

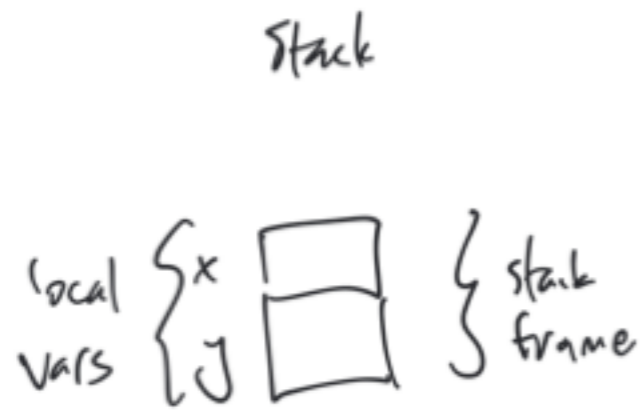
Lecture 3: Software engineering

- A few leftovers on object representation
 - arrays
 - this & methods
 - null
- Software engineering, by example
 - specifications
 - test driven development
 - private / encapsulation

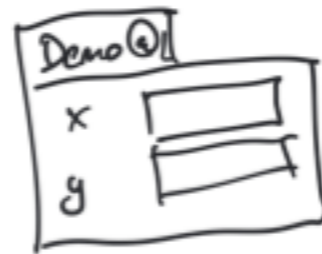
Announcements

- Project 1
- github

- Discussion 1
- Piazza.



heap (objects)



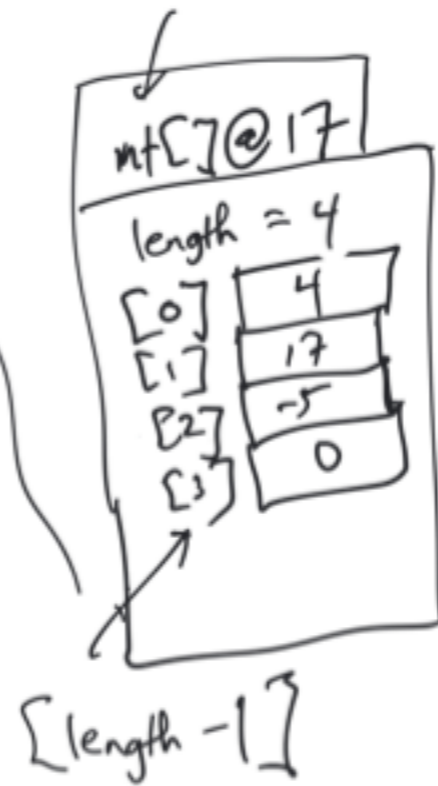
Array is a kind of object, but instead of fields, has numbered entries

int[] is the type of an array of ints

```
int[] a = new int[4]();
```

length

```
a[0] = 4;  
a[1] += 1;
```



```

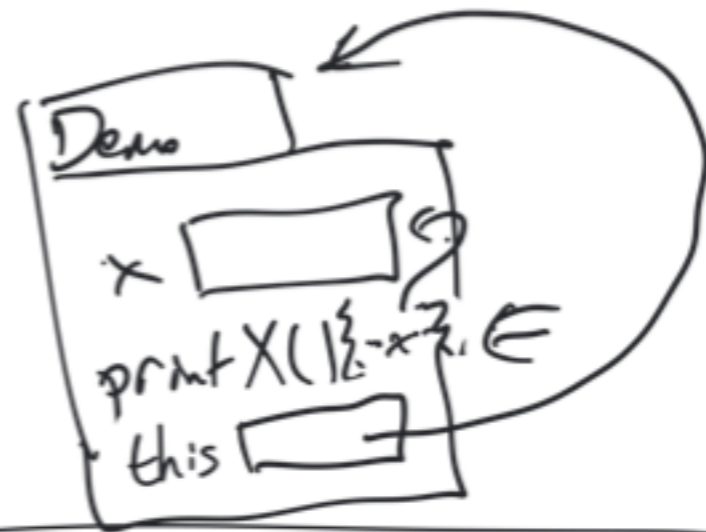
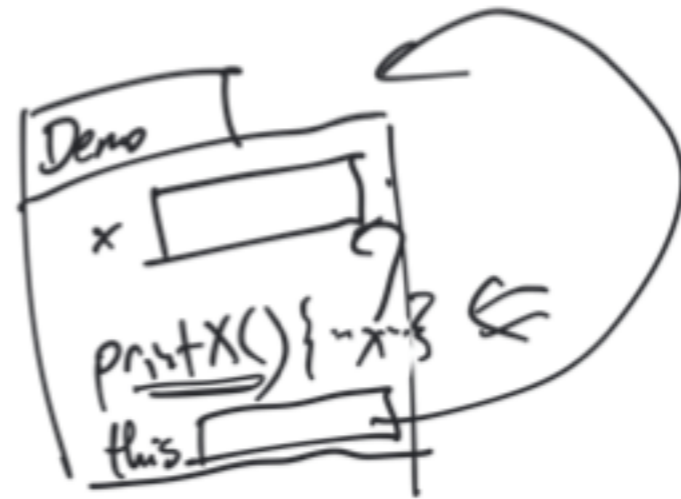
class Demo {
    public int printX() {
        print(x);
    }
}

```

```

Demo d = new Demo()
Demo d2 = new Demo()

```



Every object has a special variable called "this"

inside a method, if x is a field, "x" is shorthand for $this.x$