More Sophisticated Behaviour

Technical Support System **V2.0**

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Topic List

1. Recap: Technical Support System V1

2. Technical Support System V2
   - Overview of the System
   - Responder class
     - Random

Three Classes

InputReader

Fields

- input

Methods

- InputReader()
- getInput()

Responder

Fields

Methods

- generateResponse()
- Responder()

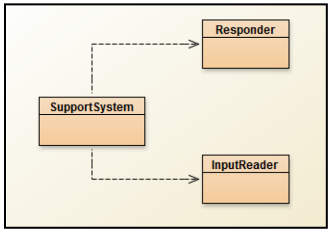
SupportSystem

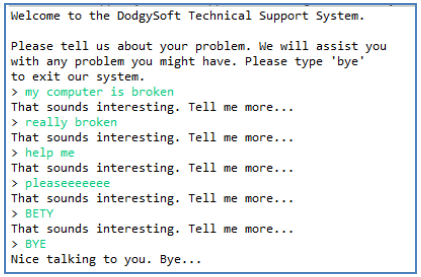
Private Fields

- reader
- responder

Methods

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





```
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...
> pleaseeeeeee
That sounds interesting. Tell me more...
> BETY
That sounds interesting. Tell me more...
> BYE
Nice talking to you. Bye...
```

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Technical Support System **V2**

- A console based, textual dialog system.

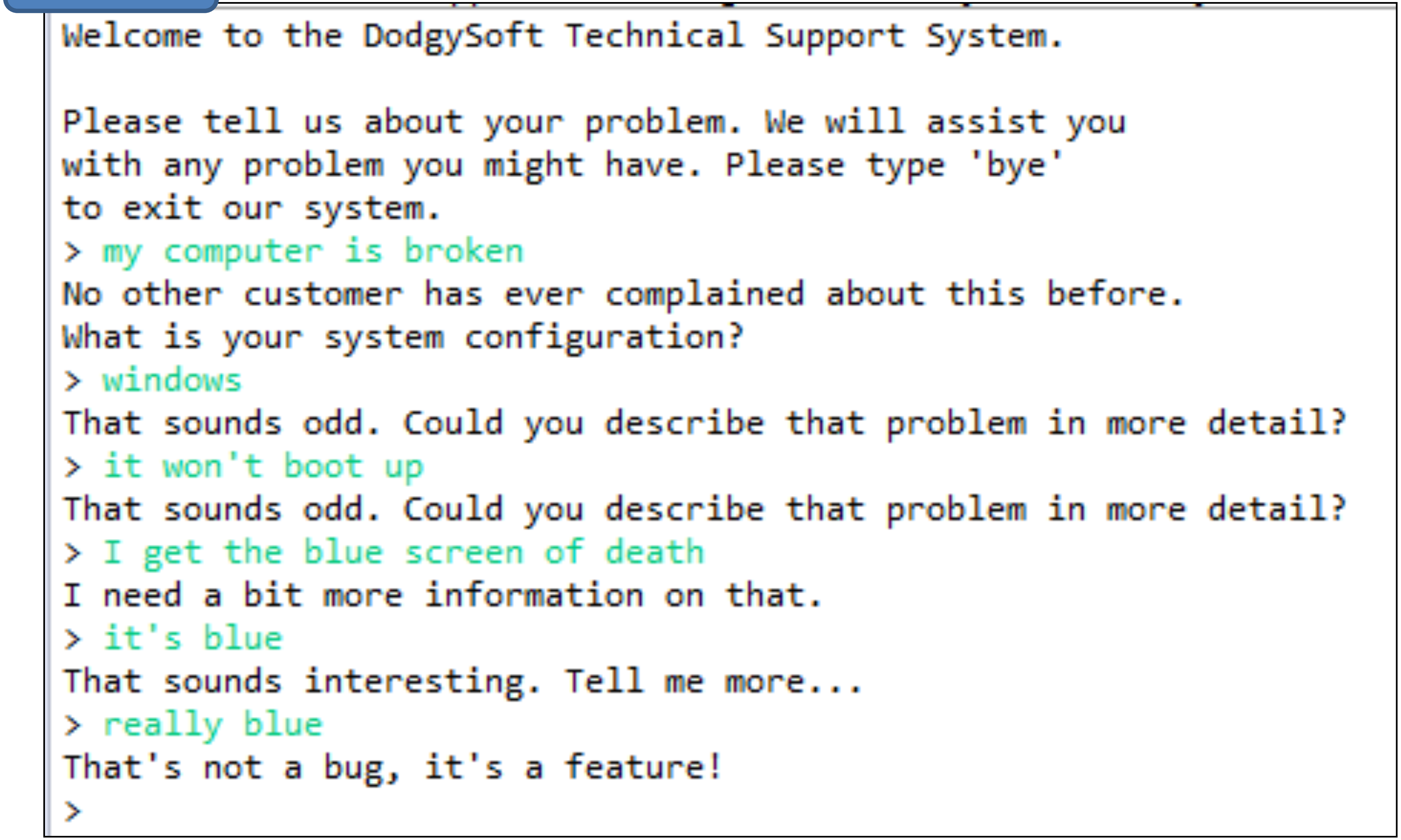
- The system provides a **random** response from a list of pre-defined responses

