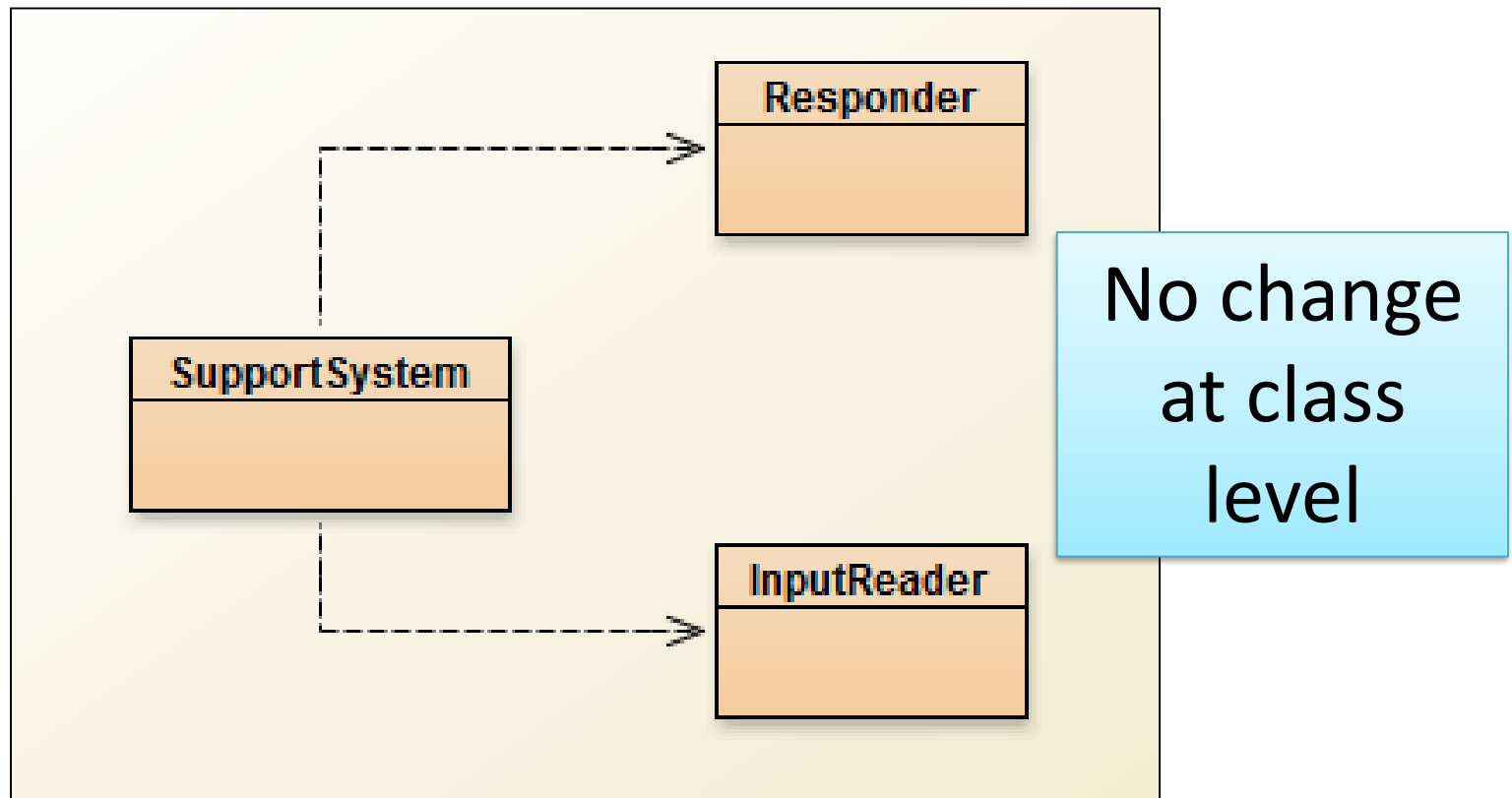
> really blue

That's not a bug, it's a feature!

