Java Arrays Part 2 Notes

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1 Enhanced For Loop

- **Syntax:** *for (DATA_TYPE ITER_VAR : ARR_VAR)* {...}
  - *:* Means 'in', like python

Example:

```
    String[] classmates = {"Ben", "Johnny", "Pasan"};
    for (String classmate : classmates) {
        System.out.printf("%s is my class friend\n", classmate);
    }

```

Listing 1: lesson_01/Explore.java

Notes:

- Files can be compiled and displayed by typing *javac Explore.java && java Explore* in terminal

2 Quiz 1

1. The reason you can use an array in an enhanced for loop is because

   A. arrays are special. They are the only type of object you can use in an enhanced for loop.

   B. they are contiguous.

   C. arrays are iterable. Any object that is considered iterable can be used.

Answer: C

2. The code below can be read as:

```
    String[] flavors = {"vanilla", "chocolate", "strawberry"};
    for (String flavor : flavors) {
        // ...
    }
```

A. For each flavor in the flavors array...

B. Flavors should be reduced to a single value

C. Once flavor is set, concatenate ...

Answer: A

3 Ye Olde Unenhanced For Loop

- **Syntax:** *for (int i = 0; i <ARR_VAR.length; i++) ...*

```
    String[] classmates = {"Ben", "Johnny", "Pasan"};
    for (int i = 0; i < classmates.length; i++) {
        String classmate = classmate[i];
        System.out.printf("%s is my class friend", classmate);
    }
```

Listing 2: lesson_03/Explore.java

4 Exercise 1

- Solution included in *exercise_1.java*

5 Multidimensional Arrays

- **Syntax:** *DATA_TYPE[][] ARR_VAR = ..., ..., ..., ...*

```
1   import java.util.Arrays;
2
3   public class Explore {
4       public static void main(String[] args) {
5           int[][] scoreBoards = {
6               {1,2,4,2,6,5,4},
7               {2,3,5,1,1,2,3},
8               {4,4,2,1,2,2,1}
9           };
10          System.out.println(Arrays.toString(scoreBoards[0]));
11          System.out.println(scoreBoards[1][2]);
12      }
13  }
14
```

Listing 3: lesson_05/Explore.java

Notes:

- Files can be compiled and displayed by typing *javac Explore.java && java Explore* in terminal
- *scoreBoards[0]* alone prints its memory location, like C :)

6 Quiz 2

1. Considering the following code:

```
1   String[][] bradys = {
2       {"Mike", "Carol", "Alice"},
3       {"Bobby", "Peter", "Greg"},
4       {"Cindy", "Jan", "Marsha"}
5   };
6
```

What is the value at bradys[2][2]

A. Marsha

B. Greg

C. Peter

Answer: A

2. Considering the following code:

```
String[][] bradys = {
    {"Mike", "Carol", "Alice"},
    {"Bobby", "Peter", "Greg"},
    {"Cindy", "Jan", "Marsha"}
};

```

How would you reference Alice

A. bradys(0, 2)
B. bradys[2][0]
C. bradys[0][2]
D. bradys[1][3]

Answer: C

7 Looping Over 2D Arrays

- **Syntax:**
  for(int i = 0; i <ARR_VAR.length; i++) {
  for(int j = 0; j <ARR_VAR[i].length; j++) {...}
  }

  Example:

```
int[][] scoreBoards = {
    {1,2,4,2,6,5,4},
    {2,3,5,1,1,2,3},
    {4,4,2,1,2,2,1}
};

for (int i = 0; i < scoreBoards.length; i++) {
    for (int j = 0; j < scoreBoards[i].length; j++) {
        System.out.println(scoreBoards[i][j]);
    }
}

```

Listing 4: lesson_07/Explore.java

  Notes:

  – Files can be compiled and displayed by typing *javac Explore.java && java Explore* in terminal