

A Friendly Face for Eclipse

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Java at the Intro Level

- Great for OO Concepts
- But:
 - Tough syntax
 - “Magic code” for `main`, console I/O
 - Compile / Run at command line

Simplify with IDEs

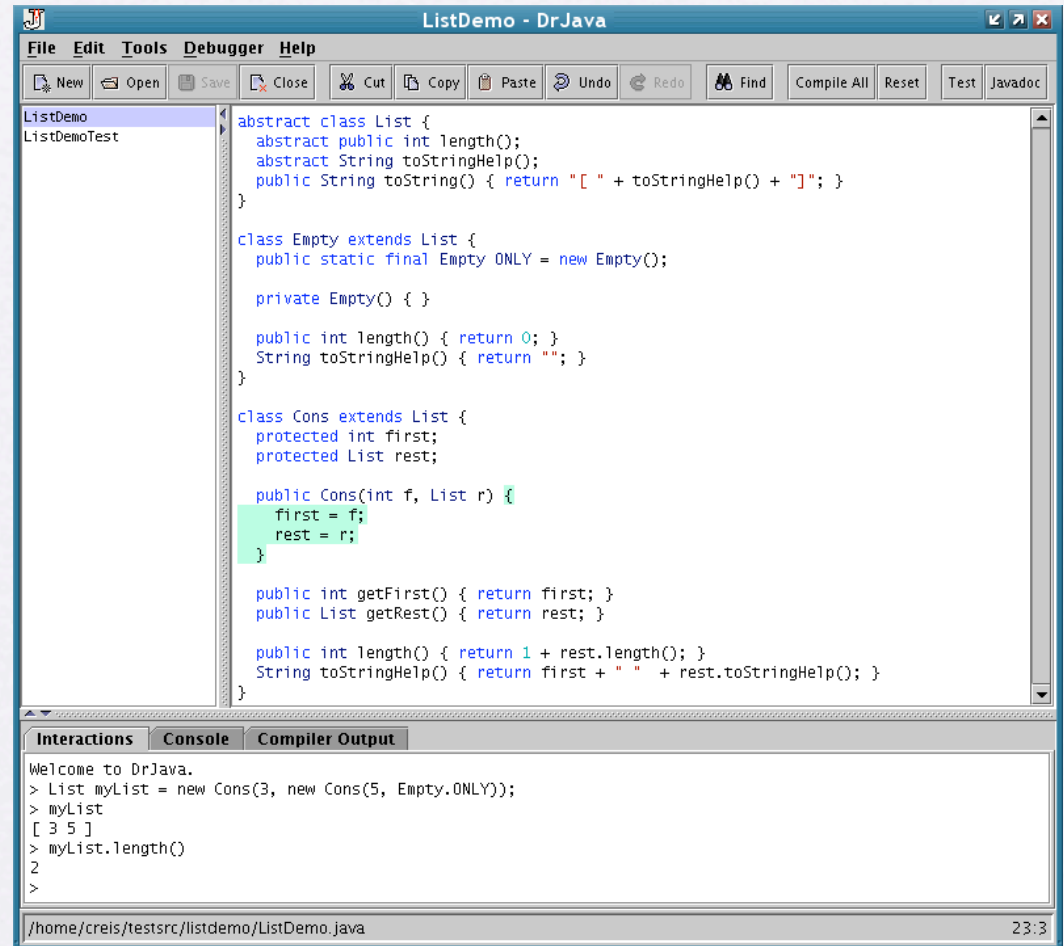
- Syntactic aids
- Error highlighting
- Avoid the command line

