Report 2

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1. $a^n b^n$
   The language a^n b^n, as defined in formal language
   Thought that language would be hard to distinguish because it need to remember n. in addition – its not a regular language, its context free language So I thought it would not be able to remember n.
   I was wrong.
   So – I tried $a^n b^n c^n$. And again, it worked flawlessly.
   Turns out this LSTM is quite strong.
2. Primes
   Language consisting of prime numbers.
   Thought it would be hard to learn, because it is considered a hard task to do.
   and Indeed, the LSTM could not learn it.
   It reached maximum of 80% on the dev set, while overfitting on the train set (100%)
3. Primes – Binary
   Prime numbers represented in binary
   Thought it would be hard to learn because if regular primes were hard – then binary should be harded.
   Indeed – the LSTM failed to learn it, constant 0.74 on train, 0.76 on dev.