Assignment-2 Title: Best Practices for Securing Big Data
Course: Big Data Security
Code: 20CST-482

Overview:

In this assignment, you will explore the best practices for securing Big Data. You are required to research, analyze, and present your findings on various strategies and techniques that are essential for protecting large and complex datasets from unauthorized access, breaches, and other security threats.

Objectives:

- Understand the unique security challenges posed by Big Data.
- Identify and analyze various best practices and techniques for securing Big Data.
- Evaluate the effectiveness of these practices in different scenarios.

Assignment Tasks:

Task 1: Research
Conduct a comprehensive literature review on Big Data security. Focus on identifying the unique security challenges and the latest best practices in the industry.
Prepare a summary of your findings, highlighting key challenges and the most effective security practices.

Task 2: Case Study Analysis
Select two real-world case studies where Big Data security played a pivotal role. Analyze how security was managed in these scenarios, what practices were implemented, and the outcomes of these implementations. Compare and contrast these case studies, providing insights into what practices worked well and what could have been done differently.

Task 3: Technical Evaluation
Choose three specific security techniques (e.g., encryption, access control, anomaly detection) used in Big Data. Describe how each technique works and evaluate its effectiveness and limitations.
Provide a hypothetical scenario for each technique, demonstrating how it can be implemented in a Big Data environment.

Task 4: Future Trends
Investigate emerging trends and future directions in Big Data security. Discuss how advancements in technology (like AI, blockchain, etc.) might influence Big Data security practices.
Predict potential new security challenges and suggest innovative solutions or practices that might emerge in response.

Deliverables:
Report: summarizing your literature review findings.
Case Study Analysis: A detailed analysis of the selected case studies.
Technical Evaluation Report: An in-depth evaluation of three Big Data security techniques.
Future Trends: A forward-looking paper on potential future challenges and solutions in Big Data security.

Submission Guidelines:
Submit all written components in PDF format.
Ensure that all sources are appropriately cited.

Resources:
Provide a list of suggested reading materials, websites, and any other resources for students to begin their research.