# CS240: Data Structures And Algorithms
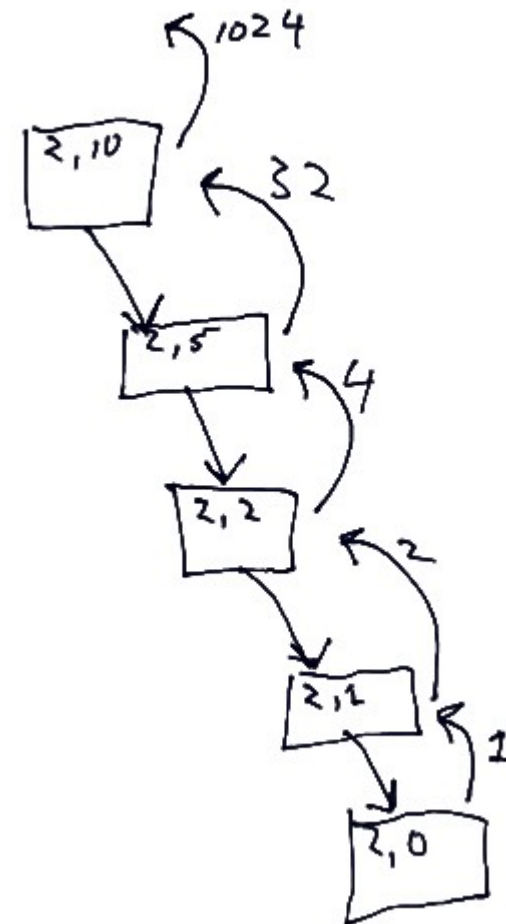
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# Example of Tracing Linear Recursion

```
def fun1(x, n):
    if n == 0:
        return 1
    else:
        p = fun1(x, n // 2)
        result = p * p
        if n % 2 == 1:
            result *= x
        return result

print(fun(2, 10))
```

# Example of Tracing Binary Recursion

```python
def unique(items, start, stop):
    if stop - start <= 1:
        return True
    elif items[start] == items[stop - 1]:
        return False
    elif not unique(items, start + 1, stop):
        return False
    elif not unique(items, start, stop - 1):
        return False
    return True


items = [1, 2, 2, 5]
print(unique(items, 0, 4))
```