

Locality

The principles of locality are exploited to create computer memory systems that are both fast and large.

- **Temporal locality**: Recently accessed data is likely to be accessed again
- **Spatial locality**: Data that is near recently accessed data is more likely to be accessed than data far away

Since there is not enough money or space in the universe to create an infinitely sized memory with the same access time as the fastest cache, a memory hierarchy is implemented to provide a large memory with satisfactory speed.

Data that is most likely needed in the near future is kept in the smallest, but fastest level of memory, and data that is least likely needed in the near future is kept in the largest, yet slowest level of memory.

