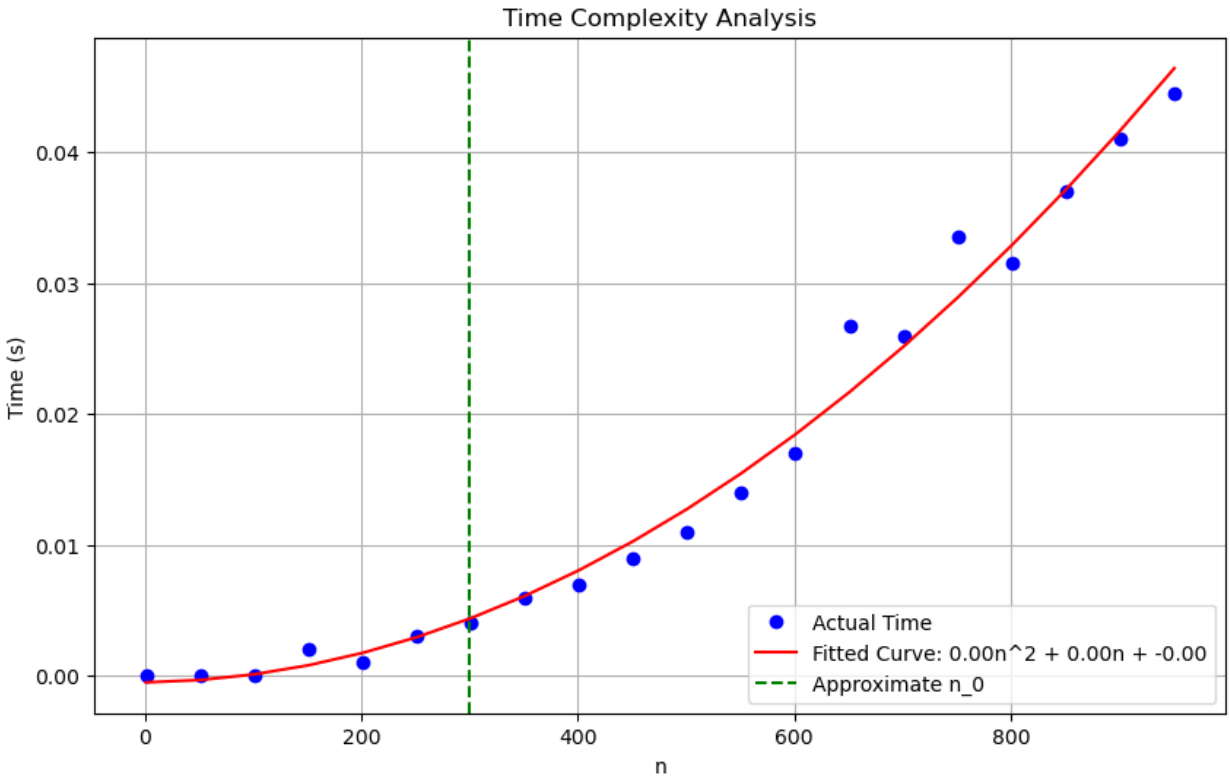
4.

The approximate location of "n_0"



The approximate (eyeball) location of "n_0" is in green line which is deviating.

We must study the plot to see where the real timing data begins to considerably diverge from the fitted polynomial curve to estimate the location of (n_0) where the data deviates from the polynomial curve's trend. The algorithm's behavior changes at this stage, most often because of overhead, system constraints, or other complexity that the polynomial fit was unable to represent.

When we look at the plot, we try to find the point at which the real timing data begins to diverge from the fitted polynomial curve. This discrepancy points to a behavioral shift that the polynomial fit was unable to account for.

Plot analysis reveals that, at n=300, the data begins to significantly stray off the curve. This is where we will roughly mark n_0 on the plot:

The approximate value of n_0 ≈ 300 is selected in this instance to indicate the point at which the data begins to considerably deviate from the fitted polynomial curve. Based on the plot's observed behavior—where the timing data seems to deviate from the polynomial trend—this number was chosen.