Code Segment-1

p = 3 ALL Zeros	**p = 3** ALL Ones
accuracy 96.2919	accuracy 96.2956
p = 4 ALL Zeros	**p = 4** ALL Ones
accuracy 96.2922	accuracy 96.2956
p = 5 ALL Zeros	**p = 5** ALL Ones
accuracy 96.2922	accuracy 96.2956

Code Segment-2

p = 3 ALL Zeros	**p = 3** ALL Ones
accuracy 99.9767	accuracy 99.99
p = 4 ALL Zeros	**p = 4** ALL Ones
accuracy 99.9767	accuracy 99.99
p = 5 ALL Zeros	**p = 5** ALL Ones
accuracy 99.9767	accuracy 99.9867

Code Segment-3

p = 3 ALL Zeros	**p = 3** ALL Ones
accuracy 99.9175	accuracy 99.91
p = 4 ALL Zeros	**p = 4** ALL Ones
accuracy 99.9325	accuracy 99.925
p = 5 ALL Zeros	**p = 5** ALL Ones
accuracy 99.9325	accuracy 99.925

The major difference between the n-bit predictor and tournament predictor is that Global history register keeps of history of the branch decision of last few branch occur in the program execution. Whereas the local history table keeps the history of the last few branch decision of the same branch.

Methodology -

1. GHR (Global History Register) will point towards the individual GPT and CPT cells.
2. The value in CPT cell ranges from 0 to 3. The values {0,1} will select the prediction from Local Prediction table. The values {2,3} will select prediction from the Global Prediction Table.
3. The value in GPT cell ranges for 0 to 3. The values {0,1} is **Predict Taken .**The values {2,3} is **Predict NOT-Taken.**
4. The value in the LPT (Local Prediction table) ranges ranges for 0 to 3. The values {0,1} is **Predict Taken .**The values {2,3} is **Predict NOT-Taken.**
5. In case of correct prediction - If the prediction was from global history then we increment GHR towards global. If the prediction was from local history then we decrement GHR towards local.
5. In case of miss prediction. If the prediction was from global history then we decrement GHR towards local. If the prediction was from local history then we increment GHR towards global.

Observation -

1. There is huge improvement over n-bit predictor.
2. With the Increment in the rows of the global prediction table. There is increase in the accuracy of prediction.