Quiz 6

1. Why is branch prediction important in modern machines?
   1. Long pipelines mean that branch mis-prediction penalties are quite long.
   2. Long penalties result in lots of stalls or wasted work (i.e., flushes)

2. Describe the basic 2-bit predictor.
   1. 4 states: strong take, weak take, weak no-take, strong no-take.
   2. Taken branches move you toward the taken end, not-taken branches move you toward the not-taken end.

3. Describe two ways of selecting a 2-bit predictor to use for predicting a particular branch.
   1. Global history
   2. Low order bits of the PC
   3. Use low order bits of the PC to select a table of local-history-based predictors.