

# COS 126 Precept

Will Clarkson  
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# Outline

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- ▶ Lecture Questions
- ▶ Arrays
- ▶ Exercises
- ▶ Assignment I



# Arrays

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- ▶ Arrays store items of the same data type
- ▶ What does the syntax look like:
  - ▶ `dataType [] variableName`
  - ▶ This declares a new array which holds `dataType` objects

- ▶ **Initializing Arrays**

- ▶ 3 Different ways:

```
int [] a = new int [5];
```

```
int [] a = new int [5];  
for(int i = 0; i < a.length; i++)  
    a[i] = i;
```

```
int [] a = { 1, 1, 2, 3, 5};
```



# Tips and Errors

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- ▶ **To find length of an array**

- ▶ `arrayName.length` returns the number of elements it can hold
- ▶ NOT the number of things you have put in there

- ▶ **Array out-of-bounds**

accessException in thread "main"

java.lang.ArrayIndexOutOfBoundsException: 5

at OutOfBounds.main(OutOfBounds.java:7)

- ▶ **Program arguments are given as array**

Recall: `public static void main(String [] args)`



# Exercise

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- ▶ Write some programs:
  - ▶ HowMany.java
    - ▶ print message telling us how many command-line arguments were entered
  - ▶ SaveMe.java
    - ▶ transfer command-line arguments to an array of integers and print in reverse order
  - ▶ MysteryArray.java:
    - ▶ Tell me what this program does



# Assignment 1

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- ▶ **TenDice.java**
  - ▶ Keep an array of integers
    - ▶ Tracks how many times we see a particular sum of dice
  - ▶ Repeat following N times (hint: use a for loop)
    - ▶ Flip 10 Dice (hint: use a for loop)
    - ▶ Find sum of those dice
    - ▶ Increment array index associated with that sum.
  - ▶ Print out \*'s
    - ▶ For each index of array print out an appropriate number of \*'s



# Prime Sieve of Eratosthenes

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- ▶ Example of Tracing



Good Luck

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