

# Backtracking

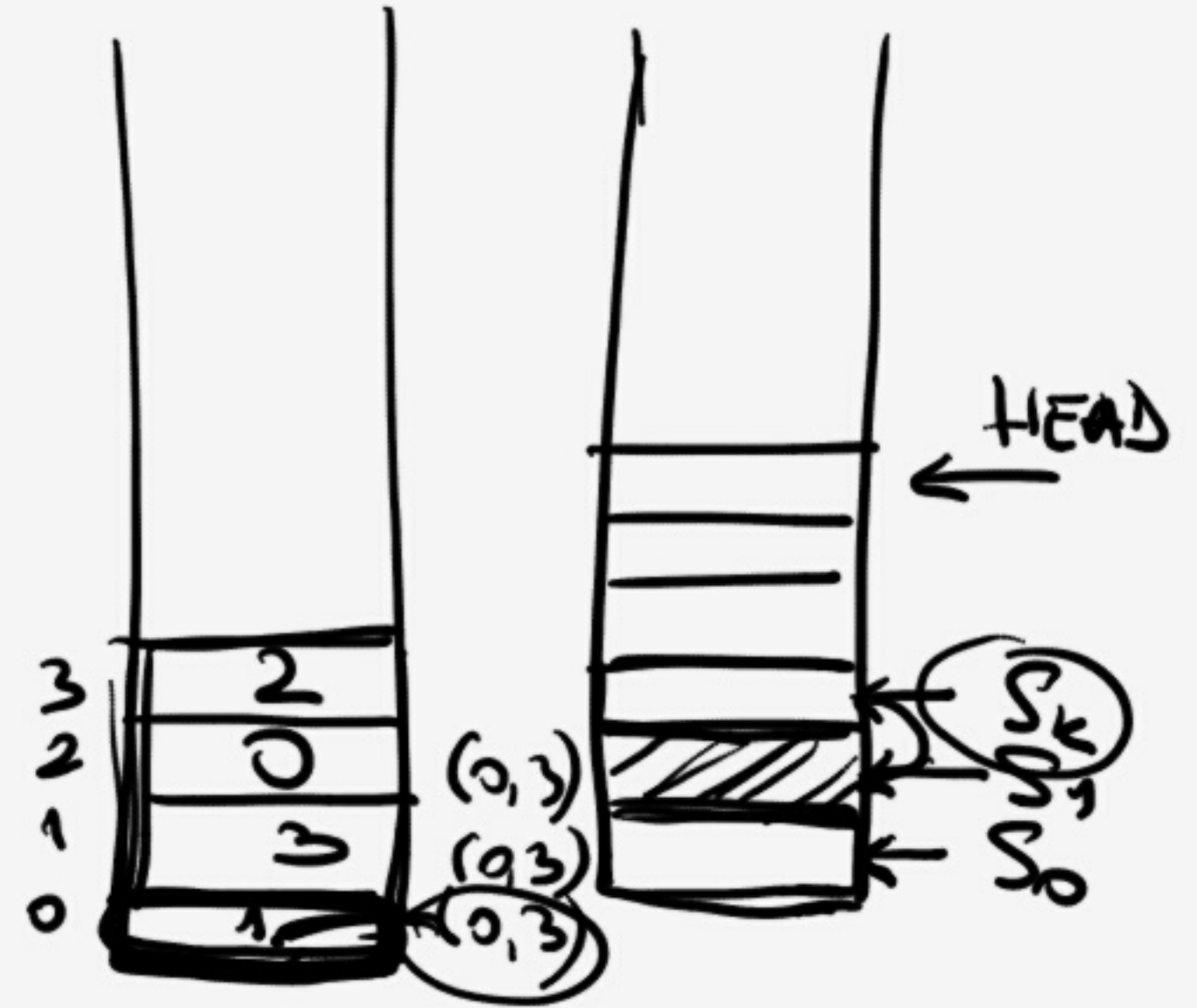
exponential / factorial

$$P = \text{NP}$$

4x4

	0	1	2	3
3			0	
2	0			
1				0
0		0		

✓



```

int v[n];
int k = 1;
init(v, 0);
while (k > 0) {
  do {
    hasSuccessor = success(v, k);
    if (hasSuccessor) isValid = validate(v);
  } while (hasSuccessor && !isValid);
  if (hasSuccessor && isValid) {
    if (isSolution(v)) {
      addSolution(v);
    } else {
      init(v, ++k);
    }
  } else {
    k--;
  }
}
}

```