## HW 3: Branch Prediction

For the purposes of this assignment:

- the "Static-First" predictor makes its first prediction false (predicting the branch will not be taken)
- the bimodal dynamic predictor begins in the state that will predict false but not confidently (assumes the previous prediction was an error)
- the two-layered bimodal predictor uses a 2-bit history to index its prediction table and sets the Prediction:ErrCount bits to 0:1, 1:1, 0:1, and 1:1 for the histories 00, 01, 10, and 11, respectively and an initial history two branches were not taken.
- 1) For the branch trace below, how many accurate predictions are made by a Fixed-False predictor? You shouldn't need to underline any mispredictions to answer this.

2) For the branch trace below, how many accurate predictions are made by a Static-First predictor? You shouldn't need to underline any mispredictions to answer this.

3) For the branch trace below, how many accurate predictions are made by a Bimodal Dynamic predictor? Please underline mispredictions.

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4) For the branch trace below, how many accurate predictions are made by a Two-Layered Bimodal predictor? Please underline mispredictions.

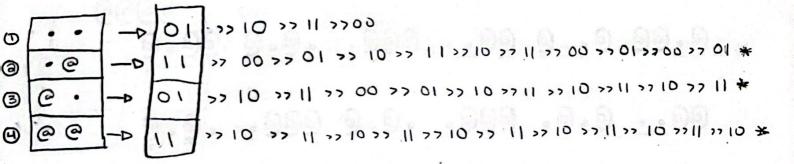
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5) For the branch trace below, how many accurate predictions are made by a Fixed-False predictor? You shouldn't need to underline any mispredictions to answer this.

6) For the branch trace below, how many accurate predictions are made by a Static-First predictor? You shouldn't need to underline any mispredictions to answer this.

7) For the branch trace below, how many accurate predictions are made by a Bimodal Dynamic predictor? Please underline mispredictions.



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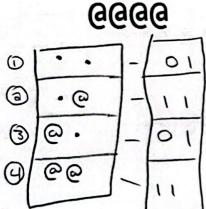
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8) For the branch trace below, how many accurate predictions are made by a Two-Layered Bimodal Dynamic predictor? Please underline mispredictions.

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