Final Assignment

**Submitted By -Subrat Kumar Nanda**

**Q1 - Based on the videos and the reading material, how would you define a data scientist and data science? (3 marks)**

**Data Science:**

After going through the video and reviewing the material I think data science is an interdisciplinary field that involves scientific methods, processes and systems to extract knowledge or a better understanding of data in its different forms, whether structured or unstructured.

Data science combines multiple fields, including statistics, scientific methods, artificial intelligence (AI), and data analysis, to extract value from data.

Data science encompasses preparing data for analysis, including cleansing, aggregating, and manipulating the data to perform advanced data analysis. Analytic applications and data scientists can then review the results to uncover patterns and enable business leaders to draw informed insights.

**Data Scientist:**

In simple words, those who practice data science are called data scientists, and they combine a range of skills to analyze data collected from the web, smartphones, customers, sensors, and other sources to derive actionable insights.

Data scientists are curious and analytical thinkers who use a variety of math skills not limited to Mathematics, Statistics and Probability to solve a problem. They apply different available methods and algorithms to draw insights and conclusions from various kinds of data. After applying data science methodologies, they are effective communicators and story tellers who can present their findings often to present new findings or confirm what was initially suspected.

**Q2 - As discussed in the videos and the reading material, data science can be applied to problems across different industries. Give a brief explanation describing what industry you are passionate about and would like to pursue a data science career in? (2 marks)**

Increasing competition in all fields gives birth to new fields with each new generation. As a data scientist, we can only work on areas where data plays a major role. So, here are the few best domains of data science -

1-Finance,

2-Healthcare

3-Corporate Services,

4-Media and Communications,

5-Software and It services

Now a days Data Science has become very important in the Finance Industry as well, which is mostly used for **Better Risk Management and Risk Analysis**. Better analysis leads to better decisions which lead to an increase in profit for financial institutions.

**Data Science Applications in Finance Industry**

1. Risk Analytics

2. Real-Time Analytics

3. Consumer Analytics

4. Customer Data Management

5. Personalized Services

6. Financial Fraud Detection

7. Algorithmic Trading

Companies also analyze the trends in data through business intelligence tools. Accuracy in the detection of anomalies and fraud have improved with the use of Data Science. This has helped to reduce risks & scam, minimizing the losses and saving the reputation of the financial institution.

So I am passionate about pursuing a data science career in **Finance Industry**.

**Q3- Based on the videos and the reading material, what are the** ten **main components of a report that would be delivered at the end of a data science project?** (5 marks)

The 10 main components of a data science project report would be:

1. **Cover Page** with Author’s name, contacts, affiliations if any and publication date

2. **Table of Contents** containing main headings, list of contents and figures

3. **Abstract / Executive summary** to explain gist of the report

4. **Introduction** to explain the topic to new readers

5. **Literature Review** including citations of authors and data sources

6. **Methodology** section to explain the research methods and data sources used for analysis

7. Detailed Explanations including **Results** and **discussion** sections

8. **Conclusions** which generalize findings and identify possible future outcomes.

9. **References**

10. **Acknowledgement** and **Appendices**