ARUNAI ENGINNERING COLLEGE

COLLEGE CODE:5104

DATA ANALYTICS WITH CONGOS

PRESENTED BY: KOMADURAI.P

REGISTER NO: 510421205303

DEPARTMENT: INFORMATION TECHNOLOGY

DATAEXPLORATION&VISUALIZATION

INTRODUCTION:

▶Data visualization in data exploration leverages familiar visual cues such as shapes, dimensions, colors, lines, points.

▶Angles so that data analysts can effectively visualize and define the metadata, and then perform data cleansing.

DEFINITION DATA EXPLORATION:

▶Data exploration is an approach similar to initial data analysis, where by a data analyst uses visual exploration to understand what is in a dataset and the characteristics of the data, rather than through traditional data management systems.

▶These characteristics can include size or amount of data,

completeness of the data, correctness of the data, possible

relationships amongst data elements or files/tables in the data.

DEFINITION OF DATA VISUALIZATION:

▶Data visualization is the graphical representation of information

and data. By using visual elements like charts, graphs, and maps,

data visualization tools provide an accessible way to see and

understand trends, outliers, and patterns in data.

▶Additionally, it provides an excellent way for employees or business

owners to present data to non-technical audiences without

confusion.

▶This is called as Data Visualization.

TOOLS:

▶“ Data Exploration “ tools make data analysis easier to present and

understand through interactive, visual elements, making it easier to

share and communicate key insights.

▶Data exploration tools include data visualization software and

business intelligence platforms, such as Microsoft Power BI, Qlik

and Tableau.

▶“ Data Virtualization “ is an approach to integrating data from

multiple sources of different types into a holistic, logical view

without moving it physically.

▶In simple terms, data remains in original sources while users can access and analyze it virtually via special middleware.

WORKING:

▶Data visualization is the practice of translating information into a

visual context, such as a map or graph, to make data easier for the

human brain to understand and pull insights from.

▶The main goal of data visualization is to make it easier to identify

patterns, trends and outliers in large data sets.

▶Data Visualization tools include Google Charts, Tableau, Grafana,

Chartist, FusionCharts, Datawrapper, Infogram, and ChartBlocks

etc.

▶These tools support a variety of visual styles, be simple and easy to

use, and be capable of handling a large volume of data.

SUPERVISEDLEARNING-REGRESSION

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used to predict continuous values.

▶The ultimate goal of the regression algorithm is to plot a best-fit

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REGRESSION EXAMPLE:

1) Linear Regression.

2) Ridge Regression.

3) Neural Network Regression.

4) Lasso Regression.

5) Decision Tree Regression.

6) Random Forest.

7) KNN Model.

8) Support Vector Machines (SVM)

SUPERVISEDLEARNING-REGRESSIONWORKING:

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▶The three main metrics that are used for evaluating the

trained regression model are variance, bias and error.



▶Supervised learning, also known as supervised machine learning,

is a subcategory of machine learning and artificial intelligence.

▶It is defined by its use of labeled datasets to train algorithms

that to classify data or predict outcomes accurately.

CONCLUSION:

▶Supervised learning is the most commonly utilized machine

learning algorithm, as it is easy to understand and use. The model

helps form accurate results using labeled information and variables

as inputs.

▶Regression is a supervised machine learning technique which is

used to predict continuous values. The ultimate goal of the

regression algorithm is to plot a best-fit line or a curve between the

data.