IDE Pitfalls for Novices

- No relief from `main` or console I/O
- Overwhelming interface
- Heavyweight

DrJava

- Pedagogic IDE
- Lightweight
- Simple user interface



```
File Edit Tools Debugger Help
New Open Save Close Cut Copy Paste Undo Redo Find Compile All Reset Test Javadoc

ListDemo
ListDemoTest

abstract class List {
    abstract public int length();
    abstract String toStringHelp();
    public String toString() { return "[" + toStringHelp() + "];" }
}

class Empty extends List {
    public static final Empty ONLY = new Empty();

    private Empty() { }

    public int length() { return 0; }
    String toStringHelp() { return ""; }
}

class Cons extends List {
    protected int first;
    protected List rest;

    public Cons(int f, List r) {
        first = f;
        rest = r;
    }

    public int getFirst() { return first; }
    public List getRest() { return rest; }

    public int length() { return 1 + rest.length(); }
    String toStringHelp() { return first + " " + rest.toStringHelp(); }
}

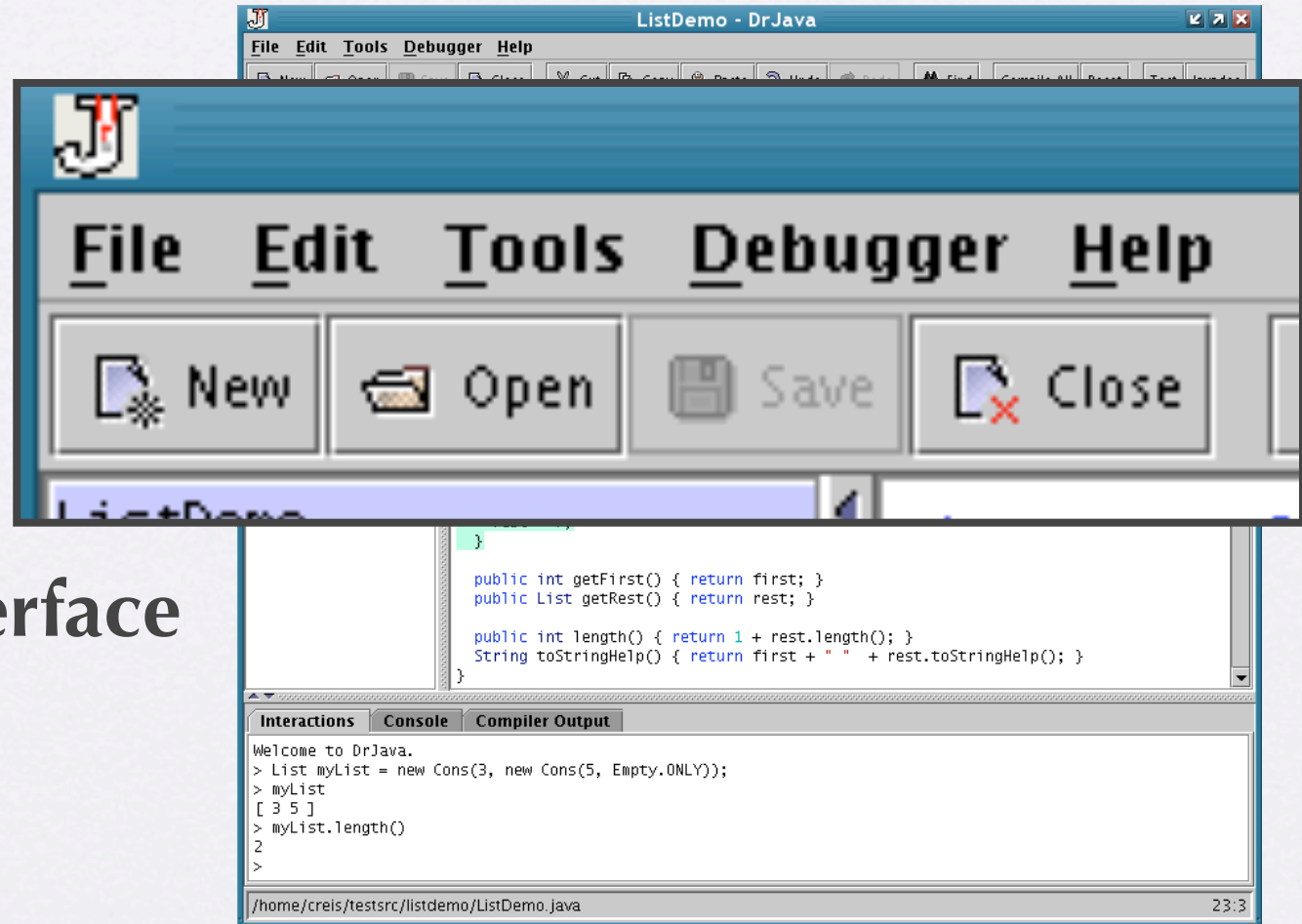
Interactions Console Compiler Output

Welcome to DrJava.
> List myList = new Cons(3, new Cons(5, Empty.ONLY));
> myList
[ 3 5 ]
> myList.length()
2
>

/home/creis/testsrc/listdemo/ListDemo.java 23:3
```

DrJava

- Pedagogic IDE
- Lightweight
- **Simple user interface**



Interactions Pane

- “Read-Eval-Print Loop” (REPL)
- Calculator metaphor
- Build up state
- Good for demos, experiments, etc.

