COL216 Assignment 2 Report

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2019CS10376

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Branch Predictions

Prediction strategy used for combination:

We concatenate pc(14 bit) with bhr(2 bit)to get the hash index to the counter table. So we used 16 bit as the hash index to the counter table. Included the file branch.cpp

|  |  |  |  |
| --- | --- | --- | --- |
| Initial value in counter  (State) | Accuracy of Saturating counter | Accuracy of Branch History Table | Accuracy by  Combination |
| 0(strongly not taken) | 79 | 71 | 75 |
| 1(weakly not taken) | 83 | 72 | 81 |
| ­2(weakly taken) | 87 | 72.5 | 81.2 |
| 3(strongly taken) | 86 | 73 | 70 |

Comparing various pipelines

we didn’t implement 79stage pipeline, so we tested only 5stage and 5stage\_bypass on public testcases given in the git repo.

We can see more cycles foe 5stage than 5stage\_bypass and we know that this is due to forwarding/bypassing which reduces stalls.

Work Split

Khyateeswar Naidu Nalla (2019CS10376) – 50%

Bhukya Sai Ram Naik(2019CS10340) – 50%