

Project 2

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Polynomials

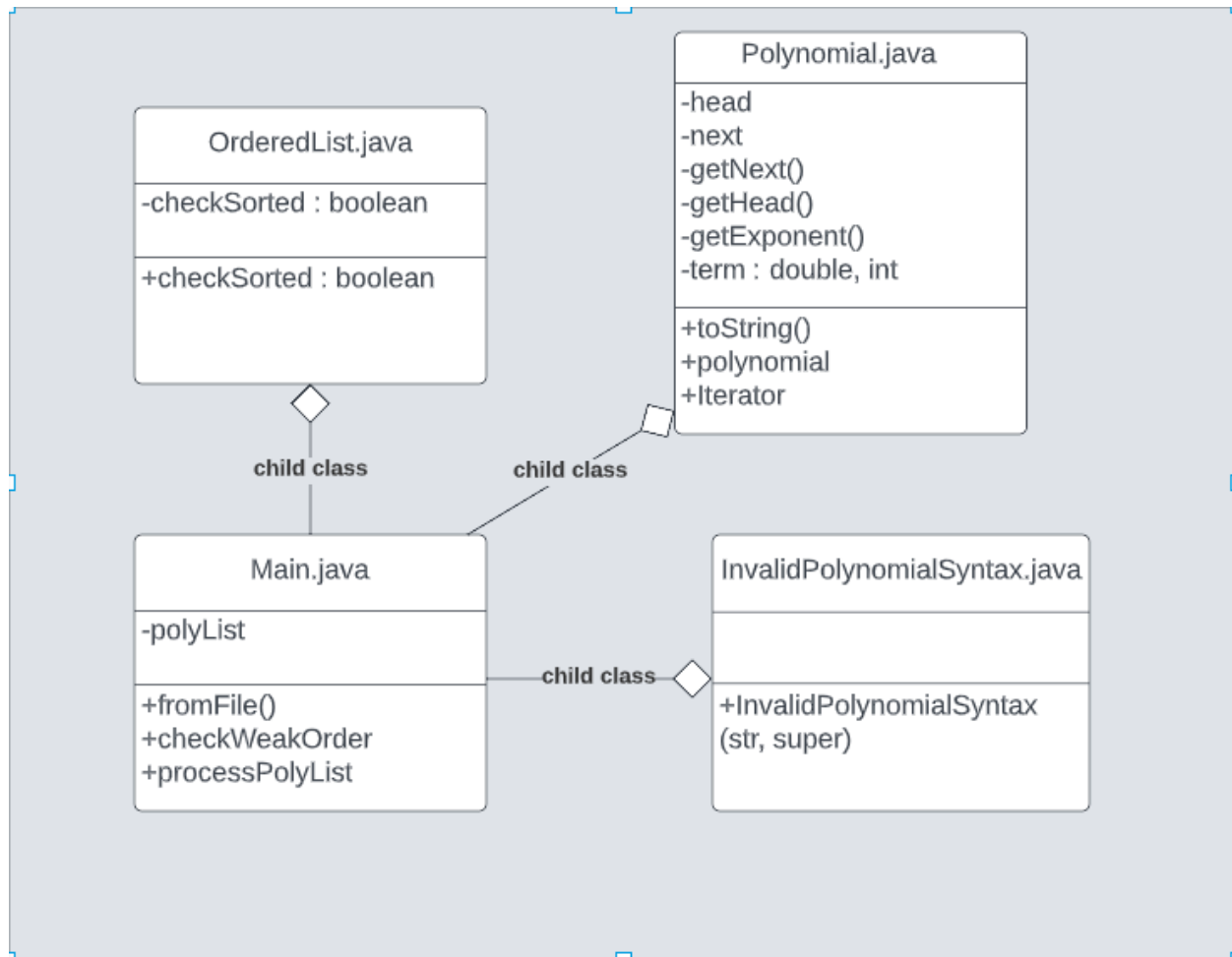
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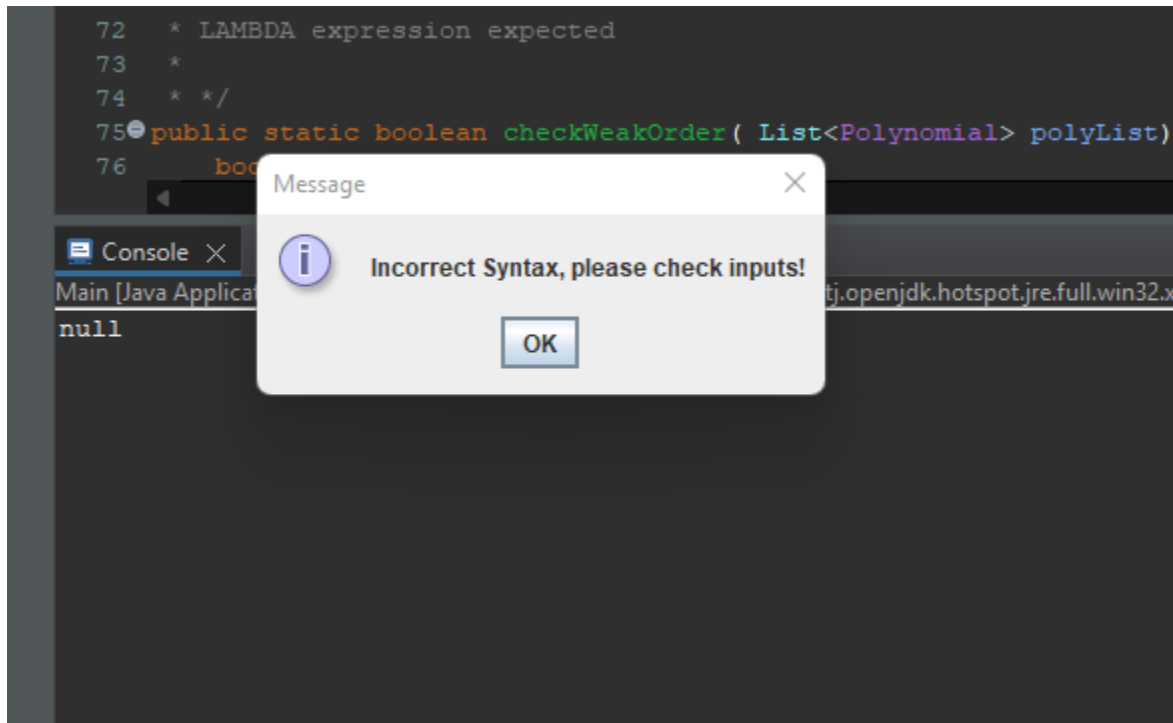
Assumptions