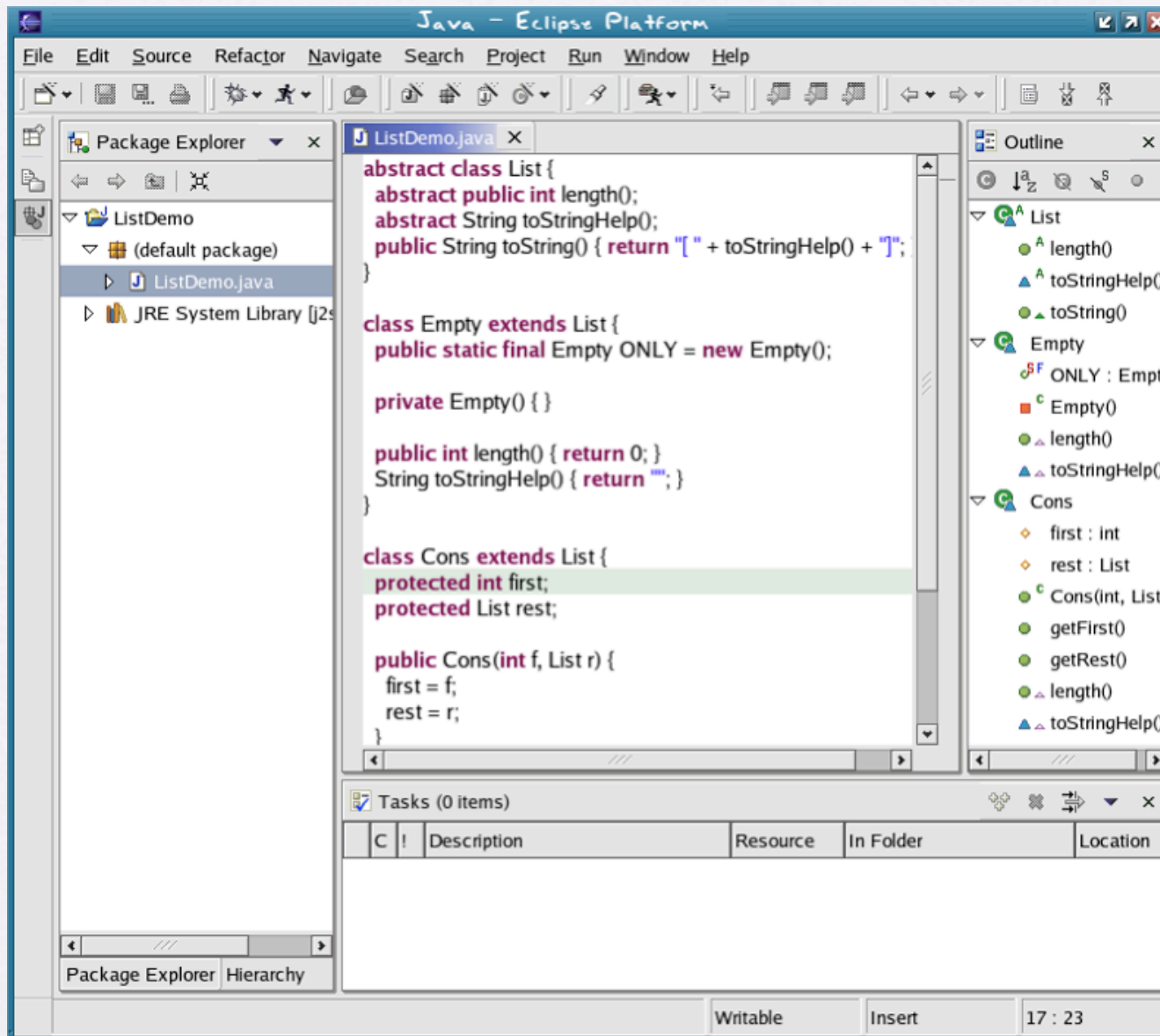
Potential DrJava Drawbacks

- No Plug-in Architecture
- Limited feature scope

