Express formally that natural $n$ is the length of a longest palindromic segment in list $L$.

A palindrome is a list that equals its reverse.

After trying the question, scroll down to the solution.
§ Define \textit{pal} \textit{i} \textit{n} to mean “\textit{L[i;..i+n]} is a palindrome” by the following axioms.

\begin{align*}
0 \leq i \leq \#L & \Rightarrow \text{pal} \ i \ 0 \\
0 \leq i < \#L & \Rightarrow \text{pal} \ i \ 1 \\
0 \leq i \leq i + n + 2 \leq \#L & \Rightarrow (\text{pal} \ i \ (n+2) \ = \ L \ i = L \ (i+n+1) \land \text{pal} \ (i+1) \ n)
\end{align*}

Then we can say what we want as follows:

\[ (\exists i: 0 \ldots \#L - n \cdot \text{pal} \ i \ n) \land \neg (\exists i: 0 \ldots \#L - n - 1 \cdot \text{pal} \ i \ (n+1)) \land \neg (\exists i: 0 \ldots \#L - n - 2 \cdot \text{pal} \ i \ (n+2)) \]