The assumptions I've made for this script are very straight-forward. I assumed that when using a .txt-based file for formatting the polynomials, the output would match the required format for the project outline. In trial there were minute changes that needed to be made for increase in accuracy, but I believe that all issues have been resolved, and the script works as described in the guidelines.

UML Diagram



Test Cases



Error in polynomial. Input expression was $4x^4 + 8x^2 + \dots$.

Throws error message in the event of an improper input expression.

```
20 public static void main(String[] args) {
21     processPolyList();
22 }
23
24
25 public static ArrayList<String> processPolyList() {
26     //Create ArrayList and add elements
27     ArrayList<String> expList = new ArrayList<>();
28
29     JFileChooser chooser = new JFileChooser();
30
31     //Show both directories
32     chooser.setFileSelectionMode(JFileChooser.FILES_AND_DIRECTORIES);
33
34     //use current directory
35     chooser.setCurrentDirectory(new File("."));
36
37     int response = chooser.showOpenDialog(null);
38
39     if (response == JFileChooser.APPROVE_OPTION) {
40         File file = chooser.getSelectedFile();
41         String fileName = file.getName();
42         String[] parts = fileName.split("\\.");
43         double a = Double.parseDouble(parts[0]);
44         double b = Double.parseDouble(parts[1]);
45         double c = Double.parseDouble(parts[2]);
46         double d = Double.parseDouble(parts[3]);
47         double e = Double.parseDouble(parts[4]);
48         double f = Double.parseDouble(parts[5]);
49
50         String poly = a + "x^3 + " + b + "x^2 + " + c + "x + " + d;
51         String result = "Strong Ordered: true\nWeak Ordered: true";
52         expList.add(poly + result);
53     }
54
55     return expList;
56 }
```

test_case2 - Notepad

File Edit View

5.6 3 4 1 8.3 0

Ln 1, Col 1 100%

Console X

<terminated> Main [Java Application] C:\Users\...
5.6x^3 + 4.0x + 8.3
Strong Ordered: true
Weak Ordered: true

Slight errors in returning values for weak and strong order.

Both will be printed in certain cases.

```

63
64         JOptionPane.showMessageDialog(JOptionPane
65     }
66 }
67
68     return expressionList;
69 }
70 /* Method: checkWeakOrder / returns: boolean
71  * Function: determines if a list is in weak order
72  * LAMBDA expression expected
73  *
74  * */
75 public static boolean checkWeakOrder( List<Polynomia
76     boolean isWeakOrder = true;

```

Console X

```

<terminated> Main [Java Application] C:\Users\Owner\.p2\pool\plugins\org.eclipse.just
4.0x^3 + 2.5x + 8.0
Strong Ordered: true
Weak Ordered: true

```

Polynomials are displayed in the format they are read.

Lessons Learned

I've learned a lot working with polynomials, and in general writing files to a .java script. In short, I found it slightly easier than say reading a .csv in a .py file. The biggest issue I still face with the child class `OrderList` while checking for strong or weak order is the separation of either or. Currently, the display together and I am finding difficulty producing otherwise. I will be uploading this to GitHub in hopes to come back to it when I am more equipped to handle the errors I currently face.