```
 1:int gcd(int m, int n)
 2:{
 3:    int x;
 4:
 5:    /* base case: check for 0 */
 6:    if (n == 0) return(1);
 7:
 8:    /* recurse */
 9:    x = gcd(n, m % n);
10:
11:    /* done! */
12:    return(x);
13:}
```

```
14:
15:int main(void)
16:{
17:    int n;
18:
19:    n = gcd(126,28);
20:    printf("GCD of 126 and 28 is %d\n",
n);
21:    return(0);
22:}
```

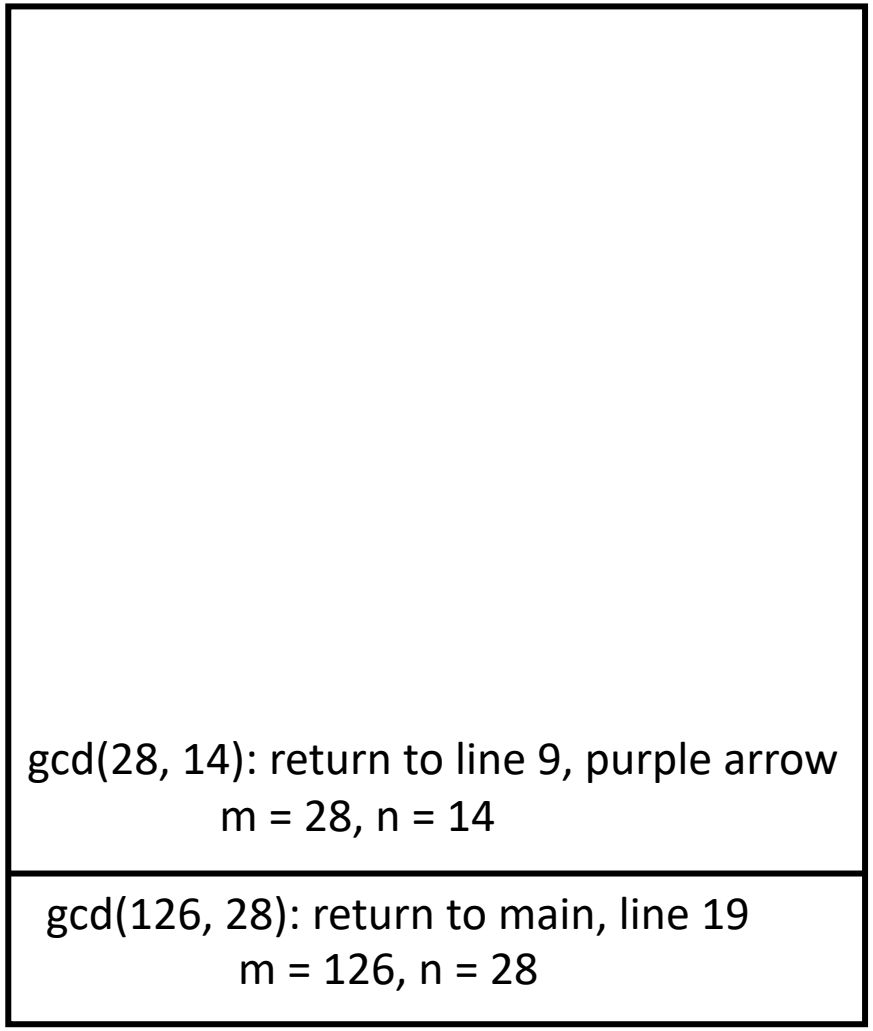
Initial call to gcd: gcd(m ← 126, n ← 28)

```
 1: int gcd(int m, int n)
 2: {
 3:     int x;
 4:
 5:     /* base case: check for 0 */
 6:     if (n == 0) return(1);
 7:
 8:     /* recurse */
 9:     x = gcd(n, m % n);
10:
11:     /* done! */
12:     return(x);
13: }
```

gcd(126, 28): return to main, line 19
m = 126, n = 28

gcd(m ← 126, n ← 28) :
6: condition false, so skip
9: call gcd(28, 14)

```
 1: int gcd(int m, int n)
 2: {
 3:     int x;
 4:
 5:     /* base case: check for 0 */
 6:     if (n == 0) return(1);
 7:
 8:     /* recurse */
 9:     x = gcd(n, m % n);
10:
11:     /* done! */
12:     return(x);
13: }
```

gcd(m ← 28, n ← 14) :

6: condition false, so skip

9: call gcd(14, 0)

```
 1: int gcd(int m, int n)
 2: {
 3:     int x;
 4:
 5:     /* base case: check for 0 */
 6:     if (n == 0) return(1);
 7:
 8:     /* recurse */
 9:     x =    gcd(n, m % n);
10:
11:     /* done! */
12:     return(x);
13: }
```

gcd(14, 0): return to line 9, red arrow m = 14, n = 0
gcd(28, 14): return to line 9, purple arrow m = 28, n = 14
gcd(126, 28): return to main, line 19 m = 126, n = 28

gcd(m ← 14, n ← 0) :

