

```
public static int compute(int value) {  
    if (value == 1) {  
        return 1;  
    }  
  
    return compute(value - 1) * value;  
}
```

The diagram illustrates the execution of the recursive function `compute` for the input `5`. The call stack is represented by colored circles: purple for the initial call, yellow for recursive calls, and orange for return values. A red line connects the calls in sequence, showing the flow from the initial call down to the base case and back up through the return values.

- Initial call: `compute(5)` (purple circle)
- Recursive call: `compute(4)` (yellow circle)
- Recursive call: `compute(3)` (yellow circle)
- Recursive call: `compute(2)` (yellow circle)
- Base case: `compute(1)` (yellow circle)
- Return values: `1` (orange circle), `2` (orange circle), `6` (orange circle), `24` (orange circle), `120` (orange circle)