1. What is Data Science?

Data science is an interdisciplinary field that uses scientific methods, processes, algorithms and systems to extract or extrapolate knowledge and insights from noisy, structured and unstructured data, and apply knowledge from data across a broad range of application domains.

2. What is Artificial Intelligence?

In the simplest terms, AI which stands for artificial intelligence refers to systems or machines that mimic human intelligence to perform tasks and can iteratively improve themselves based on the information they collect.

3. What is Machine Learning?

Machine learning is a subfield of artificial intelligence, which is broadly defined as the capability of a machine to imitate intelligent human behavior. Artificial intelligence systems are used to perform complex tasks in a way that is similar to how humans solve problems.

4. Future of Data Science and Real life applications.

The future of data science is bright, and with increased applications across domains, its prospects are immense. Along with artificial intelligence and machine learning, data science will contribute towards a higher level and intelligent decision-making for businesses.

5. Why Python so popular? Future of Python.

Python has been used to great effect in web development, data analytics, machine learning, data science, data engineering, and even machine learning and artificial intelligence. Many top businesses and software companies depend on Python including Facebook, Google, Netflix, Instagram, and others.

6. Why Python for data analytics?

Python can handle much larger volumes of data, and therefore, more analysis. It also forms a basic requirement for most data science teams. It can easily replace mundane tasks with automation. Python also offers greater efficiency and scalability.

7. Importance of Python in machine learning.

The practical implementation of Python in machine learning projects and tasks has made the work easier for developers, data scientists, and machine learning engineers. Python can be easily used to analyze and compose available data, which also makes it one of the most popular languages ​​in data science.

8. Importance of Python in deep learning & NLP.

The Python library provides base-level items, so developers do not have to write code from scratch every time. Machine learning requires continuous data processing, and Python libraries allow you to access, process, and transform your data.

9. Supervised Learning with examples.

Supervised learning is the machine learning task of learning a function that maps an input to an output based on example input-output pairs. It infers a function from labeled training data consisting of a set of training examples

* Linear Regression.
* Logistic Regression.
* Nearest Neighbor.
* Gaussian Naive Bayes.
* Decision Trees.
* Support Vector Machine (SVM)
* Random Forest.

10. Unsupervised learning with examples.

Unsupervised learning is a type of algorithm that learns patterns from untagged data. The hope is that through mimicry, which is an important mode of learning in people, the machine is forced to build a compact internal representation of its world and then generate imaginative content from it.

* Clustering
* KNN
* Apriori

**Jobs:**

11. Role and responsibilities of a Database Engineer.

Responsibilities

Administer and maintain database security, integrity, and optimization.

Develop and run periodic and requested reports.

Develop new databases and applications.

Identify and resolve performance and capacity issues.

Establish and maintain backup and recovery processes.

Maintain associated non-referential data.

12. Role and responsibilities of a Data Analyst.

Data analysts are responsible for analyzing data using statistical techniques, implementing and maintaining databases, gathering data from primary and secondary sources, identifying, analyzing and interpreting trends from the data.

13. Role and responsibilities of a Data Engineer.

The Senior Data Engineer will oversee the department's data integration work, including developing a data model, maintaining a data warehouse and analytics environment, and writing scripts for data integration and analysis.

14. Role and responsibilities of a Data Scientist.

* Identifying relevant data sources for business needs.
* Collecting structured and unstructured data.
* Sourcing missing data.
* Organising data in to usable formats.
* Building predictive models.
* Building machine learning algorithms.
* Enhancing the data collection process.

15. Role and responsibilities of a Machine Learning Engineer.

* Designing ML systems.
* Researching and implementing ML algorithms and tools.
* Selecting appropriate data sets.
* Picking appropriate data representation methods.
* Identifying differences in data distribution that affects model performance.
* Verifying data quality.