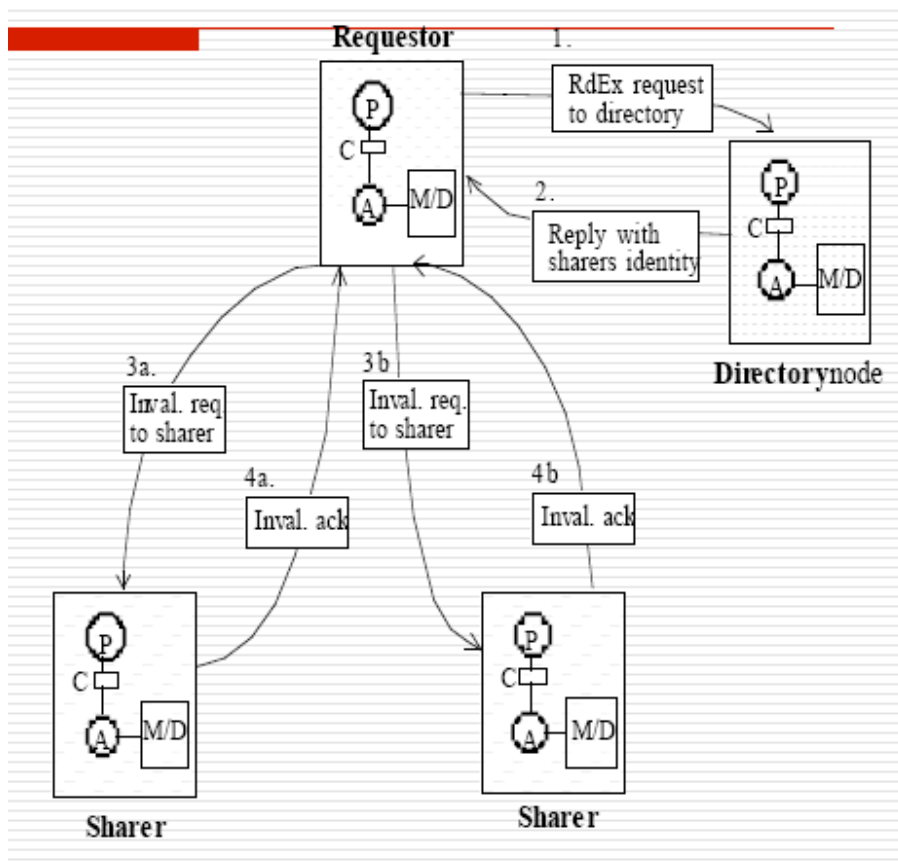# ECSE 420-Parallel Computing
Assignment 4

1. Provide the proposal of your final project. Your proposal must include a clearly written abstract of the overall project, the name of all participants as well as the group number you took up in WebCT signup. For project done in groups, here you also identify clearly the parts (expected) to be done by you. Please make sure to coordinate with your partners on the work definition and division before submitting this assignment.

2. The figure below shows network transactions assuming the simple directory based cache coherency protocol.
   a) Use this figure to produce the sequence of events in a generic write-through invalidate directory-based machine for a write operation by a processor i, in the case when the dirty bit is ON.
   b) Describe what happens with all the required transactions when considering the update protocol.

3. For NUMachine distributed directory-based cache coherence protocol, show the timing diagram for:

   local exclusive read request to the cache line that is in GI state in the main memory.

   The diagram should be done in the style of diagrams on pages 15-16 in lecture 10. Hint: feel free to consult the literature on the topic mentioned in the class to validate your reasoning.