Work with one or two partners in this activity.

1) Consider a system which uses demand paging to implement *virtual memory* without a translation lookaside buffer (TLB). Describe how you could possibly derive an expression for *effective access time (EAT)* to quantify the performance of the system. State all the assumptions you may need in order to put together an expression for this performance metric.

2) Now consider that the system does have a TLB. Adapt your EAT expression to include the benefits of the TLB in the virtual memory system.

3) The *Least Recently Used (LRU)* algorithm for page replacement is not exactly trivial to implement in a virtual memory system. List what information one would need to get from the system (describing whether it would come from hardware and/or software) in order to be able to implement LRU faithfully.