1. **Why Map-reduce program is needed in Pig Programming?**

**Answer:**

Pig Latin queries are converted to Map and Reduce jobs and hence they take advantage of parallel processing. Pig Scripts are handled by the Parser, It checks the syntax of the script, does type checking, and other miscellaneous checks. The output of the parser will be a DAG (directed acyclic graph), which represents the Pig Latin statements and logical operators.

The logical plan (DAG) is passed to the logical optimizer, which carries out the logical optimizations such as projection and pushdown. The compiler compiles the optimized logical plan( output of Logical optimizer) into a series of MapReduce jobs. Finally the MapReduce jobs are submitted to Hadoop in a sorted order and these MapReduce jobs are executed on Hadoop producing the desired results.

**Short Answer:** *Pig Latin queries are converted to Map and Reduce jobs and hence they take advantage of parallel processing.*

1. **What are advantages of pig over MapReduce?**

**Answer:**

* It has the ability to perform computations which cannot be done by MapReduce.
* It uses simple syntax and in-built features/operators to reduce development effort and lines of codes involved.
* Pig and Hive provide higher level of abstraction whereas Hadoop MapReduce provides low level of abstraction.

1. **What is pig engine and what is its importance?**

**Answer:**

It acts as interpreter between Pig Latin script and map reduces jobs.

It create environment to execute pig scripts into series of map reduce jobs in parallel manner.

1. **What are the modes of Pig execution?**

**Answer:**

**Pig has two modes**:

**Mapreduce/Hadoop Mode:** Here Pig jobs run as a series of MapReduce jobs picking the input and output paths from HDFS. Input file has to be copied in HDFS in case of Map reduce mode. Type the command pig or pig –x mapreduce to run Pig in MapReduce Mode.

While running pig in MapReduce mode, make sure job history server is running. mr-jobhistory-daemon.sh start historyserver.

**Local Mode:** Here the entire Pig job runs as a single JVM picking the local Unix path for execution. Input file has to be kept in local file system in case of local mode. Type the command pig or pig -x local to run Pig in Local Mode.

1. **What is grunt shell in Pig?**

**Answer:**

Grunt is an interactive shell in Pig.

You can run Pig programs in three ways via Script, Grunt, or embeddingthe script into Java code.

1. **What are the features of Pig Latin language?**

**Answer**:

* Pig Latin is made up of series of operator, or transformations that are applied to input data for producing output
* Pig Latin program can be execute either in interactive mode (Grunt) or in Batch mode(Pig Latin script)
* User defined function
* Debugging Environment
* It include many operator for many of traditional data operator like join ,sort , filter.

1. **Is Pig latin commands case sensitive?**

**Answer:**

The names (aliases) of relations and fields are case sensitive. The names of Pig Latin functions are case sensitive. The names of parameters and all other Pig Latin keywords are case insensitive.

1. **What is a data flow language?**

**Answer:**

To access the external data, every language must follow many rule and regulation. The instructions are following through data by executing different control statement, but data doesn’t get moved. Data flow language can get a stream of data which passes through one instruction to another instruction to be processed, pig can easily process those conditions, jump, loop and process the data in efficient manner.