n1

data
5

next

n2

data
10

next

data
20

next

data
15

next

n3

data
25

next

n1

data
5

next

n2

data
10

next

data
20

next

n3

data
15

next

data
25

next
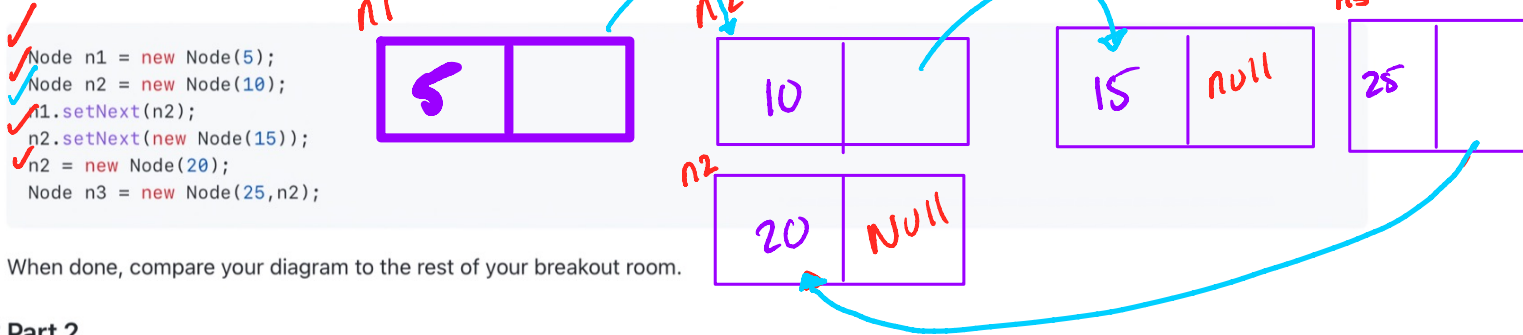
```java
public class Driver{
  public static void main(String[] args) {

    //Create node setup
    Node p = new Node("5");
    Node a = new Node("10");
    Node b = new Node("15");
    Node c = new Node("20");

    p.setNext(a);
    a.setNext(b);
    b.setNext(c);

    //Create a new Node variable set it to point to the node with the 10 in it.
    Node d = p.getNext();

    //Create a new Node variable and instantiate it to a new Node with a value of 30.
    Node e = new Node("30");

    //Write the code to insert this new Node between the 10 and the 15
    e.setNext(p.getNext().getNext());
    p.getNext().setNext(e);

    System.out.println(p.getData());
    System.out.println(p.getNext().getData());
    System.out.println(p.getNext().getNext().getData());
    System.out.println(p.getNext().getNext().getNext().getData());
    System.out.println(p.getNext().getNext().getNext().getNext().getData());
  }
}
```

part 1

Using the code for Node.java in this directory, trace through the following code segment one line at a time. As you trace through the code, draw a diagram of the cells and pointers that result.

```java
Node n1 = new Node(5);
Node n2 = new Node(10);
n1.setNext(n2);
n2.setNext(new Node(15));
n2 = new Node(20);
Node n3 = new Node(25,n2);
```

(Handwritten diagram: n1 → [5 |], n2 → [10 |], → [15 | null], A3 → [25 |], n2 → [20 | Null])

