

Problem Set 2, Part I

Problem 1: Variable scope

- 1) e, i
- 2) e, i, a, b, j
- 3) e, i, a,
- 4) e, i, y
- 5) c
- 6) c, d

Problem 2: String objects and their methods

2-1

- a) `s1.substring(6) + " " + s2.substring(0, 2)`
- b) `s1.substring(6,7) + s1.substring(9) + " " + s2.substring(3,8)`
- c) `s1.substring(0,1).toUpperCase() + s1.substring(9).toUpperCase()`
`+ s2.substring(8)`
- d) `s1.substring(0,1) + s1.substring(9,10) + s2.substring(0,2)`
- e) `s1.charAt(8)`
- f) `s1.substring(8,9)`
- g) `s1.substring(0,1) + s2.substring(0,1)`
- h) `s2.length()`
- i) `s1.replace('t','u')`

Problem 3: Understanding code that uses an array

3-1)

i	values
-	{0, 1, 2, 3, 4, 5, 6, 7}
1	{0, 0, 2, 3, 4, 5, 6, 7}
3	{0, 0, 2, 2, 4, 5, 6, 7}
5	{0, 0, 2, 2, 4, 4, 6, 7}
7	{0, 0, 2, 2, 4, 4, 6, 6}

3-2) contents of array just before the method returns:

{6, 0, 2, 2, 4, 4, 6, 6}

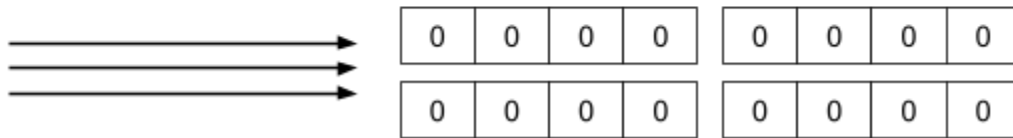
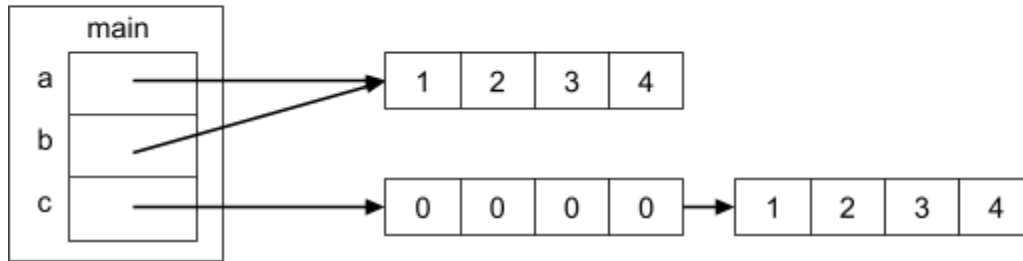
3-3)

We will see the the changes made to the array as lists are mutable

Problem 4: Arrays and memory diagrams

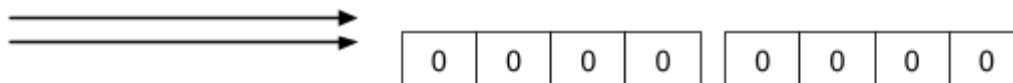
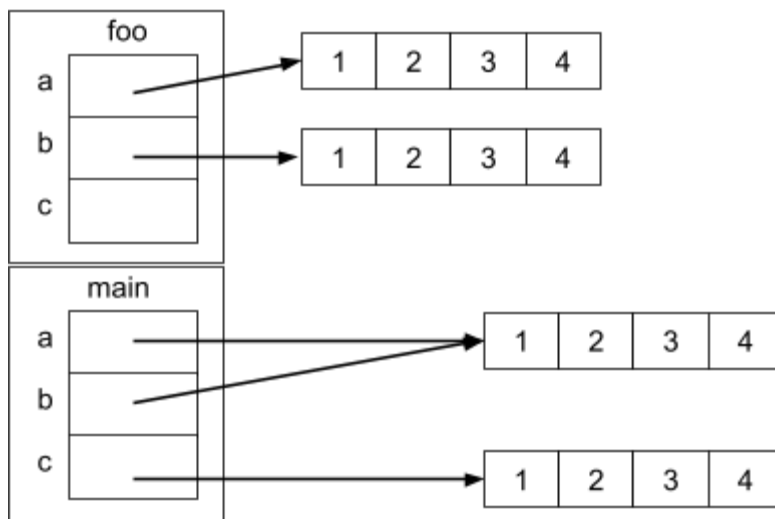
4-1)

