

PROGRAMMING ASSIGNMENT 2

CS422, IIT Kanpur

31/01/2018

In-Class Branch Prediction Championship

Through this assignment, you will implement a *branch predictor* using CBP framework as available in [framework](#). Go through the website to get a feel of CBP framework. You will test the effectiveness of your branch predictor for ten traces. Trace files are available in the traces folder of the framework. Run the simulator as per the README file of the framework. Note that while running the predictor, just specify the name of the trace and not in .bz2 format.

For example: `./predictor traces/without-values/DIST-INT-2`

In the CBP framework, you need to change **ONLY** *predictor.cc* and *predictor.h* files to implement your *branch predictor*. The *predictor.cc* file by default contains a 64 Kb gshare predictor. Go through them and implement your Predictor accordingly with a maximum hardware budget of 64Kb.

Traces to Use:

Use the following traces from the folder traces/without-values: INT1, INT2, INT3, MM1, MM2, SERV1 to SERV5

What to Submit:

Submit a report with average MPPKI (average of all traces) of your predictor and MPPKI of Gshare. The framework provides MPPKI in the form of $1000 * \text{wrong}_{cc} \text{predicts} / \text{total insts}$:. Describe your predictor with figures and examples. Provide a detailed description of the hardware budget. Be precise and legible. Note that, there will be bonus 10, 5, and, 2 points for top 3 submissions, respectively.