

When doing DP How to Correctness proof?

$OPT(i, w)$ what am I inducting on?

Formal predicate

$P(m) =$ "My ALG correctly finds $OPT(i, w)$
for all i, w s.t. $i + w = m$ $0 \leq i \leq n, 0 \leq w \leq W$ ".

→ $OPT(i-1, w)$

↘ $OPT(i-1, w-w_i)$

We do strong induction on $P(m)$.

$P(0) =$ "We have calculated $OPT(0, 0)$ correctly."