**Greedy algorithms**

A greedy algorithm is simple: at each step, pick the optimal move. It might not result in the optimal solution all the time but it will be always close if not correct.

Greedy Steps:

- Make a greedy choice.

- Prove that it is a safe move. (aka prove that you’re safely greedy).

- Reduce to a subproblem.

- Solve the subproblem.

What is the larges number consisting of digits 3,9,5,9,7,1.

1. Make a greedy choice: Choose the largest number
2. Make sure its safe: Confirm its a valid number ie (not zero) or > 9
3. Reduce to a sub problem. Remove this number from the list
4. Solve subproblem: Repeat steps 1 thru 4 until list is empty

**Array tips**

**Cycle:** Cycle through the array at either end. Good for following problems

1. Reverse string in place.
2. Confirming if 2 elements in **sorted** array have specific value

**Bit manipulation**