1. List the briefly describe the types of Parallel Computer Memory Architectures. What type is used by OpenMP and why?

There are two types of shared memory architectures:

* Uniform Memory Access (UMA): Symmetric Multiprocessor (SMP) machines which all processors have equal access and access time to a single memory location, and updates made in the memory is visible by all processors.
* Non-uniform Memory Access (NUMA): Several SMP linked physically. One can access the other SMP. But access across link is slower and not all processors have equal access time across memories.

OpenMP supports both architectures because it is designed for multi-processor or multi-core shared memory machines.

1. Compare Shared Memory Model with Threads Model? (in your own words and show picture)

Shared Memory Model is for running several programs sumptuously through multi-processors with a single shared memory. And Threads Model can be implemented in a single large program. It divides the program into several different tasks or subroutines, each subroutine would be executed by different core to achieve parallel programming. So, Threads Model can be implemented with Shared Memory Model.

Program 1

dsfsadfsdf

Program 3

dsfsadfsdf

Program 2

dsfsadfsdf

Memory

Thread 1

Thread 2

Thread 3

Thread 1

Thread 2

Thread 3

Thread 1

Thread 3

Thread 2