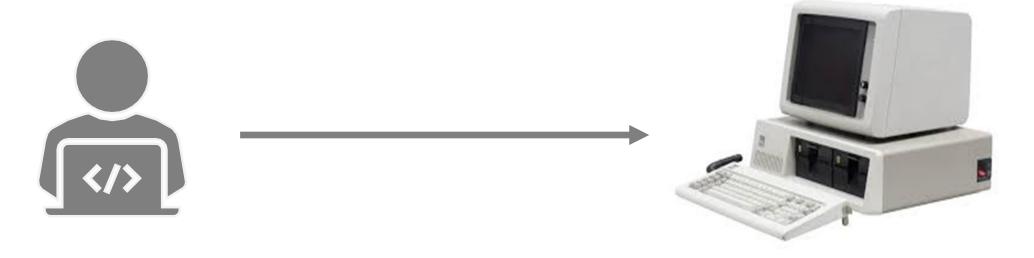
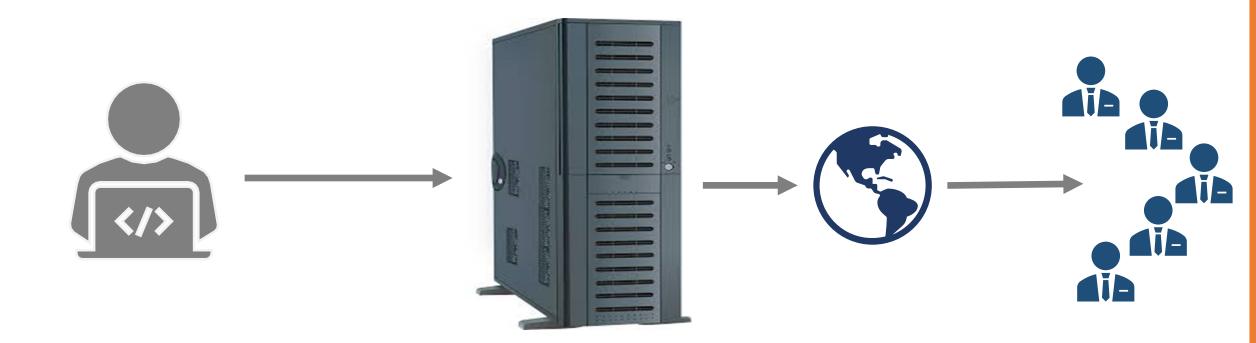


# Apache Spark

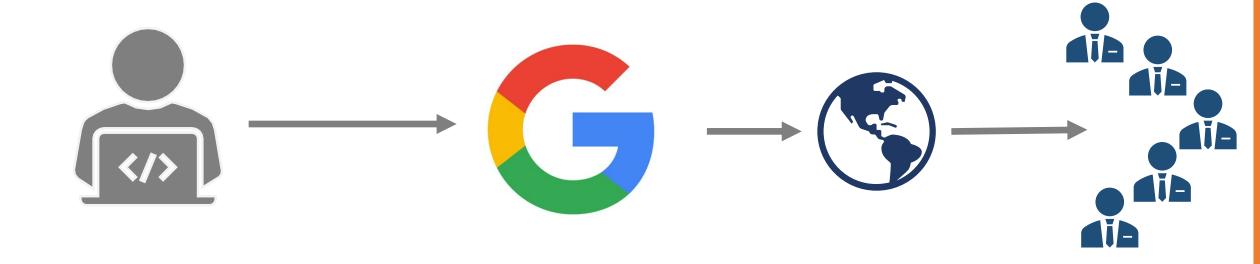
History of Distributed Computing















- 1. Data Collection and Ingestion
- 2. Data Storage and Management
- 3. Data Processing and Transformation
- 4. Data Access and Retrieval





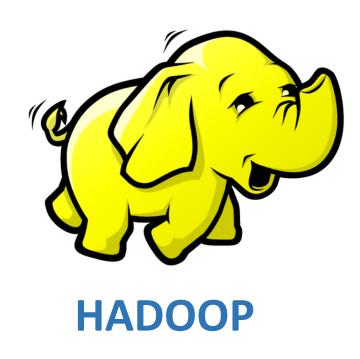
1. Google File System – 2003

https://ai.google/research/pubs/pub51

2. MapReduce – 2004

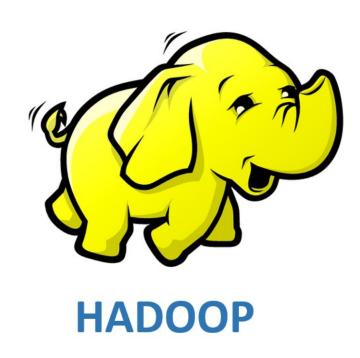
https://ai.google/research/pubs/pub62





- 1. HDFS Hadoop Distributed File System
- 2. Hadoop MapReduce









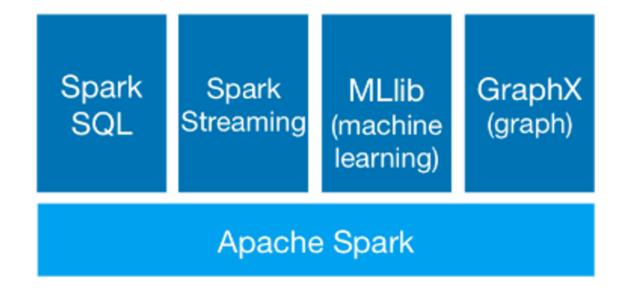














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