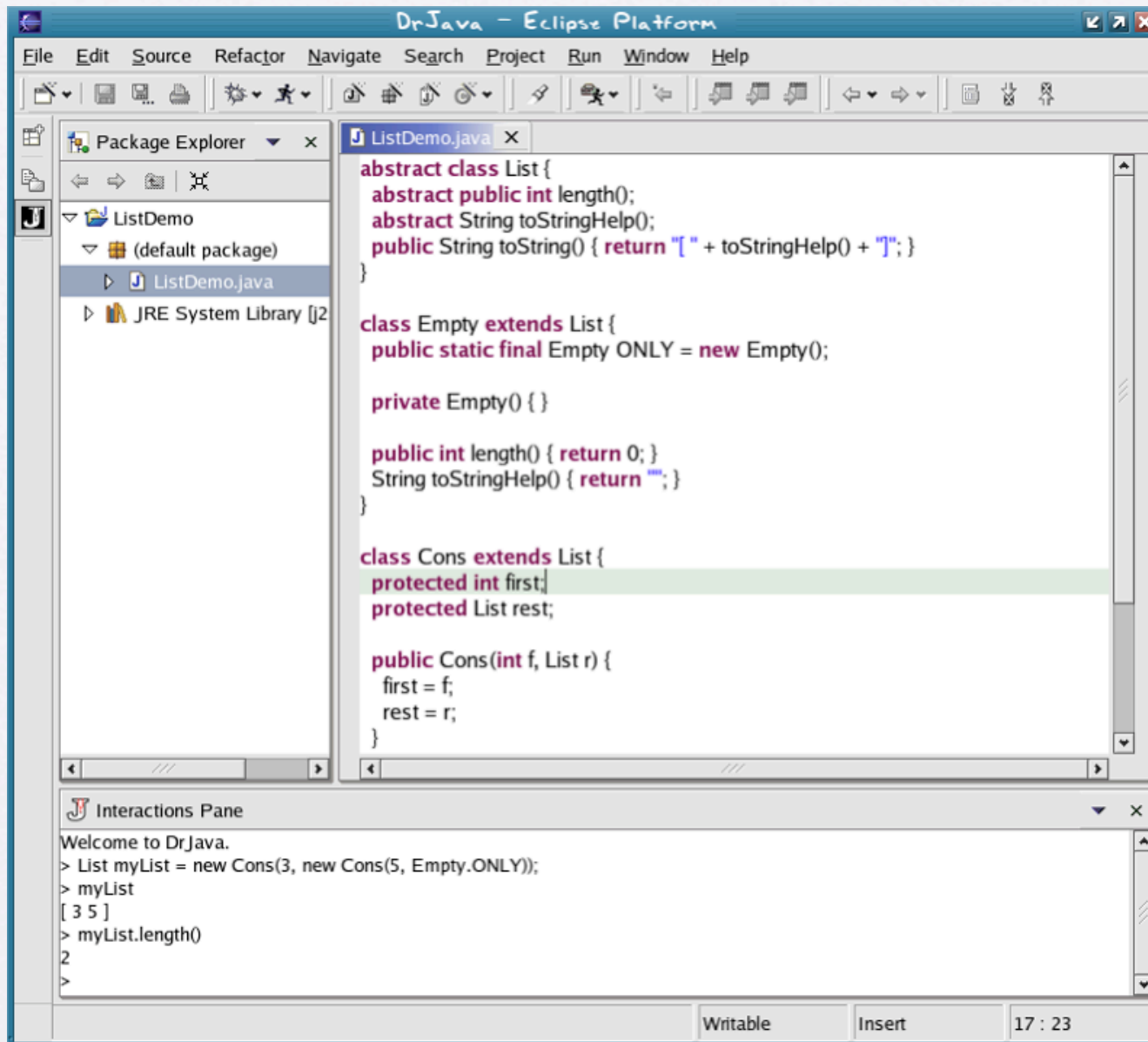
DrJava Plug-in for Eclipse

- Create a DrJava / Eclipse Hybrid
 - Simplify Eclipse's layout
 - Add Interactions Pane

