***Branch Predictor Assignment***

***Accuracy values***

**PART A and PART B (Taken and Not Taken)**

**Static Branch Prediction with 1 bit**

1. ***TAKEN ACCURACY***
2. Trace1 = 87.82490522852443
3. Trace2 = 57.64232410652552
4. Trace3 = 55.962997401235
5. Trace4= 94.52971890422717
6. Trace5 = 49.669122380373366
7. Trace6 = 63.82461912595666
8. Trace7 = 39.929332665760676
9. Trace8 = 33.31883746989963
10. Trace9 = 39.099825954271274
11. Trace10 = 37.5424743103736
12. Trace11 = 37.235581622678396
13. Trace12 = 38.06852156498105
14. Trace13 = 40.81234055742317
15. Trace14 = 38.32668144863266
16. Trace15 = 37.94568819588489
17. Trace16 = 38.28538731135112
18. ***NOT TAKEN ACCURACY***
19. Trace1 = 12.175094771475575
20. Trace2 = 42.35767589347448
21. Trace3 = 44.03700259876499
22. Trace4= 5.470281095772835
23. Trace5 = 50.330877619626634
24. Trace6 = 36.17538087404334
25. Trace7 = 60.070667334239324
26. Trace8 = 66.68116253010038
27. Trace9 = 60.900174045728726
28. Trace10 = 62.4575256896264
29. Trace11 = 62.764418377321604
30. Trace12 = 61.93147843501895
31. Trace13 = 59.18765944257684
32. Trace14 = 61.67331855136733
33. Trace15 = 62.0543118041151
34. Trace16 = 61.714612688648884
35. **Dynamic Branch Prediction with 1 bit (taken)**

**ACCURACY VALUES**

1. Trace1 accuracy = 78.31018286722457
2. Trace2 accuracy = 53.76458527048613
3. Trace3 accuracy = 62.12154590754119
4. Trace4 accuracy = 97.1879932289059
5. Trace5 accuracy = 50.50683069880553
6. Trace6 accuracy = 62.18124597668264
7. Trace7 accuracy = 55.976730324488
8. Trace8 accuracy = 57.54590754118685
9. Trace9 accuracy = 54.88915909686957
10. Trace10 accuracy = 56.954056695992186
11. Trace11 accuracy = 57.26381040936509
12. Trace12 accuracy = 56.21629354123453
13. Trace13 accuracy = 46.1836301647474
14. Trace14 accuracy = 56.76942517225759
15. Trace15 accuracy = 56.691319171256225
16. Trace16 accuracy =56.71687766731039
17. **Dynamic Branch Prediction with 1 bit (not taken)**

**ACCURACY VALUES**

1. Trace1 accuracy = 78.31008749970198%
2. Trace2 accuracy = 53.76468063800872
3. Trace3 accuracy = 62.12164127506378
4. Trace4 accuracy = 97.1878978613833
5. Trace5 accuracy = 50.50692606632812
6. Trace6 accuracy = 62.18134134420523
7. Trace7 accuracy = 55.97663495696541
8. Trace8 accuracy = 57.54600290870944
9. Trace9 accuracy = 54.88925446439216
10. Trace10 accuracy = 56.954152063514776
11. Trace11 accuracy = 57.26390577688768
12. Trace12 accuracy = 56.21638890875712
13. Trace13 accuracy = 46.18372553226999
14. Trace14 accuracy = 56.769329804735
15. Trace15 accuracy = 56.691414538778815
16. Trace16 accuracy = 56.71697303483298

**PART C**

**DYNAMIC 2-bit BRANCH PREDCTOR**

**ACCURACY VALUES**

1. Trace1 = 88.99622898156643
2. Trace2 = 75.06128075856434
3. Trace3 = 82.70664372032006
4. Trace4= 98.2445946611669
5. Trace5 = 74.12866311756804
6. Trace6 = 81.11917132396505
7. Trace7 = 78.2481112462925
8. Trace8 = 78.32967249324744
9. Trace9 = 77.62518979676912
10. Trace10 =77.89705248721044
11. Trace11 = 78.12699125516589
12. Trace12 = 77.06540050588173
13. Trace13 = 74.36419125127162
14. Trace14 = 77.77427144253801
15. Trace15 = 77.98094096042848
16. Trace16 = 77.63571915357927

**PARTD  
GSHARE BRANCH PREDICTOR**

1. Trace1 = 98.81 %
2. Trace2 = 95.53 %
3. Trace3 = 77.89 %
4. Trace4= 99.32 %
5. Trace5 = 88.22 %
6. Trace6 = 88.22 %
7. Trace7 = 84.82 %
8. Trace8 = 79.01 %
9. Trace9 = 82.41 %
10. Trace10 =73.18 %
11. Trace11 = 72.79 %
12. Trace12 = 77.46 %
13. Trace13 = 91.62 %
14. Trace14 = 75.12 %
15. Trace15 = 72.89 %
16. Trace16 = 74.19 %

**BRANCH PREDICTOR (own)**

ACCURACY VALUES

1. Trace1 = 88.8735884540764
2. Trace2= 70.73432453265809
3. Trace3 = 78.06751178580889
4. Trace4 = 98.17985974545411
5. Trace5 = 67.77242648888004
6. Trace6 = 72.79056061924484
7. Trace7 = 69.67754284850572
8. Trace8 = 68.58365481046692
9. Trace9 = 68.89499484239641
10. Trace10 = 68.99073326738801
11. Trace11= 69.16987796071197
12. Trace12 = 77.06540050588173
13. Trace13 = 65.18085057925023
14. Trace14 = 77.77427144253801
15. Trace15 = 69.11374798446681
16. Trace16 = 68.93483745015423

***COMPARISION BETWEEN DIFFERENT PREDICTION TECHNIQUES***

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Batch – EE18