

CSE 121 – Lesson 17

Miya Natsuhara

Spring 2023

Music: [121 23sp Lecture Vibes](#) 



[sli.do #cse121](#)

TAs:

<i>Jasmine</i>	<i>Atharva</i>	<i>Mia</i>	<i>Justin</i>
<i>Shananda</i>	<i>Julia</i>	<i>Archit</i>	<i>Aishah</i>
<i>Vidhi</i>	<i>Anju</i>	<i>Grace</i>	<i>Claire</i>
<i>Larry</i>	<i>Lydia</i>	<i>Kailye</i>	<i>Lydia</i>
<i>Jacqueline</i>	<i>Jonus</i>	<i>Joshua</i>	<i>Kai</i>
<i>Afifah</i>	<i>Hugh</i>	<i>James</i>	

Announcements, Reminders

- P3 due Wednesday, May 31 11:59pm
- Retake form for 5/30 will be released later today
 - Only Quiz 2 is eligible
 - **Last retake opportunity of the quarter**
- Gumball (& friends) Visit on Monday, June 5 1:00pm-3:00pm
- Final Exam: **Thursday, June 8 2:30pm-4:20pm**
 - Left-Handed Seating Request form posted on Ed and closes Mon 5/29 EOD
 - TA-led Final Review Session Tuesday, June 6 4:30pm-7:00pm
- Bob Bandes TA Award Nominations Open!

Poll in with your answer!



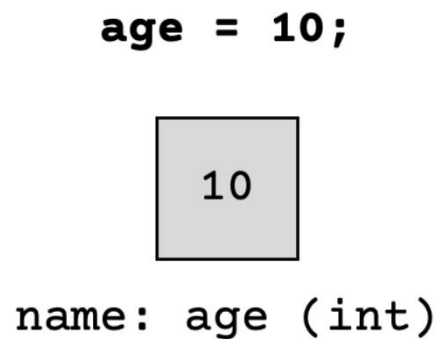
What would the array a store at the end of this arrayMystery method if $\{-20, 20, 26, 32, 50, 3\}$ was passed in?

```
public static void arrayMystery(int[] a) {  
    for (int i = a.length - 1; i >= 1; i--) {  
        if (a[i] > a[i - 1] + 10) {  
            a[i - 1] = a[i - 1] + 5;  
        }  
    }  
}
```

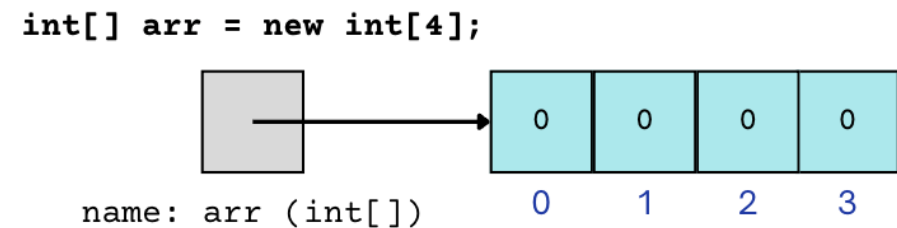
- A. $\{-20, 20, 26, 32, 50, 3\}$
- B. $\{-15, 25, 31, 37, 55, 8\}$
- C. $\{-15, 25, 31, 37, 50, 3\}$
- D. $\{-15, 20, 26, 37, 50, 3\}$

(PCM) Value Semantics vs. Reference Semantics

- Applies when working with primitive types
- Variables/parameters hold a *copy* of the actual value



- Applies when working with objects
- Variables/parameters hold a *reference* to the object

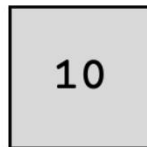


(PCM) Value Semantics vs. Reference Semantics

```
int a = 3;  
int b = a;  
a = 99;
```

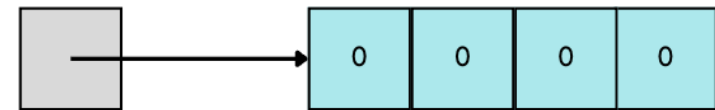
```
int[] list1 = {4, 8, 15, 16, 23};  
int[] list2 = list1;  
list1[1] = 99;
```

age = 10;



name: age (int)

int[] arr = new int[4];



name: arr (int[])

0 1 2 3

(PCM) Value Semantics vs. Reference Semantics

```
boolean test = true;
flipValue(test);

public static void flipValue(boolean b) {
    b = !b;
}
```

```
boolean[] tests =
    {true, true, false, true, false, false};
flipValues(tests);

public static void flipValues(boolean[] b) {
    for (int i = 0; i < b.length; i++) {
        b[i] = !b[i];
    }
}
```

Poll in with your answer!



```
public static void main(String[] args) {
    int x = 0;
    int[] a = new int[4];
    x++;

    mystery(x, a);
    System.out.println(x + " " + Arrays.toString(a));

    x++;
    mystery(x, a);
    System.out.println(x + " " + Arrays.toString(a));
}
```

```
public static void mystery(int x, int[] a) {
    x++;
    a[x]++;
    System.out.println(x + " " + Arrays.toString(a));
}
```

Four lines of output would be produced by this code. What would those four lines be?

Poll in with your answer!



```
public static void main(String[] args) {
    int x = 0;
    int[] a = new int[4];
    x++;

    mystery(x, a);
    System.out.println(x + " " + Arrays.toString(a));

    x++;
    mystery(x, a);
    System.out.println(x + " " + Arrays.toString(a));
}

public static void mystery(int x, int[] a) {
    x++;
    a[x]++;
    System.out.println(x + " " + Arrays.toString(a));
}
```