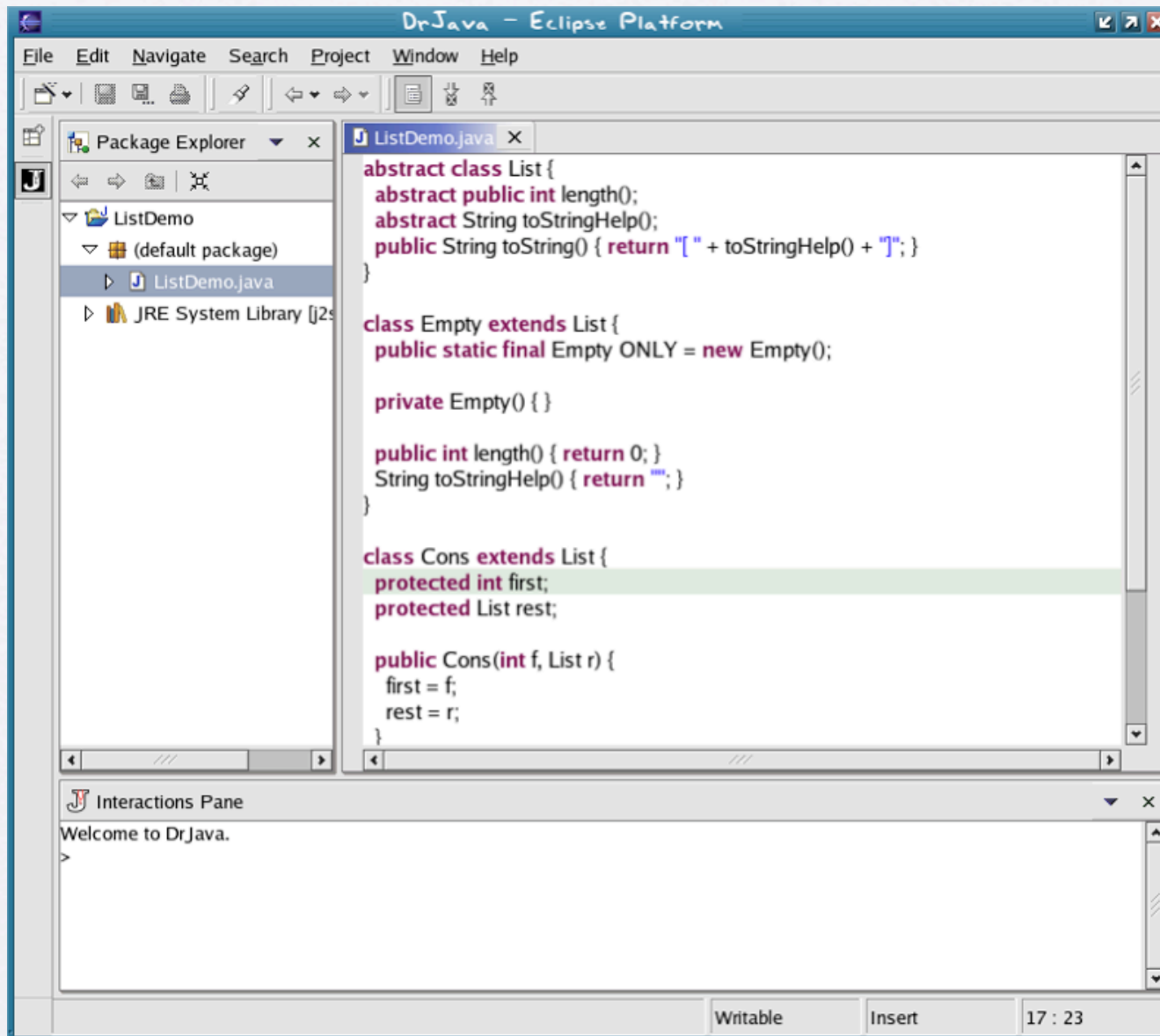
Simplify the Layout



Simplify the Layout



Simplify the Layout



Interactions Pane

- Straight from DrJava
- REPL vs. Scrapbook Page
 - More intuitive metaphor
 - Clear, convenient to build up state

Coming Soon

- Debugger Integration
 - Interactions during suspension
 - More power than just expression eval

Conclusion

- Eclipse + DrJava: better for novices
 - Less daunting UI
 - Avoid complexities with REPL
 - Ease transition to advanced tools