Let \( n \) be a natural variable. Add time according to the recursive measure, and find a finite upper bound on the execution time of

\[
P \iff \text{if } n \geq 2 \text{ then } n := n - 2. \quad P. \quad n := n + 1. \quad P. \quad n := n + 1 \text{ else } \text{ok fi}
\]

To ensure that every loop includes a time increment, it is sufficient to put \( t := t + 1 \) just before the first call. (But the question isn't any harder, and the time bound isn't significantly different, if we put \( t := t + 1 \) before both calls.) Because of the two calls, each at approximately the original value of \( n \), I guess the time might be exponential. Actually, it looks just like Fibonacci: the first call is at \( n - 2 \), the second is at \( n - 1 \). Let's try

\[
P = t' \leq t + 2^n
\]

The proof of the refinement will be by cases. First case:

\[
\begin{align*}
& n \geq 2 \land (n := n - 2. \quad t := t + 1. \quad P. \quad n := n + 1. \quad P. \quad n := n + 1) \\
\Rightarrow & n \geq 2 \land (t' \leq t + 1 + 2^{n-2}. \quad t' \leq t + 2^{n+1}. \quad n' = n + 1 \land t' = t) \\
\Rightarrow & n \geq 2 \land \exists n'', t', n''', t'''. \quad t'' \leq t + 1 + 2^{n-2} \land t''' \leq t'' + 2^{n''} + n' = n''' + 1 \land t' = t'''
\Rightarrow & n \geq 2
\end{align*}
\]

Oops. The final time seems to be completely arbitrary. The problem is that the first call of \( P \) allows \( n \) to change arbitrarily, so the last call of \( P \) allows \( t \) to change arbitrarily. Let's try again.

\[
P = n' = n \land t' \leq t + 2^n
\]

The proof of the refinement will be by cases. First case:

\[
\begin{align*}
& n \geq 2 \land (n := n - 2. \quad t := t + 1. \quad P. \quad n := n + 1. \quad P. \quad n := n + 1) \\
\Rightarrow & n \geq 2 \land n' = n \land t' \leq t + 1 + 2^{n-2} + 2^{n-1} \\
\Rightarrow & n \geq 2 \land n' = n \land t' \leq t + 1 + 3 \times 2^{n-2} \quad \text{when } n \geq 2, 1 \leq 2^{n-2} \\
\Rightarrow & n' = n \land t' \leq t + 2^{n} \quad \text{specialize and simplify}
\end{align*}
\]

Last case:

\[
\begin{align*}
& n < 2 \land \text{ok} \\
\Rightarrow & n < 2 \land n' = n \land t' = t \\
\Rightarrow & n' = n \land t' \leq t + 2^n \quad \text{and } 0 \leq 2^n
\end{align*}
\]