General Assembly

STUDY GUIDE

RECURSION

Key Terms

- **Recursion:** When a function calls itself, or another way of breaking down a large problem into smaller bits.
- **Parameters:** Anything you need to keep track of while the function performs.
- **Recursive Helper Function:** A non-recursive parent function in which the recursive function is defined and called. Eliminates the need for the recursive function to hold onto parameters, and is used when a recursive function needs to branch out in several different directions.

Cheat Sheet

Components of a recursive function:

- **Base case:** When a recursive function can stop and return a specific value.
- **Action:** What the function should be doing.
- **Recursive case:** When the function calls itself and continues to run.

Steps to writing a recursive function:

1. Define your function and parameters.
2. Define your base case and return the computed result.
3. Perform the action step.
4. Return the function with new arguments to make progress toward the base case.

When to use recursion:

- If calculating all possible combinations of elements.
- If checking all possible routes between two destinations.
- For problems that can be broken down into smaller subproblems.
- In any situation that requires exploring multiple possibilities or paths.