>

# Class Diagram V2

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

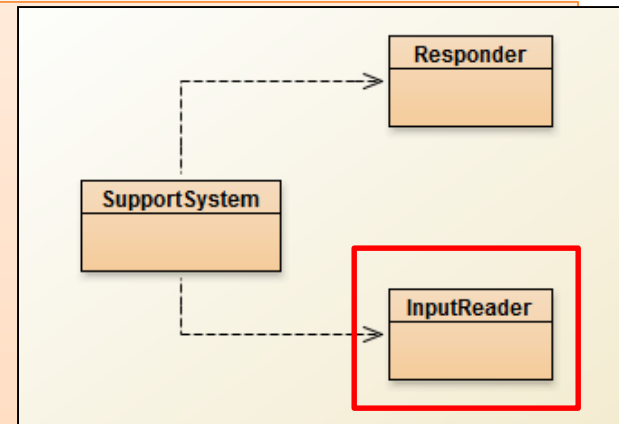
```
public class InputReader{
```

```
    Scanner input;
```

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

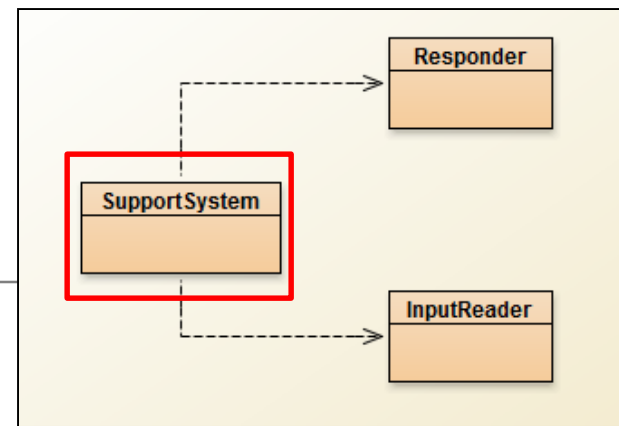
```
    /**  
     * Read a line of text from the console and return it as a String.  
     *  
     * @return A String typed by the user.  
     */
```

```
    public String getInput() {  
        System.out.print("> ");           // print prompt  
        String inputLine = input.nextLine().trim().toLowerCase();  
        return inputLine;  
    }  
}
```

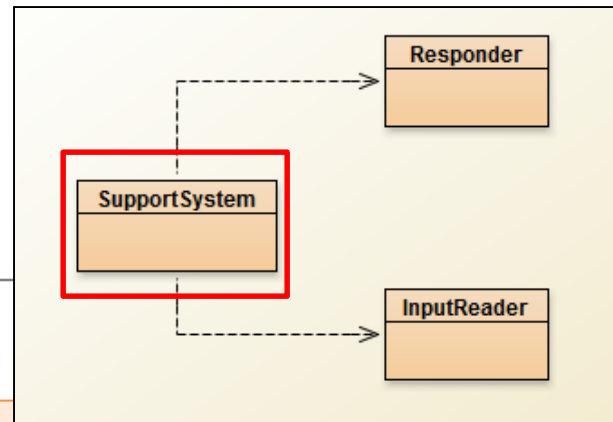


No change  
in this class

```
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();  
    }  
}
```



No change  
in this class



```
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...");
}

}
```

No change  
in this class

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1. Recap: Technical Support System V1

2. Technical Support System V2

- Overview of the System

- **Responder** class

  - Random

This class will change - to generate a random response

//V1 code

```
public class Responder{
```

```
/**
```

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

```
 */
```

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

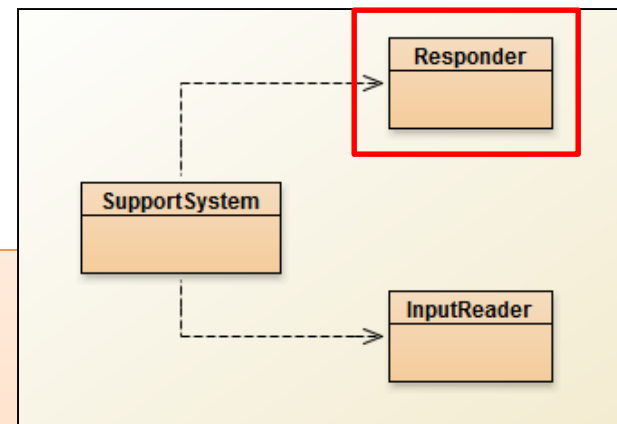
```
/**
```

```
 * 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}
```