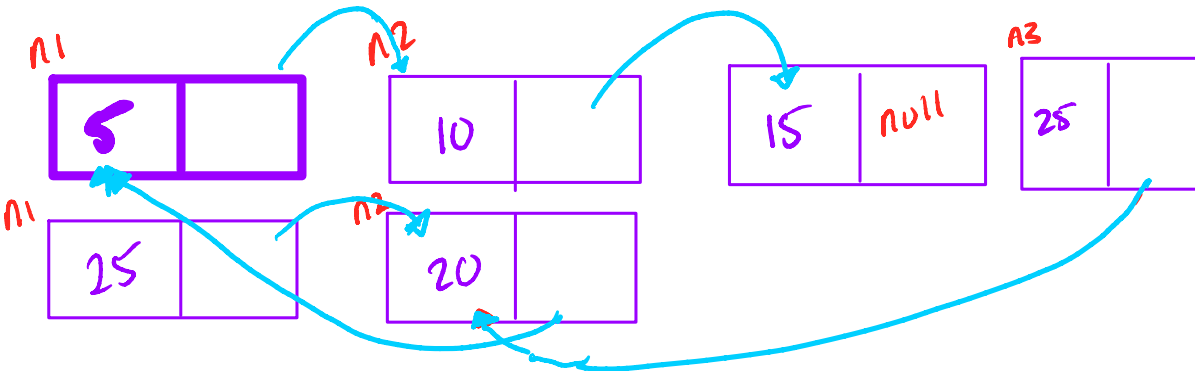When done, compare your diagram to the rest of your breakout room.

Part 2

Copy over your diagram from part 1 and continue to modify it by tracing through these lines of code:

```
n2.setNext(n1);
n1=n3;
```

Once again, share the diagram with your room.

(Handwritten diagram: n1 → [5 |], n2 → [10 |], A3 → [15 | null], [25 |], n1 → [25 |], n2 → [20 |])

```java
public class Driver{
    public static void main(String[] args) {
        Node n1 = new Node("5");
        Node n2 = new Node("10");
        n1.setNext(n2);
        n2.setNext(new Node("15"));
        n2 = new Node("20");
        Node n3 = new Node("25",n2);
        n2.setNext(n1);
        n1=n3;

        System.out.println(n1.getData());
        System.out.println(n2.getData());
        System.out.println(n3.getData());

        System.out.println(n1.getNext().getData());
        System.out.println(n3.getNext().getData());
        System.out.println(n2.getNext().getData());
    }
}
```

Part 3

Given this diagram:

```
p--+
   |
   v
+-----+-----+        +-----+-----+        +-----+-----+        +-----+-----+
|  5  |     |------->| 10  |     |--->| 15  |     |----->| 20  |     |
|     |     |        |     |     |    |     |     |      |     |     |
+-----+-----+        +-----+-----+        +-----+-----+        +-----+-----+
```

There already exists a Node variable P which points to (refers to) the node with the 5 in its data.

Write a code fragment to:

1. Create a new Node variable set it to point to the node with the 10 in it.
2. Create a new Node variable and instantiate it to a new Node with a value of 30.
3. Write the code to insert this new Node between the 10 and the 15

🔗 Submission

Scan or take a photo of your work and upload to your ds/Pointers folder/directory. Name the file pointers.png, pointers,pdf, pointers.gif, or pointers.jpg depending on the file format.

---

ds/pointers/Driver.java ×

Console Shell Markdown

```java
 1 ▼ public class Driver{
 2 ▼   public static void main(String[] args) {
 3         Node n1 = new Node("5");
 4         Node n2 = new Node("10");
 5         n1.setNext(n2);
 6         n2.setNext(new Node("15"));
 7         n2 = new Node("20");
 8         Node n3 = new Node("25",n2);
 9         n2.setNext(n1);
10         n1=n3;
11
12         System.out.println(n1.getData());
13         System.out.println(n2.getData());
14         System.out.println(n3.getData());
15
16         System.out.println(n1.getNext().getData());
17         System.out.println(n3.getNext().getData());
18         System.out.println(n2.getNext().getData());
19   }
20 }
21
```

Pinch out for a bigger view

```
~/cohort-3-summer-work-dmoste$ cd ds/pointers
~/.../ds/pointers$ java Driver
5
20
25
10
20
Exception in thread "main" java.lang.NullPointerEx
ception
        at Driver.main(Driver.java:16)
~/cohort-3-summer-wo
~/cohort-3-summer-work-dmoste$ cd ds/pointers
~/.../ds/pointers$ java Driver
25
20
25
20
20
5
~/cohort-3-summer-work-dmoste$ []
```