ArrayList 구현

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```java
public void resize() {

    int arrayCapacity = data.length;

    if (listSize == arrayCapacity) {
        arrayCapacity *= 2;
        data = Arrays.copyOf(data, arrayCapacity);
    }

    else if (listSize < (arrayCapacity / 2)) {
        arrayCapacity /= 2;
        data = Arrays.copyOf(data, arrayCapacity);
    }
    System.out.println(" current arrayCapacity is " + arrayCapacity);
}
```

doubling 기법 구현

전체공간이 다 찬 경우에는 공간을 2배로 늘려주며 사용공간이 전체의 절반보다 작으면 전체공간을 /2 하도록 구현

현재 insert, append, remove 세 개의 명령에 resize가 들어감

→ resize 후에는 현재 사용공간 출력

```java
Run | Debug
public static void main(String args[]) {
    ArrayList<Integer> myList = new ArrayList<>();

    myList.append(5);
    myList.append(11);
    myList.insert(1, 2);
    System.out.println(Arrays.toString(myList.data));

    myList.remove(2);
    System.out.println(Arrays.toString(myList.data));

    myList.update(1, 99);
    System.out.println(Arrays.toString(myList.data));

    // doubling test
    myList.clear();
    for (int i = 0; i < 15; i ++) {
        myList.append(3);
        System.out.print(myList.length());
    }

    for (int i = 0; i < 15; i --) {
        myList.remove(0);
        System.out.print(myList.length());
    }
}
```

```
(base) choijiwon@choejiwon-ui-MacBookAir assignment % cd "/Users/choijiwon/Desk
Note: ArrayList.java uses unchecked or unsafe operations.
Note: Recompile with -Xlint:unchecked for details.
 current arrayCapacity is 5
 current arrayCapacity is 5
 current arrayCapacity is 5
[5, 2, 11, null, null]
 current arrayCapacity is 5
[5, 2, 11, null, null]
[5, 99, 11, null, null]
 current arrayCapacity is 2
1 current arrayCapacity is 4
2 current arrayCapacity is 4
3 current arrayCapacity is 8
4 current arrayCapacity is 8
5 current arrayCapacity is 8
6 current arrayCapacity is 8
7 current arrayCapacity is 16
8 current arrayCapacity is 16
9 current arrayCapacity is 16
10 current arrayCapacity is 16
11 current arrayCapacity is 16
12 current arrayCapacity is 16
13 current arrayCapacity is 16
14 current arrayCapacity is 16
15 current arrayCapacity is 16
14 current arrayCapacity is 16
13 current arrayCapacity is 16
12 current arrayCapacity is 16
11 current arrayCapacity is 16
10 current arrayCapacity is 16
9 current arrayCapacity is 16
8 current arrayCapacity is 8
7 current arrayCapacity is 8
6 current arrayCapacity is 8
5 current arrayCapacity is 8
4 current arrayCapacity is 4
3 current arrayCapacity is 4
2 current arrayCapacity is 2
1 current arrayCapacity is 1
0 current arrayCapacity is 0
```

공간이 차면 2배로 해줌

공간이 절반 아래로 사용 중이면 /2

Linked List 구현

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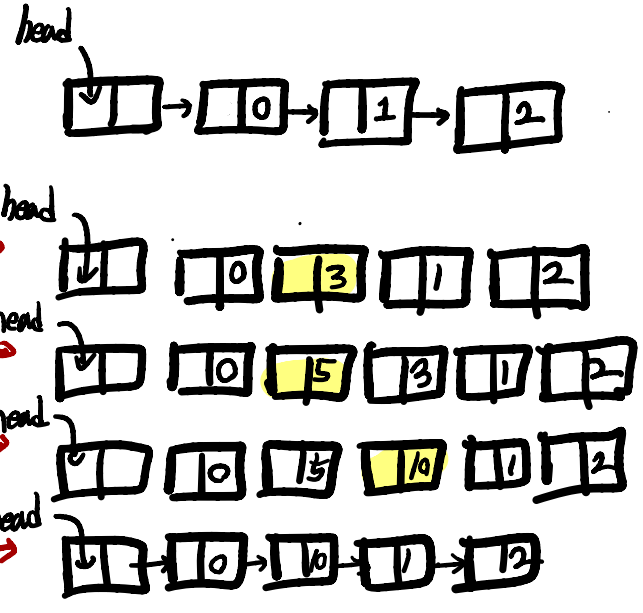
```java
public static void main(String args[]) {
    LinkedList<Integer> myList = new LinkedList<>();

    for (int i = 0; i < 3; i++)
        myList.append(i);


    System.out.println(myList.length());

    myList.insert(1, 3);
    myList.insert(1, 5);

    System.out.println(myList.length());

    myList.update(2, 10);

    System.out.println(myList);

    myList.remove(1);

    System.out.println(myList);

    myList.clear();

    System.out.println(myList);
}
}
```




```
(base) choijiwon@choejiwon-ui-MacBookAir assignment % cd "/Users/choijiwon/Desktop/GitHub-Des
3
5
0, 5, 10, 1, 2,
0, 10, 1, 2,

(base) choijiwon@choejiwon-ui-MacBookAir assignment %
```