  - "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

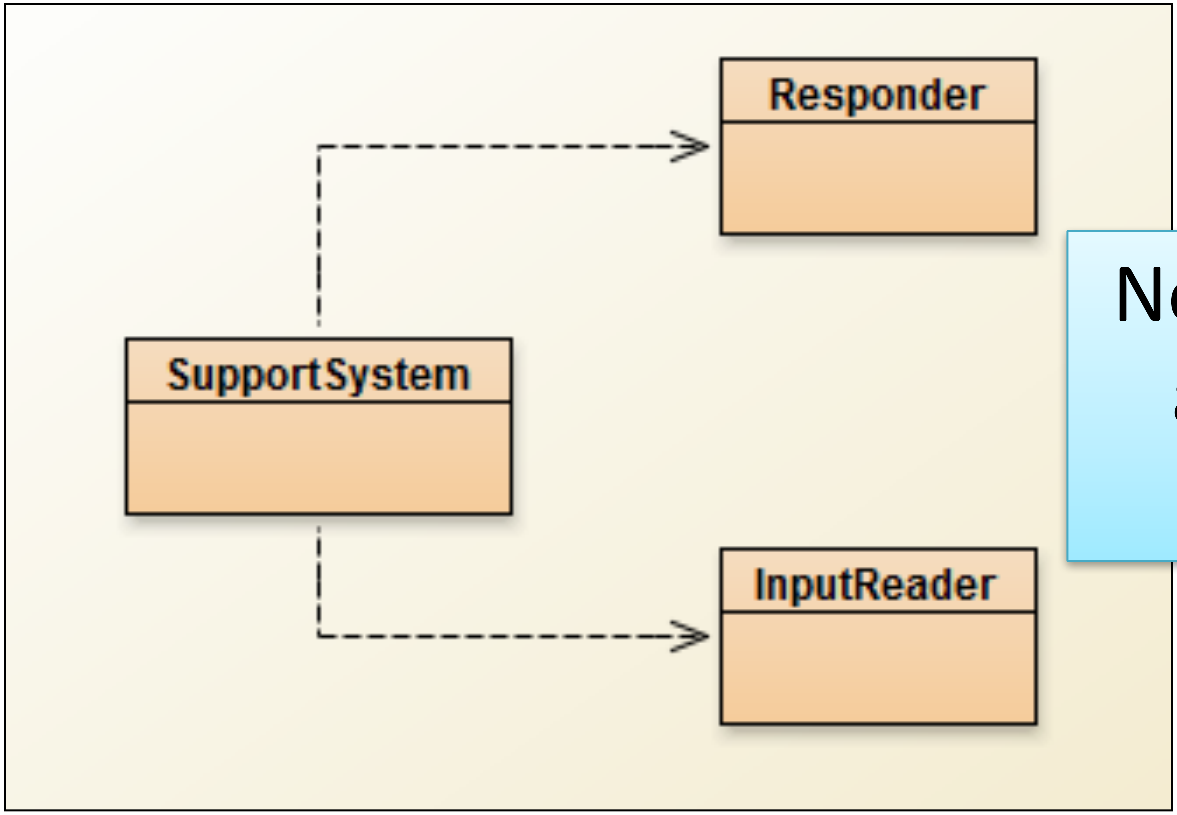
Technical Support System **V2**

Sample



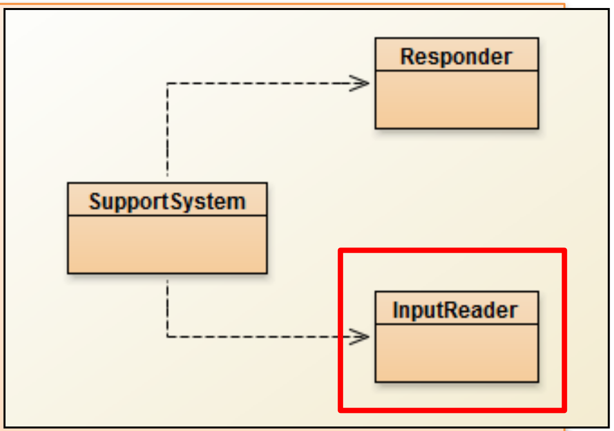
```
Welcome to the DodgySoft Technical Support System.

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**



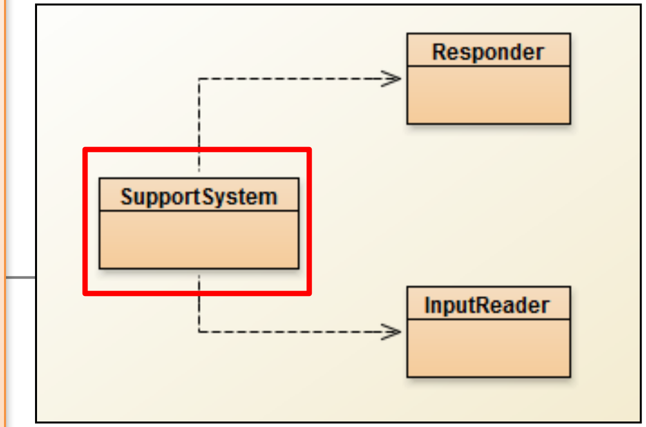
No change at class level

