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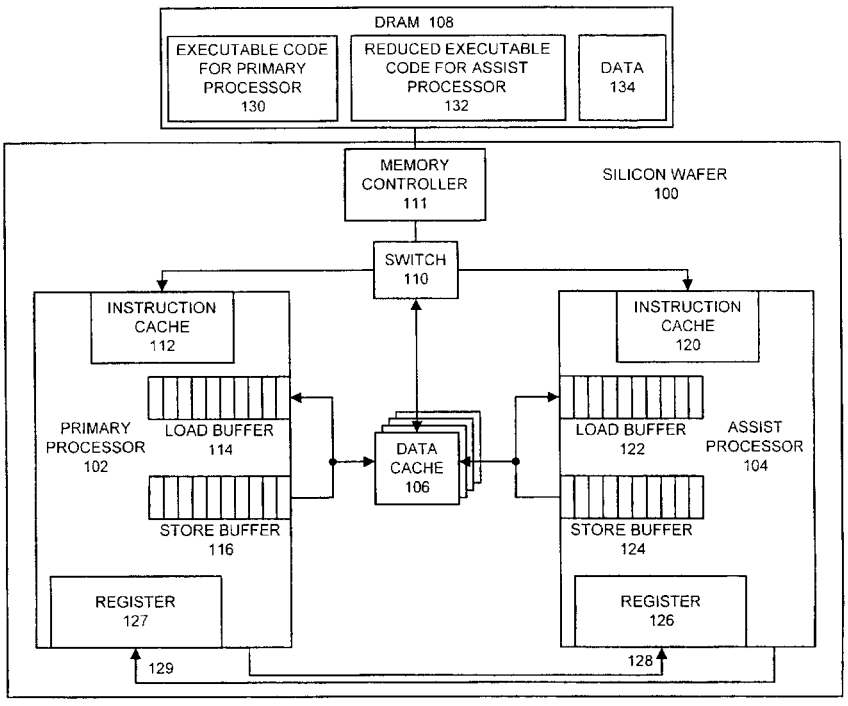
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(54) Title: METHOD AND APPARATUS FOR USING AN ASSIST PROCESSOR TO PRE-FETCH DATA VALUES FOR A PRIMARY PROCESSOR



(57) Abstract: One embodiment of the present invention provides a system that prefetches from memory by using an assist processor that executes in advance of a primary processor. The system operates by executing executable code on the primary processor, and simultaneously executing a reduced version of the executable code on the assist processor. This reduced version runs more quickly than the executable code, and generates the same pattern of memory references as the executable code. This allows the assist processor to generate the same pattern of memory references that the primary processor generates in advance of when the primary processor generates the memory references. The system stores results of memory references generated by the assist processor in a store that is shared with the primary processor so that the primary processor can access the results of the memory references. In one embodiment of the present invention, this store is a cache memory. In one embodiment of the present invention, prior to executing the executable code, the system compiles source code into the executable code for the primary processor. The system also produces the reduced version of the executable code for the assist processor from the executable code by eliminating instructions from the executable code that have no effect on a pattern of memory references generated by the executable code.

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