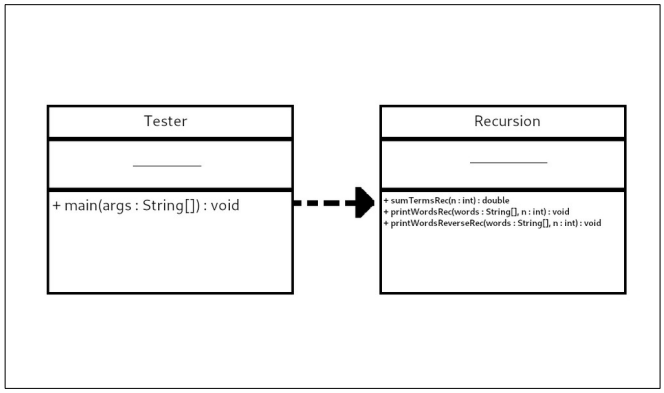
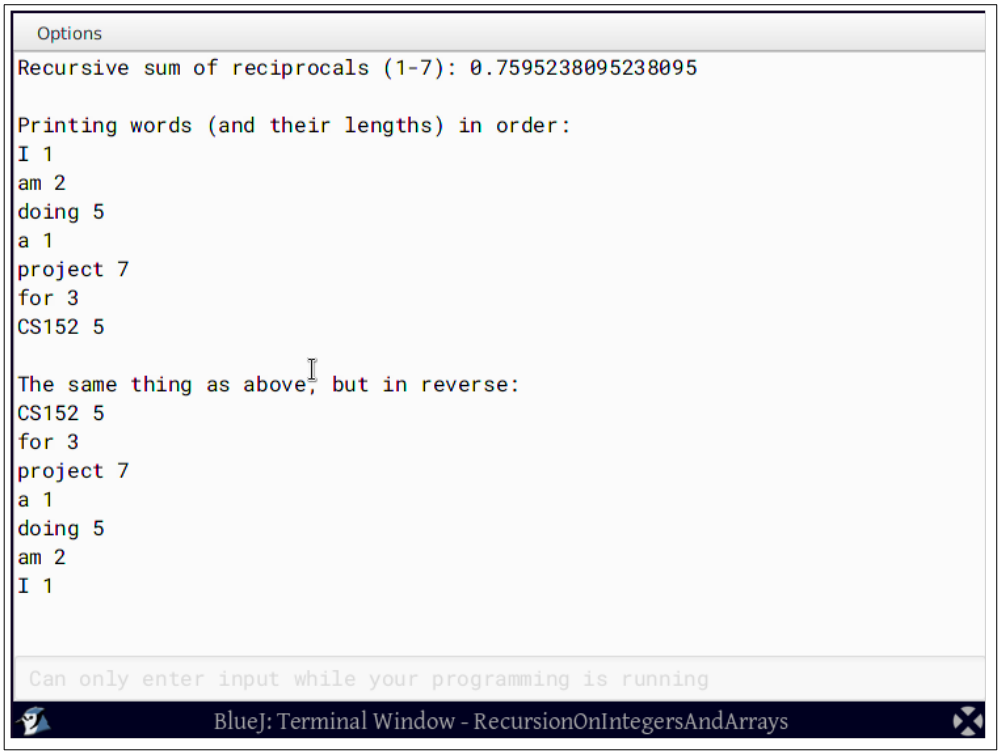
UML


Tester
+ main(args : String[]) : void
Recursion
+ sumTermsRec(n : int) : double
+ printWordsRec(words : String[], n : int) : void
+ printWordsReverseRec(words : String[], n : int) : void

Output


Options
Recursive sum of reciprocals (1-7): 0.7595238095238095
Printing words (and their lengths) in order:
I 1
am 2
doing 5
a 1
project 7
for 3
CS152 5
The same thing as above, but in reverse:
CS152 5
for 3
project 7
a 1
doing 5
am 2
I 1
Can only enter input while your programming is running
BlueJ: Terminal Window - RecursionOnIntegersAndArrays

Tester.java

```
/**
 * @author (Kyle Guarco)
 * @version (July 6, 2020)
 */
public class Tester
{
    public static void main(String[] args)
    {
        Recursion rec = new Recursion();

        System.out.println("Recursive sum of reciprocals (1-7): " + rec.sumTermsRec(7));

        String[] words = "I am doing a project for CS152".split(" ");

        System.out.println("\nPrinting words (and their lengths) in order: ");
        rec.printWordsRec(words, words.length - 1);

        System.out.println("\nThe same thing as above, but in reverse: ");
        rec.printWordsReverseRec(words, words.length - 1);
    }
}
```

Recursion.java

```
/**
 * @author (Kyle Guarco)
 * @version (July 6, 2020)
 */
public class Recursion
{
    public double sumTermsRec(int n)
    {
        if (n <= 1)
            return 1d;

        double num = (n % 2 == 0) ?
                -Math.pow(n, -1) :
                Math.pow(n, -1);

        return sumTermsRec(n - 1) + num;
    }

    public void printWordsRec(String[] words, int n)
    {
        if (n < 0)
            return;

        printWordsRec(words, n - 1);

        String str = words[n];
        System.out.println(str + " " + str.length());
    }

    public void printWordsReverseRec(String[] words, int n)
    {
        if (n < 0)
            return;

        String str = words[n];
        System.out.println(str + " " + str.length());

        printWordsReverseRec(words, n - 1);
    }
}
```