# Repository of Responses

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- Instead of responding with:
  - "That sounds interesting. Tell me more...";



- We would like to respond with a **random** response from a repository of responses

- "That sounds interesting. Tell me more..."
- "I need a bit more information on that."
- "Have you checked that you do not have a dll conflict?"
- "That is explained in the manual. Have you read the manual?"
- "That's not a bug, it's a feature!"
- "Could you elaborate on that?"
- etc.

repository

- But how do we **randomise** the selection of a response?

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- Random

# Using Random

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- The library class **Random** can be used to generate random numbers

```
import java.util.Random; // import the library class
...
Random randomGenerator = new Random(); // declare & init variable
...
//random int number (no upper or lower bound)
int index1 = randomGenerator.nextInt();

//random number between 0 (inclusive) and 100 (exclusive)
int index2 = randomGenerator.nextInt(100);
```



```
import java.util.ArrayList;
```

```
public class Responder{
```

```
    private ArrayList<String> responses;
```

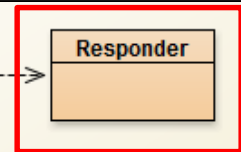
```
    public Responder() {
```

```
        responses = new ArrayList<String>();  
        fillResponses();  
    }
```

```
    private void fillResponses() {
```

```
        responses.add("That sounds odd. Could you elaborate on that?");  
        responses.add("No other customer has ever complained about this before. \n" +  
            "What is your system configuration?");  
        responses.add("That sounds interesting. Tell me more...");  
        responses.add("I need a bit more information on that.");  
        responses.add("Have you checked that you do not have a dll conflict?");  
        responses.add("That is explained in the manual. Have you read the manual?");  
        responses.add("Your description is a bit wishy-washy. Have you got an expert\n" +  
            "there with you who could describe this more precisely?");  
        responses.add("That's not a bug, it's a feature!");  
        responses.add("Could you elaborate on that?");  
    }
```

```
}
```



## V2.0 Responder...changes

The Responder class declares a private ArrayList of Strings called **responses**, which is initialised in the constructor.

This is used by fillResponses() to create the repository of responses.

```
import java.util.ArrayList;
```

```
import java.util.Random;
```

```
public class Responder{
```

```
    private Random randomGenerator; // declare
```

```
    private ArrayList<String> responses;
```

```
    public Responder() {
```

```
        randomGenerator = new Random(); // init
```

```
        responses = new ArrayList<String>();
```

```
        fillResponses();
```

```
    }
```

```
    public String generateResponse() {
```

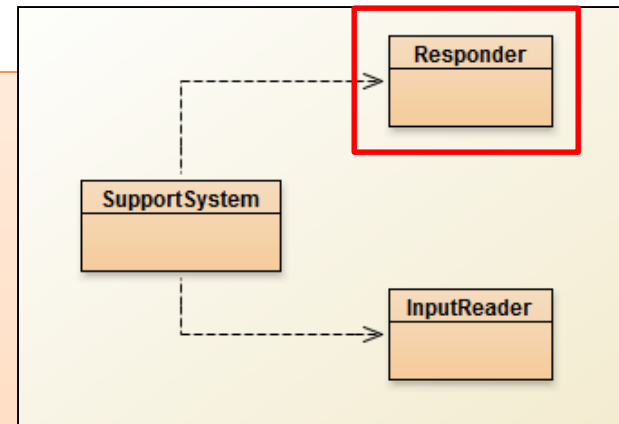
```
        // Pick a random number between 0 (inclusive) and the size
```

```
        // of the ArrayList (exclusive).
```

```
        int index = randomGenerator.nextInt(responses.size()); // repo size
```

```
        return responses.get(index);
```

```
    }
```



V2.0 Responder changes...

to return a **random** response  
from a repository of responses.

**Any  
Questions?**

