Assignment 1

identify a real world application for both parellel computing and networked systems , Explain how these technologies are used and why they are important in that context .

Answer : Parallel computing makes it possible to process this data quickly and accurately. For example, a supercomputer could analyze data from thousands of weather stations, satellite images, and soil samples to predict the optimal planting time for a particular crop.

Weather Forecasting. Weather forecasting requires analyzing huge amounts of data to predict how conditions may change over time. Parallel computing helps weather models run faster, allowing for more accurate forecasts.

In distributed system, multiple individual computing nodes connected via a network. Each node has its private memory, and communication between nodes is achieved by message passing. Each processor runs independently and has only a vague understanding of the condition of the others. High-performance computing (HPC) systems and cluster computing frequently employ distributed memory architectures. Distributed memory architecture allows for scalability and high-performance computing by distributing the workload across multiple nodes.