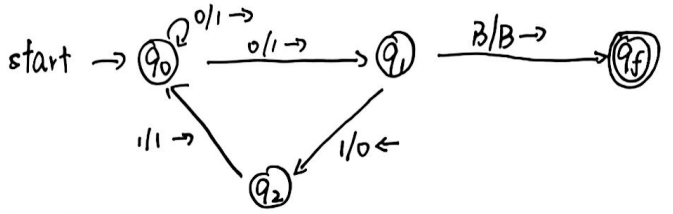
# Week 8. By Deng Yufan.

Prob 1.

Consister nondeterministic TM.




Describe $L(M)$.

Obviously $L(M) = 0(0+1)^*$.

Prob 2. Consider a semi-infinite tape TM, with $L$ move replaced by L-most move. Show this kind of TM recognize all RE.

For all normal semi-infinite tape TM. we informally describe the modified machine.

Let $T'$ be $T \times \{0,1\} \cup \{B\}$. which can be considered as two tracks: symbol track and head position track.

For change operation. we move the head from the leftmost position to where we mark the head position, and do the change operation.

For right move. we change current place 1 to 0. and next position 0 to 1.

For left move. we return to leftmost position. and rightshift all symbols. At new leftmost position. we write B.

In conclusion. for left move, we right shift symbols; for right move. we right shift head position.