# Simplify Path

For this problem we must simulate Unix style path normalization.

## Key Idea:

- Split the path by '/'.
- Use a stack to build the canonical path:
  1. Ignore empty parts and . (current directory).
  2. When encountering .., pop from the stack if not empty (go up a level).
  3. Otherwise, push normal directory names (including names like ... which are valid).
- Reconstruct the path by joining stack with '/'.

## Algorithm:

1. Split path by '/'.
2. For each component:
   - Skip "" or "."
   - If ".." → pop stack (if not empty).
   - Else → push component.
3. Join stack with '/' and prepend '/'.
4. If stack is empty → return "/".

## Complexity:

- Time: O(n) (splitting and processing each component once).
- Space: O(n) (stack to store directories).