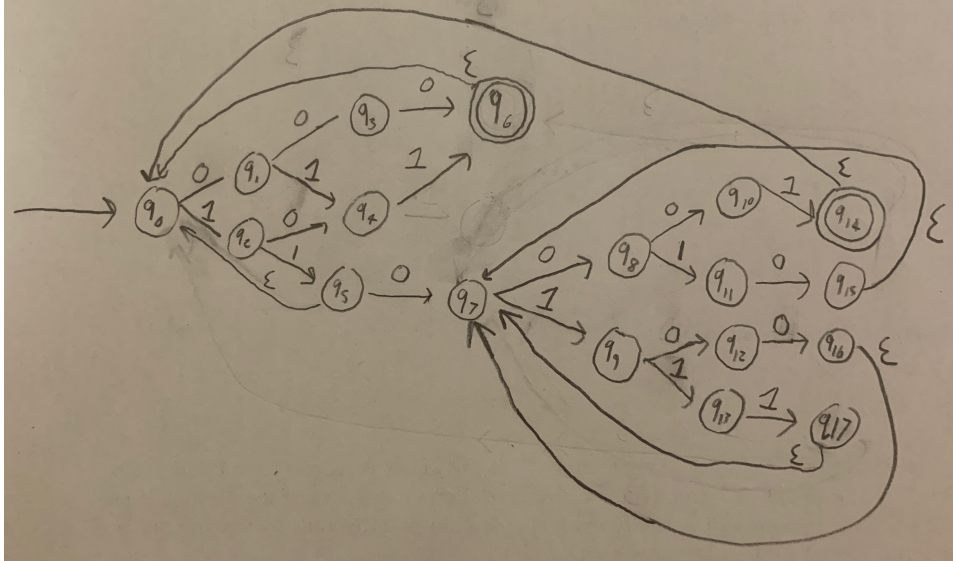


4. Note: I am assuming, that at the end of a string, an NFA will not take an ϵ path.



As noted in the question, I found it easier to flip the sequence. This means I am reading these numbers essentially from top to bottom from right to left.

State q_6 is my non-overflow accept state handling all inputs lower than 110.

State q_7 is the overflow state where we know we are dealing with overflow from the lower numbers.

State q_{14} is the overflow accept state as it is 001 meaning there is no more overflow from the top two rows.

The reasons for the epsilons is that I want to stay to the right of q_7 if there is still overflow. If there isn't overflow anymore q_{14} will bring us back to the beginning, or will accept the current state. Note, there are some possible inputs without a path e.g. 111 but since there is no way for this to ever work it will simply die off.