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

When programmer wrote a script to analyze the data sets, Here Pig compiler will convert the programs into MapReduce understandable format. Pig engine  execute the query on the MR Jobs. The Mapreduce process the data and generate output report. Here Mapreduce doesn’t return output to Pig, directly stored in the HDFS.

1. **What are advantages of pig over Map Reduce?**

* Pig is application that runs on top of MapReduce and abstracts Java MapReduce jobs away from developers.Pig Latin uses a lot fewer lines of code than the Java MapReduce script.
* The Pig Latin script was is easier to read for someone without a Java background.MapReduce jobs can written in Pig Latin.
* Java is a great and powerful language, but it has a higher learning curve than something like Pig Latin. Therefore, using a higher-level language, like Pig Latin, enables many more developers/analysts to write MapReduce jobs.
* In Mapreduce it’s too difficult to join multiple data sets. Development cycle is very long.
* Depends on the task, Pig automatically converts code into Map or Reduces. Easy to join multiple tables and run many sql queries like Join, filter, group by, order by , union and many more.

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

It’s acts as interpreter between Pig Latin script and MapReduce Jobs. It creating environment to execute Pig scripts into series of mapreduce jobs in parallel manner.

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

* Local Mode: No need to start or install Hadoop. The pig scripts run in the local system. By default Pig store data in File system.
* **MapReduce/Hadoop Mode:** It’s mandatory to start Hadoop. Pig scripts run and stored in in HDFS. in Both modes, Java and Pig installation is mandatory.

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

Grunt shell allows to initiate interactive mode in pig. Invoke the Grunt shell using the "pig" command (as shown below) and then enter your Pig Latin statements and Pig commands interactively at the command line.T he Grunt shell of Apache Pig is mainly used to write Pig Latin scripts. Also we can invoke any shell commands using**sh** and **fs**.

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.

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

Keywords in Pig Latin are not case-sensitive; for example, LOAD is equivalent to load. But relation and field names are. So A = load 'foo'; is not equivalent to a = load 'foo';. UDF names are also case-sensitive, thus COUNT is not the same UDF as count.

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

To access the external data, every language must follow many rules and regulations. The instructions are flowing through data by executing different control statements, but data doesn’t get moved. 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.