**classDiagram**

    List**<|--** LinkedList

    List**<|--** ArrayList

    LinkedList **..>** Node

    IterableIntegerList **..>** List

    IterableIntegerList **..>** LinkedList

    IterableIntegerList **..>** ArrayList

**class** List **{**

        bool contains**(**value**:** int**)**

        append**(**value**:** int**)**

        int length**()**

**}**

**<<**interface**>>** List

**class** LinkedList **{**

**-**Node**:** head = null

        LinkedList**()**

**(..**. interface methods**)**

**}**

**class** ArrayList **{**

        static int**:** initial\_size

**-**int**:** len = 0

**-**int[] values = []

        ArrayList**()**

**(..**. interface methods**)**

**}**

**class** Node **{**

        next**:**Node = null

        value**:** int

**}**

**class** IterableIntegerList**{**

        testList**(**list**:** IntegerList**)**

        printListBadly**(**list**:** IntegerList**)**

        printList**(**list**:** IntegerList**)**

**(..**. interface methods**)**

**}**

Exercise: Hello Generics (2)

Im guessing that it would print:

Null

World

World

This is because it tries to print the most recent object before any objects are added, resulting in null, then will print out world twice since its getting the most recent object after the word “World” is added in.

Output:

A screen shot of a computer

Description automatically generated

When uncommenting line 14, it the IDE will give a warning saying that you cannot add a string into a Integer, as we declared mro to be able to hold `String`



Exercise: Odd Range Iterator (2)

I changed the Constructer such that if the start of the range is even, it will decrease the current by 1, and if its odd, reduce by 2, I have also done the same conditions to the end values This changes the range such that the start and end values will always be odd.  
  
The reason why it reduces it by 1 or 2 because next() function when changed to increment by 2, seems to skip the first 2 values while incrementing it by 1 increase

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Description automatically generated

A screen shot of a computer program

Description automatically generatedA screen shot of a computer code

Description automatically generated

I also changed the next function so that it increments by 2 instead of 1 such that it only prints out odd or even numbers depending on the starting number (which will always be odd due to the if statements in the constructor changing values to only be odd)

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Description automatically generated

Range version is on the left, OddRange version is on the right

OutputTable for different ranges to make sure it works like in the example.

|  |  |  |  |
| --- | --- | --- | --- |
| Even Odd | Odd Odd | Odd Even | Even Even |
| (-6,5) | (-7,5) | (-7, 6) | (-6,6) |
|  |  |  |  |

Integer List Iterator

Array List implementation along with results compared to the linked list version



A computer screen shot of a program code

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Description automatically generated

Result above the red line is the linked list while the bottom is the arraylist

Exercise: Generic Lists (2)

Append function of GenericLinkedList (efficient version since it tells us to use the efficient version of linkedlist in the first exercise)

A screen shot of a computer code

Description automatically generated

Class for GenericArrayList (efficient version)

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A computer screen shot of a program code

Description automatically generated

Output of the results (appended 20 times to cover all code in the append function for GenericArrayList)

|  |  |
| --- | --- |
| Test Code (Types) | Result |
|  |  |
|  |  |

Exercise: Marks Processing (2)