

Task 6

Create a class **InputConverter** which allows to transform input data (supplied to the constructor) by various functions passed as arguments to the **convertBy** method.

For example, suppose we have defined operations (functions):

- **flines** — returns the list of lines of a text file;
- **join** — concatenates all strings from a list and returns the resulting string;
- **collectInts** — returns a list of integral numbers encountered in a string;
- **sum** — returns the sum of all elements of a list of integral numbers.

then one can get the sum of all numbers appearing in a text file named `fname` by:

```
Integer s = new InputConverter<String>(fname)
           .convertBy(flines, join, collectInts, sum);
```

and the list of all numbers appearing in a text (string) `txt` by

```
List<Integer> n = new InputConverter<String>(txt)
                 .convertBy(collectInts);
```

As we can see, the **convertBy** function allows us to combine transformations on various input data and get a result we are after.

The following **main** function, in which you can modify only the fragment marked with

```
// your definitions here
```

where you should put your definitions

```
/* necessary imports */
/* Run with command-line arguments
   Berlin 591 Paris 1606 Lisbon 3604

   Input file 'SLamComb.dat' contains three lines
   Balance:
   Jane: 15 - Kate: +20
   Mary: -8 - Cindy: 7
*/

public class SLamComb {
    public static void main(String[] args) {
        // Definitions of 'flines', 'join', 'collectInts'
```

[download SLamComb.java](#)

```

// and 'sum' in the form of lambda expressions:

// your definitions here

// End of definitions

String fname = "SLamComb.dat";
InputConverter<String> fileConv =
    new InputConverter<>(fname);
List<String> lines = fileConv.convertBy(flines);
String text = fileConv.convertBy(flines, join);
List<Integer> ints =
    fileConv.convertBy(flines, join, collectInts);
Integer sumints =
    fileConv.convertBy(flines, join,
                       collectInts, sum);

System.out.println(lines);
System.out.println(text);
System.out.println(ints);
System.out.println(sumints);

List<String> arglist = Arrays.asList(args);
InputConverter<List<String>> slistConv =
    new InputConverter<>(arglist);
sumints = slistConv.convertBy(join, collectInts, sum);
System.out.println(sumints);
    }
}

```

with the input file containing

```

Balance:
Jane: 15 - Kate: +20
Mary: -8 - Cindy: 7

```

and with the following command-line arguments

```
Berlin 591 Paris 1606 Lisbon 3604
```

should print

```

[Balance:, Jane: 15 - Kate: +20, Mary: -8 - Cindy: 7]
Balance: Jane: 15 - Kate: +20 Mary: -8 - Cindy: 7
[15, 20, -8, 7]
34
5801

```

Note: In the **InputConverter** class, there is *only one* **convertBy** method (no overloading allowed).

Note: Compiler's warnings telling that the program '*uses unchecked or unsafe operations*' is acceptable; one can get rid of these warnings by adding, in front of the **convertBy** function, the annotation

```
@SuppressWarnings({ "rawtypes", "unchecked" })
```

Deadline: Dec 4 (inclusive)