```
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;
    }
}
```

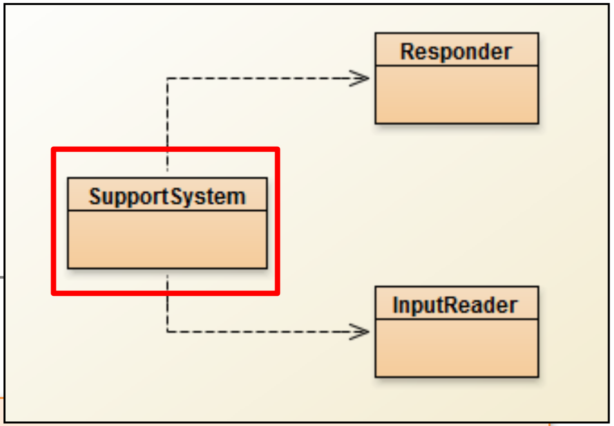


No change in this class

```
public class SupportSystem{
    private InputReader reader;
    private Responder responder;

    public SupportSystem() {
        reader = new InputReader();
        responder = new Responder();
    }

    public static void main(String[] argvs){
        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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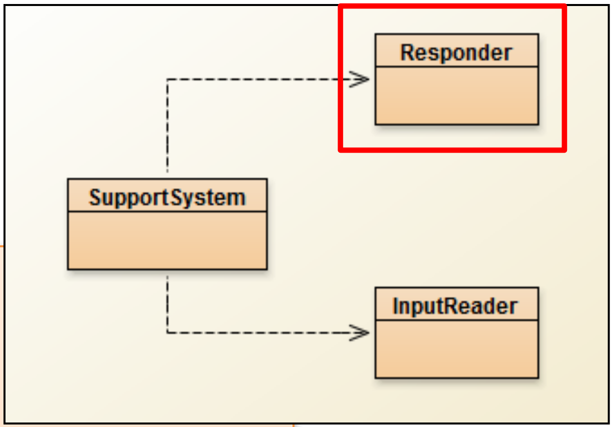
     - Random

This class will change - to generate a random response



```
//V1 code
public class Responder{

   /**
    * Construct a Responder - nothing to do
    */
    public Responder(){
    }

    /**
    * Generate a response.
    * @return   A string that should be displayed as the response
    */
    public String generateResponse(){
         return "That sounds interesting. Tell me more...";
    }
}
```

Repository of Responses

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

- We would like to respond
  with a **<u>random</u>** 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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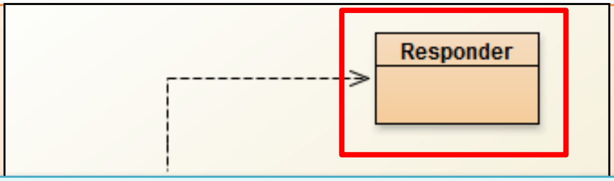
Using **Random**

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

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

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

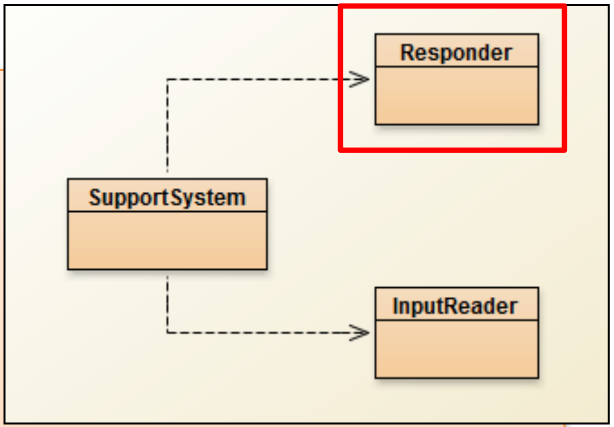
```
import java.util.ArrayList;

public class Responder{
  private ArrayList<String> responses;

  public Responder()   {
     responses = new ArrayList<String>();
     fillResponses();
  }

  private void fillResponses() {
     responses.add("That sounds odd. Could you
     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;
1 import java.util.Random;

  public class Responder{
2     private Random randomGenerator;    // declare
      private ArrayList<String> responses;

      public Responder()   {
2             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).
3             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?