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**Quiz 1**

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| |  |  | | --- | --- | | Part 1 of 1 - | 15.0 Points |  |  |  |  |  | | --- | --- | --- | --- | | Question 1 of 30  0.5 Points  Which of the following describes the map function?   |  | | --- | |  |   A. It converts a relational database into key-value pairs      B. It indexes the data to list all the words occurring in it      C. It tracks data across multiple tables and clusters in Hadoop      D. It processes data to create a list of key-value pairs     |  | | --- | | Answer Key: D | |  | | | Question 2 of 30  0.5 Points  What is the input to the Reduce function?   |  | | --- | |  |   A. One key and a list of all values associated with that key.      B. An arbitrarily sized list of key/value pairs.      C. One key and a list of some values associated with that key.      D. An arbitrarily sized list of key/value with that key.     |  | | --- | | Answer Key: A | |  | | | Question 3 of 30  0.5 Points  What is true about the speculative execution in Hadoop?   |  | | --- | |  |   A. Hadoop executes the delayed map/reduce tasks in parallel in other Datanodes, speculating failures/delays in Datanodes.      B. Hadoop does not implement any speculative execution unless specified by the user.      C. Nodes in Hadoop cluster never fail. So there is no speculative execution in Hadoop.      D. Hadoop always executes every map/reduce task in more than one Datanode, speculatively.     |  | | --- | | Answer Key: A | |  | | | Question 4 of 30  0.5 Points  In a simple word count problem using MapReduce, what does the map function do?   |  | | --- | |  |   A. It returns a list with each document as a key and the number of words in it as the value. The master JobTracker sends map and reduce functions to the same machines or nodes in a cluster.      B. It creates a list with each word as a key and every occurrence as value 1.      C. It creates a list with each word as a key and the total number of occurrences of that word as the value.      D. It sorts the words alphabetically and lists the most frequently used words.     |  | | --- | | Answer Key: B | |  | | | Question 5 of 30  0.5 Points  True or false: Each mapper must generate the same number of key/value pairs as its input had.   |  | | --- | |  |   A. False      B. True     |  | | --- | | Answer Key: A | |  | | | Question 6 of 30  0.5 Points  Mappers input key/value pairs are sorted by the key.   |  | | --- | |  |   A. True      B. False     |  | | --- | | Answer Key: B | |  | | | Question 7 of 30  0.5 Points  Reducers input key/value pairs are sorted by the key.   |  | | --- | |  |   A. False      B. True     |  | | --- | | Answer Key: B | |  | | | Question 8 of 30  0.5 Points  In Hadoop, reducers output key/value pair must be of the same type as its input.   |  | | --- | |  |   A. False      B. True     |  | | --- | | Answer Key: A | |  | | | Question 9 of 30  0.5 Points  Decide if the statement is true or false: Each combiner runs exactly once.   |  | | --- | |  |   A. False      B. True     |  | | --- | | Answer Key: A | |  | | | Question 10 of 30  0.5 Points  Decide if the statement is true or false: HDFS is good at managing large number of small files.   |  | | --- | |  |   A. False      B. True     |  | | --- | | Answer Key: A | |  | | | Question 11 of 30  0.5 Points  In Hadoop 1.x, there exists ...   |  | | --- | |  |   A. one JobTracker per cluster      B. one JobTracker per Hadoop job      C. one JobTracker per node      D. one JobTracker per Mapper     |  | | --- | | Answer Key: A | |  | | | Question 12 of 30  0.5 Points  In Hadoop 1.x, there exists....   |  | | --- | |  |   A. one TaskTracker per cluster      B. one TaskTracker per Hadoop job      C. one TaskTracker per node      D. one TaskTracker per Mapper     |  | | --- | | Answer Key: C | |  | | | Question 13 of 30  0.5 Points  In a Mapreduce job, can a reducer communicate with another reducer?   |  | | --- | |  |   A. No      B. Yes     |  | | --- | | Answer Key: A | |  | | | Question 14 of 30  0.5 Points  Where is the mapper output (intermediate key-value data) stored?   |  | | --- | |  |   A. On the Namenode      B. In HDFS      C. On the local file system of mapper node      D. Mapper output is always send to the JobTracker     |  | | --- | | Answer Key: C | |  | | | Question 15 of 30  0.5 Points  When is the reducer function started in Mapreduce job?   |  | | --- | |  |   A. Reducer can start any time once it has got some free slots for processing.      B. At least 50% of the mappers should be done before starting the reduce job.      C. All the mappers should be done with their job before starting the reducer job.      D. As soon as one mapper is finished with emitting its output.     |  | | --- | | Answer Key: C | |  | | | Question 16 of 30  0.5 Points  From the developers perspective, which of the following statements is not true?   |  | | --- | |  |   A. You have no idea where the reducer output will be stored      B. You have no idea on what node the mappers run      C. You have no idea when each mapper finishes      D. You have no idea in what order the mappers run     |  | | --- | | Answer Key: A | |  | | | Question 17 of 30  0.5 Points  The necessity for re-replication may NOT arise in which of the following cases?   |  | | --- | |  |   A. A replica may become corrupted      B. Hard disk on a Datanode may fail      C. A Datanode may become unavailable      D. The replication factor on the block may be increased      E. Some new machines are added in the cluster as Datanodes.     |  | | --- | | Answer Key: E | |  | | | Question 18 of 30  0.5 Points  A file in HDFS that is smaller than a single block size   |  | | --- | |  |   A. Occupies only the size it needs and not the full block.      B. Can span over multiple blocks.      C. Occupies the full block's size.      D. Cannot be stored in HDFS.     |  | | --- | | Answer Key: A | |  | | | Question 19 of 30  0.5 Points  HDFS files are designed for   |  | | --- | |  |   A. Low latency data access.      B. Writing/Updating a file only once.      C. Only append at the end of file      D. Multiple writers and modifications at arbitrary offsets.     |  | | --- | | Answer Key: C | |  | | | Question 20 of 30  0.5 Points  In the secondary namenode the amount of memory needed is   |  | | --- | |  |   A. Depends only on the number of data nodes it is going to handle      B. Similar to that of primary node      C. Should be at least half of the primary node      D. Must be double of that of primary name node     |  | | --- | | Answer Key: B | |  | | | Question 21 of 30  0.5 Points  The current limiting factor to the size of a hadoop 1.x cluster is   |  | | --- | |  |   A. Upper limit of the RAM in namenode      B. Excess heat generated in data center      C. Upper limit of the network bandwidth      D. 4000 data nodes     |  | | --- | | Answer Key: A | |  | | | Question 22 of 30  0.5 Points  Data locality feature in Hadoop means   |  | | --- | |  |   A. Co-locate the data with the computing nodes.      B. Distribute the data across multiple nodes.      C. Store the same data across multiple nodes.      D. Relocate the data from one node to another.     |  | | --- | | Answer Key: A | |  | | | Question 23 of 30  0.5 Points  Which of the following are among the duties of the Data Nodes in HDFS?   |  | | --- | |  |   A. None of the options is correct.      B. Control the execution of an individual map task or a reduce task.      C. Maintain the file system tree and metadata for all files and directories.      D. Store and retrieve blocks when told to by clients or the NameNode.     |  | | --- | | Answer Key: D | |  | | | Question 24 of 30  0.5 Points  The Hadoop tool used for uniformly spreading the data across the data nodes is named   |  | | --- | |  |   A. Spreader      B. Balancer      C. Reporter      D. Scheduler     |  | | --- | | Answer Key: B | |  | | | Question 25 of 30  0.5 Points  Which demon is mainly responsible for replication of data in Hadoop 1.x?   |  | | --- | |  |   A. Name Node      B. Task Tracker      C. Data Node      D. Job Tracker     |  | | --- | | Answer Key: A | |  | | | Question 26 of 30  0.5 Points  In the local disk of the namenode the files which are stored persistently are   |  | | --- | |  |   A. namespace image and edit log      B. Namespace image, edit log and block locations      C. edit log and block locations      D. block locations and namespace image     |  | | --- | | Answer Key: A | |  | | | Question 27 of 30  0.5 Points  \_\_\_\_\_\_\_\_\_ is the default Partitioner for partitioning key space.   |  | | --- | |  |   A. getPartition      B. HashPartitioner      C. CustomPartitioner      D. None of the mentioned     |  | | --- | | Answer Key: B | |  | | | Question 28 of 30  0.5 Points  Hadoop’s job scheduling can be speculative: if a task has not yet finished, an identical copy of the task can be executed on a second DataNode. The output of whichever node finishes first is used. Speculative execution is possible both for map and reduce tasks. In practice, speculative execution is mostly restricted to map tasks. What is the main reason?   |  | | --- | |  |  |  | | --- | |  |   A. Speculative execution of reduce tasks can create a large amount of additional network traffic.      B. None of them!      C. Speculative execution of reduce tasks leads to erroneous values at the end of a job.      D. Map tasks are more prone to stragglers (slowly executed tasks), since DataNodes always execute queued Reduce tasks before any Map tasks.      E. All of them!     |  | | --- | | Answer Key: A | |  | | | Question 29 of 30  0.5 Points  Which of the following statements is correct about Heartbeat messages in a Hadoop cluster?   |  | | --- | |  |   A.  A group of DataNodes together send a single heartbeat message to save network bandwidth.      B. A hearbeat message is sent at most once a day by each active DataNode.      C. A heartbeat message is sent every 5 to 30 seconds by every active DataNode.      D. None of the above.     |  | | --- | | Answer Key: D | |  | | | Question 30 of 30  0.5 Points  Bob has a Hadoop cluster with 50 machines under default setup (replication factor 3 and 128MB block size). Each machine has 100GB of HDFS disk space. The cluster is currently empty (no job, no data). Bob intends to upload 1 Terabyte of plain text (which is in 5 files of approximately 200GB each), followed by running Hadoop’s standard WordCount job. What is going to happen?   |  | | --- | |  |   A. The data upload fails at the first file: it is too large to fit onto a node.      B. The data upload fails at the last file: due to replication, all disks are full.      C. WordCount fails: too many input splits to process.      D. WordCount runs successfully.     |  | | --- | | Answer Key: D | |  | | |

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