

Methods - July 19, 2022

Trace Drawing Loops

pg1-2: Task 1 - Mystery(5)

pg3: Task 2 - Reverse

Group 2:

Yeidy, David M, Kate, Ashley

Task 1: Trace Diagram 7/19/22

```
public static int mystery(int n) {  
    if (n == 0)  
        return 1;  
    else  
        return 2 * mystery(n - 1);  
}
```

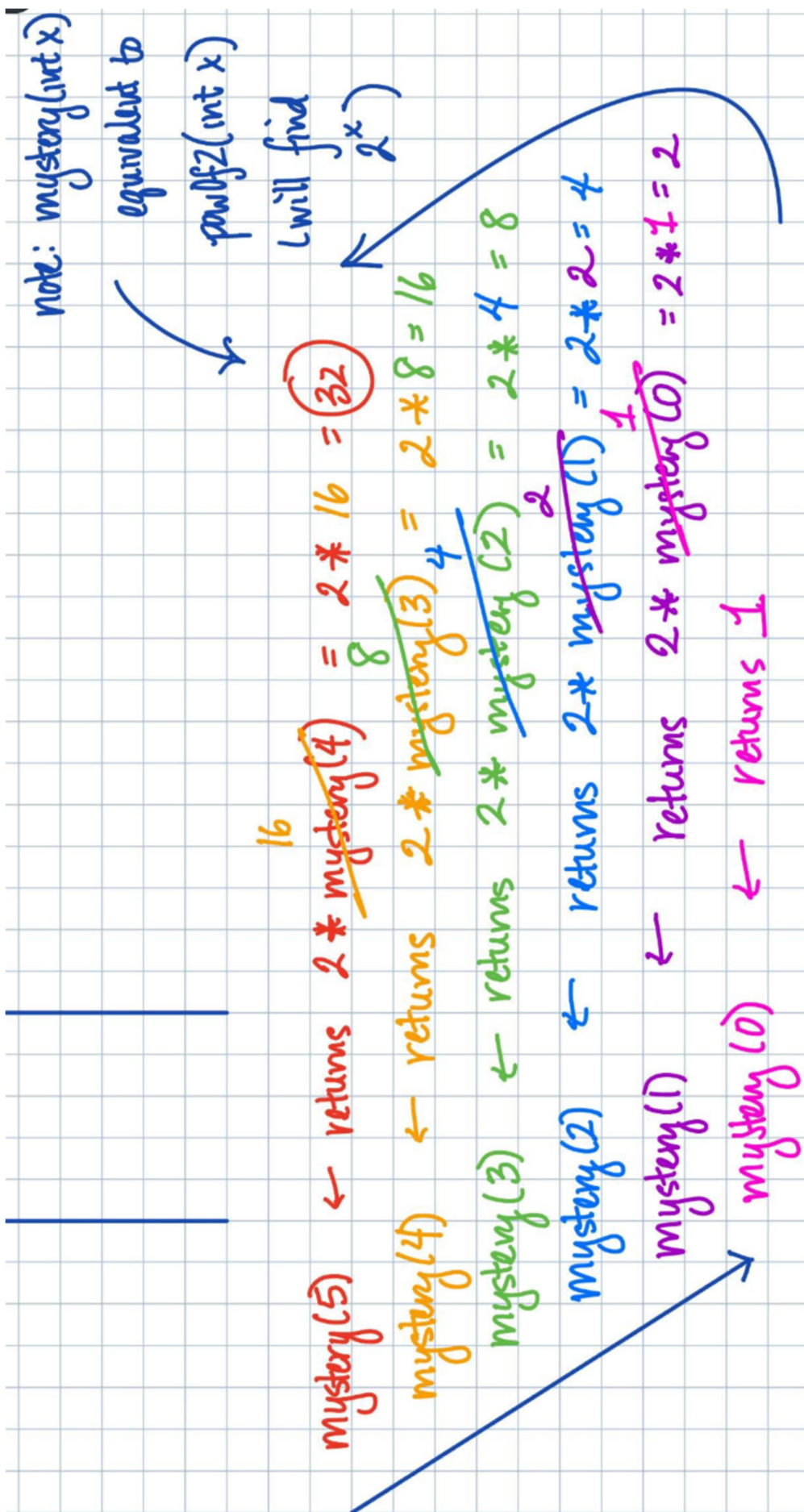
mystery(5);

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| Loop # | n | Work it out! | return |
|--------|--------|------------------------------|-------------------------------|
| - | n == 0 | return 1 | Task find: mystery(5) |
| - | n != 0 | 2 x mystery(n - 1) | |
| - | 5 | parameter n = 5 | 32 |
| 1 | 4 | 2 x mystery(4) | 2 x mystery(4) 2 x 16 = 32 |
| 2 | 3 | 2 x mystery(3) | 2 x mystery(3) 2 x 8 = 16 |
| 3 | 2 | 2 x mystery(2) | 2 x mystery(2) 2 x 4 = 8 |
| 4 | 1 | 2 x mystery(1) | 2 x mystery(1) 2 x 2 = 4 |
| 5 | 0 | 2 x mystery(0) | 2 x mystery(0) 2 x 1 = 2 |
| 6 | 0 | parameter n == 0 return 1 | 1 |

With
Color
Coding

→



Task 2: Trace Diagram Reverse 7/19/22
Group 2: Yeidy, Kate, Ashley, David

```
public static String reverseR( String s ) {
    if ( s.length() < 2 ) {
        return s;
    }
    else {
        return reverseR( s.substring(1, s.length()) )
            + s.substring(0, 1);
    }
}
```

| Loop # | s | Work it out! | return |
|--------|------|---------------------|-----------------------------|
| - | even | reverseR(ven) + "e" | reverseR(ven) + "e" neve |
| 1 | ven | reverseR(en) + "v" | reverseR(en) + "v" nev |
| 2 | en | reverseR(n) + "e" | reverseR(n) + "e" ne |
| 3 | n | | n |

reverseR("even")

reverseR

reverses String s

Working on: reverseR("even")

tofr 1:39 PM

YOUR BREAKOUT MISSION (20min):

- Using whatever media is most conducive for your team, trace the String reverser fxn call below.
- DELIVERABLE: diagram (PDF, image file, screenshot copy/paste) posted to [#flex-your-kts](#) "<TNP>'s trace diagram for reverseR("even")"
- GOAL: Any teammate able to re-create your diagram as a live demo -- or at least walk through.
- SlackerTASK: stay tuned for check-ins

```
public static String reverseR( String s ) {
    if ( s.length() < 2 ) {
        return s;
    }
    else {
        return reverseR( s.substring(1, s.length()) )
            + s.substring(0, 1);
    }
}
```

reverseR("even")

reverseR("even") → return ~~reverseR("ven")~~ + "e" = "nev" + "e" = "neve"

reverseR("ven") → return ~~reverseR("en")~~ + "v" = "ne" + "v" = "nev"

reverseR("en") → return ~~reverseR("n")~~ + "e" = "n" + "e" = "ne"

reverseR("n") → return "n"