

5 Getting Input from Keyboard



Objectives

At the end of the lesson, the student should be able to:

- Create an interactive Java program that gets input from the keyboard
- Use the `BufferedReader` class to get input from the keyboard using a console
- Use the `JOptionPane` class to get input from the keyboard using a graphical user interface



Getting Input from the Keyboard

- Two methods of getting input:
 - `BufferedReader` class
 - `JOptionPane` class
 - graphical user interface



Using BufferedReader Class

- BufferedReader class
 - Found in the [java.io](#) package
 - Used to get input



Steps to get Input

1. Add this at the top of your code:

```
import java.io.*;
```

2. Add this statement:

```
BufferedReader dataIn = new BufferedReader( new  
    InputStreamReader(System.in) );
```



Steps to get Input

3. Declare a temporary String variable to get the input, and invoke the `readLine()` method to get input from the keyboard. You have to type it inside a try-catch block.

```
try{  
    String temp = dataIn.readLine();  
}catch( IOException e ){  
    System.out.println("Error in getting input");  
}
```



Sample Program

```
1  import java.io.BufferedReader;
2  import java.io.InputStreamReader;
3  import java.io.IOException;
4
5  public class GetInputFromKeyboard {
6
7      public static void main( String[] args ){
8          BufferedReader dataIn = new BufferedReader(new
9              InputStreamReader( System.in) );
10
11          String name = "";
12          System.out.print("Please Enter Your Name:");
13          try{
14              name = dataIn.readLine();
15          }catch( IOException e ){
16              System.out.println("Error!");
17          }
18          System.out.println("Hello " + name + "!");
19      }
20 }
```



Sample Program

- The lines,

```
import java.io.BufferedReader;  
import java.io.InputStreamReader;  
import java.io.IOException;
```

indicate that we want to use the classes `BufferedReader`, `InputStreamReader` and `IOException` which are inside the `java.io` package.

- These statements can also be written as,

```
import java.io.*;
```



Sample Program

- The Java Application Programming Interface (API) contains hundreds of predefined classes that you can use in your programs. These classes are organized into what we call packages.
- **Packages** contain classes that have related purpose.



Sample Program

- The statement,

```
public class GetInputFromKeyboard {
```


means we declare a class named `GetInputFromKeyboard`
- The next statement declares the main method.

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



Sample Program

- The statement,

```
BufferedReader dataIn = new BufferedReader(new InputStreamReader  
                                           ( System.in) );
```

declares a variable named `dataIn`, with the class type `BufferedReader`.

- Don't worry about what the syntax means for now. We will cover more about classes and declaring classes later in the course.



Sample Program

- The statement,
`String name = "";`
declares a String type variable name .
- The next statement,
`System.out.print("Please Enter Your Name:");`
outputs a String “Please Enter Your Name:” on the screen



Sample Program

- The given block defines a try-catch block.

```
try{
    name = dataIn.readLine();
}catch( IOException e ){
    System.out.println("Error!");
}
```

This assures that the possible exceptions that could occur in the statement

```
name = dataIn.readLine();
```

will be caught.

- We will cover more about exception handling in the latter part of this course.



Sample Program

- Now going back to the statement,
`name = dataIn.readLine();`

the method call, `dataIn.readLine()`, gets input from the user and will return a String value.

- This value will then be saved to our name variable, which we will use in our final statement to greet the user,
`System.out.println("Hello " + name + "!");`



Using JOptionPane Class

- Another way to get input from the user is by using the `JOptionPane` class which is found in the `javax.swing` package.
- `JOptionPane` makes it easy to pop up a standard dialog box that prompts users for a value or informs them of something.



Sample Program

```
1 import javax.swing.JOptionPane;
2
3 public class GetInputFromKeyboard {
4
5     public static void main( String[] args ){
6         String name = "";
7         name=JOptionPane.showInputDialog("Please enter your name");
8         String msg = "Hello " + name + "!";
9         JOptionPane.showMessageDialog(null, msg);
10    }
11}
```



Sample Program Output



Sample Program

- The statement,
`import javax.swing.JOptionPane;`

indicates that we want to import the class `JOptionPane` from the `javax.swing` package.

- This can also written as,
`import javax.swing.*;`



Sample Program

- The statement,
`name=JOptionPane.showInputDialog("Please enter your name");`
creates a JOptionPane input dialog, which will display a dialog with a message, a textfield and an OK button as shown in the figure.
- This returns a String which we will save in the name variable.



Sample Program

- The statement,

```
String msg = "Hello " + name + "!";
```

creates the welcome message, which we will store in the msg variable.



Sample Program

- The statement,
`JOptionPane.showMessageDialog(null, msg);`

displays a dialog which contains a message and an OK button.



Summary

- Discussed two ways of getting input from the user by using the classes:
 - BufferedReader
 - JOptionPane
- Brief overview of packages
 - Groups related classes in Java
 - Classes inside packages can be used by importing the package

