

**Computer Architecture 3**

**Formal Element: Cache Simulator**

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# Objective

The objective of this report is to simulate instructions loaded into a cache in a C++ script. The addresses would be input from a text file containing roughly fifty addresses, the same applied for the data. The types used include Direct Mapped, Fully Associative, and 2-Way Associative cache. The success of the cache loading is to be printed out in Hit/Miss manner.

# Results

## Direct Mapped

A hit occurs within the direct mapped cache when the lower half of the address matches the one stored at the address indicated by the upper half. For example, a

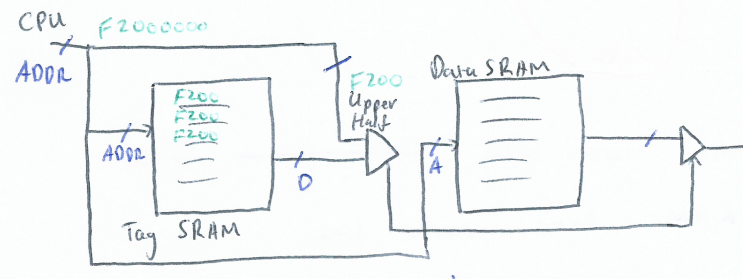


Figure Direct Mapped Diagram

## Fully Associative

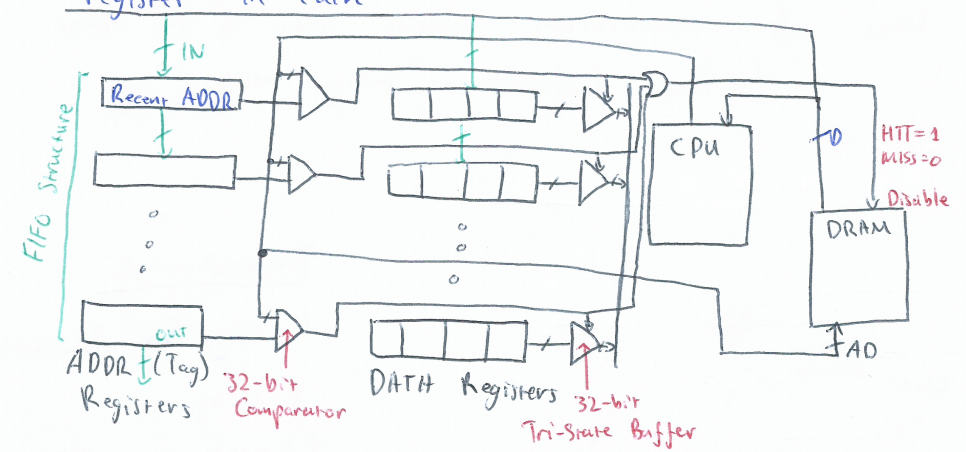


Figure Fully Associative Diagram

## 2-Way Associative

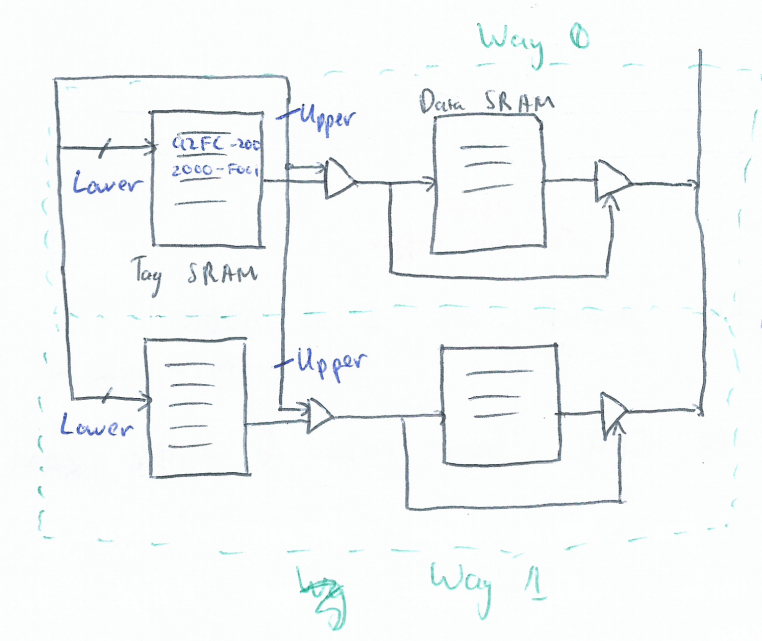




Figure 2-Way Associative Diagram

# Conclusion

# References