Proposed Work of Study

- The proposed work of study is concerned with the integration of the four buffer management techniques mentioned in the previous section, namely: static clustering; dynamic clustering; buffer replacement; and pre-fetching. Previously these four buffer management techniques have mainly been considered in isolation. In contrast the work also proposes to establish some synergy between these four techniques and that exploitation of this synergy leads to improved performance.

- To demonstrate the superiority of synergistic buffer management techniques, some general modifications will be made to existing techniques based on the three guiding principles: synergy; generality; and simplicity. Synergy refers to developing modifications that exploit synergies between the different buffer management areas. Generality refers to developing general modifications which can be applied to a large range of existing algorithms. Simplicity refers to making the modifications easy and straightforward to apply. Following these guiding principles synergistic frameworks are proposed to be developed which will be addressing the synergies between different buffer management areas.

Methodology

Our experiments are conducted using the Object Clustering Benchmark (OCB) and the Virtual Object Oriented Database simulator, (VOODB) . VOODB is based on a generic discrete-event simulation framework. Its purpose is to allow performance evaluations of OODBMs in general, and optimizing methods like clustering in particular. OCB is designed to benchmark OODB systems and clustering polices in particular. The OCB database has a variety of parameters which make it very user-tunable. A database is generated by setting parameters such as total number of objects, maximum number of references per class, base instance size, number of classes, etc... Once these parameters are set, a database conforming to these parameters is randomly generated. The database consists of objects of varying sizes.