

CSE 11

Accelerated Intro to Programming

Discussion Section 5

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Arrays
Main → args
loop
example

Logistics

- PA4 due today at 11:59PM
- PA5 Released
- Exam next week

Arrays

- An ordered sequence of values
 - (int, double, String, YourClass, array, ...)

ordered -

fixed size -

indexable -

- Syntax of creating an array:

✓ int[] nums1 = { 4, 2, 7 }; — int array of size 3

int[] nums2 = { };

✓ int[] nums3 = new int[5]; → { 0, 0, 0, 0, 0 } → size 5

int[] nums4 = nums1; // Be careful!!!

String[] strs1 = { "Hello", "CSE11" };

- Array length:

int nums1Length = nums1.length;

String[] st = new String[5]
{ null, . . . }

{ }

Arrays cont'd

index 0 to len - 1

- Use index to access elements in an array:

```
int[] nums1 = { 04, 12, 27 }; ←
```

```
int firstElem = nums1[0]; // 4
```

```
int secondElem = nums1[1]; // 2
```

```
int thirdElem = nums1[2]; // 7
```

```
int fourthElem = nums1[3]; // Index 3 out of bounds for length 3
```

- Modify elements in an array:

```
nums1[2] += 1; // nums1 becomes { 4, 2, 8 }
```

- Array length is fixed:

- Can modify elements, but cannot add/delete elements

- nums1 = { 4, 2, 7, 8 } // need to assign a different array

Main

• public static void main (String[] args) { ... }

• You saw this in PA0.5 int main class Discussion Example

• Entry point to a Java program

- javac DiscussionExamples.java

- java DiscussionExamples

- There needs to be a main method in the class DiscussionExamples

return -1 main(.) {
~

• args – an array of Strings (command line arguments)

- java DiscussionExamples some some arguments

n

Loop Basics

1. init statement
2. loop condition
3. loop body

4. update
5. repeat from step 2

- How to access elements in a very very long array?
- Loops

- For-loop

```
for (int i = 0; i < arr.length; i++) {
```

```
    System.out.println(arr[i]);
```

```
}
```

- For-each loop

```
for (int element : arr) {
```

```
    System.out.println(element);
```

```
}
```

- While loop

```
int i = 0;
```

```
while (i < arr.length) {
```

```
    System.out.println(arr[i]);
```

```
    i++;
```

```
}
```

→ initialization statement

→ loop condition

int[] arr = { 1, 2, 5 }

↓
3

update expression

iterator

loop condition

1
2
3
5

loop for accessing and printing

int[] arr = { 1, 2, 3 }

System.out.println(arr)

loop body

1 2 5

PA5

Thanks!