Lecture #8: Introduction to Nondeterministic Computation
Lecture Presentation

Recall that a non-negative integer n, such that $n \geq 2$, is ***prime*** if the only integers k, such that $1 \leq k \leq n$ and k divides n, are 1 and n; an integer n such that $n \geq 2$ is ***composite***, otherwise.

Now let

$$\Sigma_D = \{0, 1, 2, 3, 4, 5, 6, 7, 8, 9\}$$

and let $L_{\text{comp}} \subseteq \Sigma_D^\star$ be the set of unpadded decimal representations of non-negative integers n such that $n \geq 2$ and n is composite.

The goal for this lecture presentation is to prove that $L_{\text{comp}} \in \mathcal{NP}$.

Defining Certificates:

A Verification Algorithm:

Correctness of This Verification Algorithm:

Efficiency of This Verification Algorithm: