Give a brief answers to the questions below:

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

Pig's infrastructure layer consists of a compiler that produces sequences of Map-Reduce programs,for which large-scale parallel implementations already exist

Pig is a application that runs on top of MapReduce and abstracts Java MapReduce jobs away from developers

1. What are advantages of pig over MapReduce?

Decrease in development time.

This is the biggest advantage especially considering map-reduce jobs' complexity, time-spent and maintenance of the programs.

Lazy evaluation: unless you do not produce an output file or does not output any message, it does not get evaluated. This has an advantage in the logical plan,

it could optimize the program beginning to end and optimizer could produce an efficient plan to execute.

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

Pig engine act as a interpreter between Pig Latin script and Map Reduce Jobs.

It Creates environment to execute Pig scripts into series of MapReduce jobs in parallel manner.

1. What are the modes of Pig execution?

There are two modes of Pig execution.

**Local mode** - Pig script run in local system

**MapReduce Mode** - Pig script run and stored in HDFS

1. What is grunt shell in Pig?

The Grunt shell of Apache Pig is mainly used to write Pig Latin scripts

1. What are the features of Pig Latin language?

**Rich set of operators** - It provides many operators to perform operations like join, sort, filer, etc.

**Ease of programming** - Pig Latin is similar to SQL and it is easy to write a Pig script if you are good at SQL.

**Optimization opportunities** - The tasks in Apache Pig optimize their execution automatically, so the programmers need to focus only on semantics of the language.

**Extensibility** - Using the existing operators, users can develop their own functions to read, process, and write data.

**UDF’s** - Pig provides the facility to create User-defined Functions in other programming languages such as Java and invoke or embed them in Pig Scripts.

**Handles all kinds of data** - Apache Pig analyzes all kinds of data, both structured as well as unstructured. It stores the results in HDFS.

1. Is Pig latin commands case sensitive?

Yes.

1. What is a data flow language?

Dataflow language can get a stream of data which passes from one instruction to another instruction to be processed. Pig can easily process those conditions,jumps,loops and process the data in efficient manner.