Stack

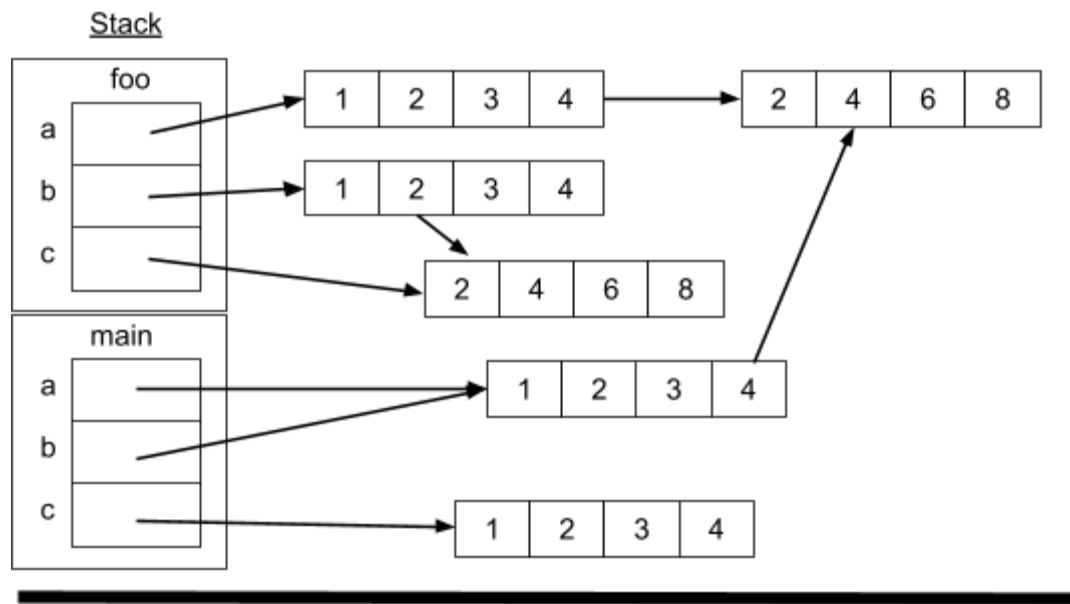


4-2)

Stack

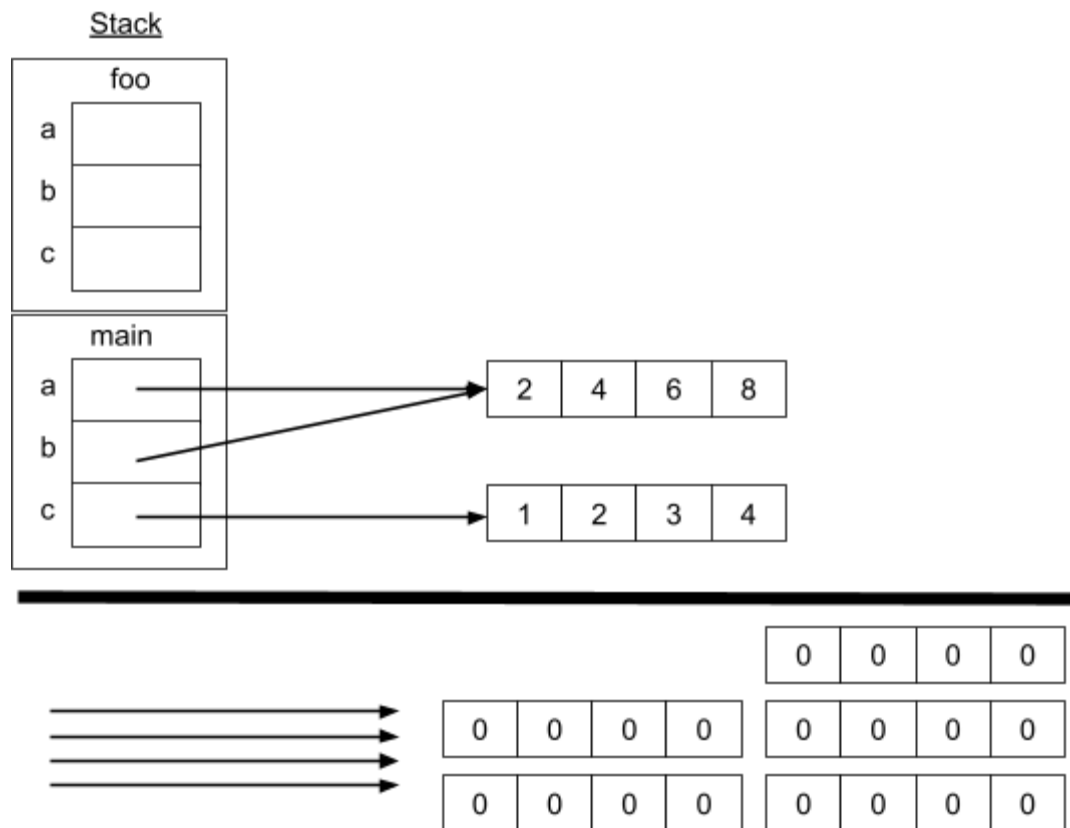


4-3)



0	0	0	0
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4-4)



Problem 5: Two-dimensional arrays

5-1)

```
int[][] twoD = {{1,2,3,4},
                {5,6,7,8},
                {9,10,11,12},
                {13,14,15,16}};
```

```
twoD[2][1] = 30;
```

5-2)

```
int[][] twoD = {{1,2,3,4},
                {5,6,7,8},
                {9,10,11,12},
                {13,14,15,16}};
```

```
for (int i = 0; i < twoD.length; i++) {
    System.out.println(twoD[i][twoD[0].length-1]);
}
```

5-3)

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