**IBM- Naan mudhalvan Data Analytics with Congnos**

**Phase -2**

**Student Name**  : Badhrinathan N

**Register Number** : 620821104015

**Branch**  : B.E CSE

**Year** : 3rd year

**Topic**  : Data Analytics with Cognous

**Title** : Web Traffic Analysis

**College** : Gnanamani College of Technology

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## Introduction

Web traffic analysis involves the use of machine learning models to gain insights into website user behavior, predict future traffic trends, and optimize various aspects of web content and infrastructure. This document explores the machine learning models commonly used in web traffic analysis and considerations for incorporating these models into data analytics with Cognos.

## Common Machine Learning Models in Web Traffic Analysis

### 1. Regression Models

* Linear Regression
* Polynomial Regression
* Logistic Regression
* Purpose: Predict web traffic volume, conversion rates, and numerical metrics.

### 2. Classification Models

* Decision Trees
* Random Forests
* Support Vector Machines (SVMs)
* Purpose: Identify malicious traffic, categorize user behavior, and classify user interactions.

### 3. Clustering Models

* K-Means Clustering
* Hierarchical Clustering
* Purpose: Group users with similar behavior patterns for segmentation and personalization.

### 5. Ensemble Models

* Bagging (e.g., Random Forests)
* Boosting (e.g., AdaBoost, XGBoost)
* Purpose: Combine multiple models for more accurate predictions and robustness.

## Machine Learning Models with Cognos

Steps Involved

1. Data collection
2. Data preprocessing
3. Feature Engineering
4. Model Training
5. Deployment

## Conclusion

Incorporating machine learning models into web traffic analysis with Cognos can provide valuable insights, enhance user experience, and optimize web content. By following a structured data pipeline and considering the appropriate models for your specific objectives, you can make data-driven decisions and stay responsive to evolving web traffic trends.