

# Compilers

## Exam Questions

Suppose we are given a deterministic finite automaton for a language  $L$  on  $\Sigma$ . For all words  $w \in \Sigma^*$ , we can use the automaton to determine whether  $w \in L$  in time:  $O(|w|)$   
Suppose we are given a context free grammar for a language  $L$  on  $\Sigma$ .

For all words  $w \in \Sigma^*$ , we can use the grammar to determine whether  $w \in L$  in time: polynomial in  $|w|$

$S \rightarrow Aa|Bb$   
 $A \rightarrow \epsilon$   
 $B \rightarrow \epsilon$

## Examples of grammars and languages

Give an example of an LL(1) grammar that is not strongly LL(1):