6: condition true, so return 14

```
 1: int gcd(int m, int n)
 2: {
 3:     int x;
 4:
 5:     /* base case: check for 0 */
 6:     if (n == 0) return(1);
 7:
 8:     /* recurse */
 9:     x =    gcd(n, m % n);
10:
11:     /* done! */
12:     return(x);
13: }
```

gcd(14, 0): return to line 9, red arrow m = 14, n = 0; return 14
gcd(28, 14): return to line 9, purple arrow m = 28, n = 14
gcd(126, 28): return to main, line 19 m = 126, n = 28

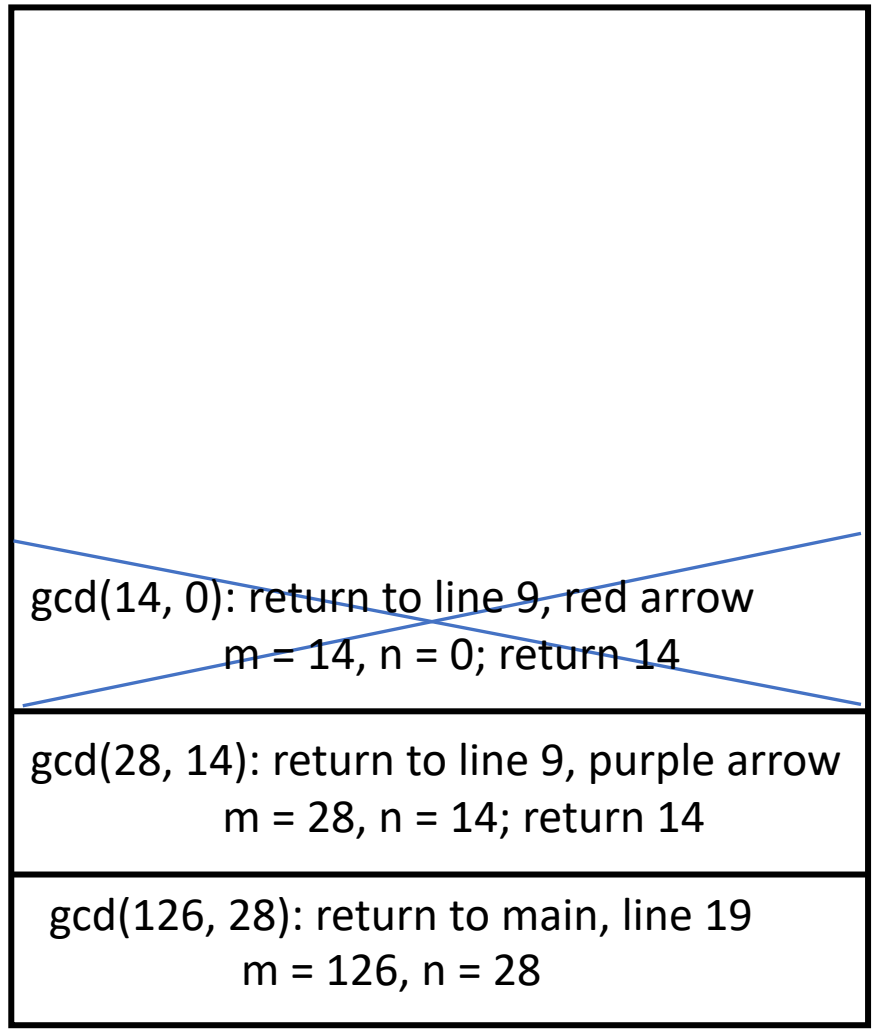
gcd(m ← 28, n ← 14) :

6: condition false, so skip

9: call gcd(14, 0); return 14

12: return 14

```
 1: int gcd(int m, int n)
 2: {
 3:     int x;
 4:
 5:     /* base case: check for 0 */
 6:     if (n == 0) return(1);
 7:
 8:     /* recurse */
 9:     x =    gcd(n, m % n);
10:
11:     /* done! */
12:     return(x);
13: }
```



gcd(m ← 126, n ← 28) :

6: condition false, so skip

9: call gcd(28, 14); return 14

12: return 14

```
 1: int gcd(int m, int n)
 2: {
 3:     int x;
 4:
 5:     /* base case: check for 0 */
 6:     if (n == 0) return(1);
 7:
 8:     /* recurse */
 9:     x =    gcd(n, m % n);
10:
11:     /* done! */
12:     return(x);
13: }
```