MVR DEGREE COLLEGE

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SEMESTER INTERNSHP

AWS - AMZON WEB SERVICES

MENTOR NAME: V.A.KAMESHWAR RAO

STUDENT NAME:MEEGADA HOMINI

ROLL NUMBER:120130404030

GROUP: BCOM (VOCATIONAL)

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ABSTRACT

- The objective of virtual internship is to enable participants to develop a strong foundation in data analytics methodologies, tools and technologies ,while also gaining exposure to real-world data driven challenges.
- Throughout the internship , participants will work on a series of practical tasks and projects, designed to simulate the real data analysis scenario. They will learn to collect ,clean, transform, analyze and visualize data using popular data analytics tools and programming languages . The internship will cover a wide range of topics, including data processing ,exploratory data analysis ,statistical modeling and data visualization.

INTRODUCTION

This course is a foundational course for AWS Academy participants who plan to pursue careers in data analytics . The course helps learners develop skills with AWS service that are critical for conducting analysis of big data problems. The course consists of a series of labs that you can integrate with your existing courses on data mining, data analysis, or data science. The following subsection provide a overview of how this course fits into the broader context of big data and how the services that are included in this course fit into the various phases of the big data pipeline.

LEARNING OBJECTIVES

- Relate AWS infrastructure to big data problems.
- Analyze data with AWS services.
- Describe the AWS infrastructure needed to manage and analyze big data .
- Manage, secure, scale ,compute and storages instances on AWS.
- Identify analytical AWS services.
- Configure and managed storage options.

AWS CLOUD FOUNDATION

- This course will provide fundamental techniques for data analytics ,including data collection, data extraction, data integration, data cleansing, and basic machine learning techniques.
- Cloud foundation is a foundation solution that combines AWS services with experience gained from hundreds of enterprise cloud projects to extend the value of AWS
  with improved automation ,best practices security, and increased manageability.

DATA ANALYTICS

- Data analytics converts raw data into actionable insights. It includes a range of tools, technologies, and process used to find trends and solve problems by using data . Data analytics can shape business processes , improve decision – making , and foster business growth.

WHY IS DATA ANALYTICS IMPORTANT?

Data analytics helps companies gain more visibility and a deeper understanding of their processes and services. It gives them detailed insights into the customer experience and customer problems . By shifting the paradigm beyond data to connect insights with companies can create personalized customer experience ,build related digital products , optimize operations , and increase employee productivity.

TYPES OF DATA ANALYTICS

There are four key types of data analytics: descriptive, diagnostic, predictive, and prescriptive. Together, these four types of data analytics can help an organization make data-driven decisions. At a glance, each of them tells us the following:

- **Descriptive analytics-** tell us what happened.
- **Diagnostic analytics** -tell us why something happened.
- **Predictive analytics-** tell us what will likely happen in the future.
- **Prescriptive analytics-** tell us how to act.

HOW DOES BIG DATA ANALYTICS WORK ?

Big data analytics follows five steps to analyze any large data sets:

1. Data collection
2. Data storage
3. Data processing
4. Data cleansing
5. Data analysis

DATA ANALYTICS TECHNIQUES

Many computing techniques are used in data analytics. The following some of the most common ones:

- Data cleaning and preprocessing.
- Data visualization.
- Statistical analysis.
- Machine learning.
- Data mining.

- Data cleaning and preprocessing: Before conducting any analysis ,its crucial to clean and preprocess the data. This involves handling missing values, removing duplicates , standardizing data formats , and dealing with outliers.
- Data visualization: visualizing data helps in understanding patterns and trends effectively . Tools like tableau, power BI or python libraries like matplotlib and seaborn are often used to create visual representations such as charts, graphs, and dashboards.
- Statistical analysis: statistical techniques are used to draw meaningful conclusions from data. This may involve hypothesis testing, t-tests, ANOVA, regression analysis , chi-square tests, or other statistical methods to explore relationships between variables or test hypotheses.
- Machine learning : machine learning algorithms can be applied to analyze and make predictions based on patterns in the data. Techniques like clustering , classification ,and regression algorithms are used to train models and make predictions .
- Data mining : data mining techniques are used to discover patterns and relationships in large datasets.

HOW CAN AWS HELP WITH DATA ANALYTICS?

AWS offers comprehensive , secure, scalable, and cost effective data analytics services. AWS ANALYTICS services fit all data analytics needs and enable organizations of all sizes and industries to reinvent their business with data . AWS offers purpose – built services that provide the best price-performance: data movement, data storage, data lakes, big data analytics, machine learning, and everything in between.

- AMAZON KINESIS DATA ANALYTICS is the streamlined way to transform and analyze streaming data in real time with Apache Flink . It provides built-in functions to filter, aggregate and transform streaming data for advanced analytics.

- AMAZON REDSHIFT lets you query and combine exabytes of structured and semi-structured data across your data warehouse , operational data base , and data lake.
- AMAZON QUICKSIGHT is scalable , serverless, embeddable, machine learning-powered business intelligence service built for the cloud. By using quick shift ,you can easily create and publish interactive BI dashboards that include machine learning powered insights.
- AMAZON OPENSEARCH SERVICE makes it easy to perform interactive log analytics , real time application monitoring , website search and more.

CONCLUSION

By this virtual internship , I learnt a lot about Data Analytics . I have learnt about different career paths and sample niche aspects of the field. Perhaps I do even touch on topics like machine learning or computer vision. Build specific skills with hands-on learning. Learnt new data analytics skills aligned with my career goals .

Data analytics is a powerful discipline that involves collecting, organizing, analyzing, and interpreting data to extract meaningful insights and drive informed decision-making.

THANK YOU