Job Role: Automotive Dealership Data Analysis Engineer

Brief Job Description:

Individual at this job is responsible for performing Sales and Service Data Analysis by using edge computing devices, analytical and statistical tools and developing the end-to-end architecture for data flow for effective data extraction.

Personal Attributes:

The person should be result oriented with good technical and analytical skills, should have Excellent Interpersonal Skills, communication and presentation skills and a good team player. They should have ability to manage projects, prioritizing of work and mentoring the budding engineers.

Applicable National Occupational Standards (NOS)

Compulsory NOS: -

1. Manage work and resources (Service)

2. Interact effectively with team, customers and others

3. Extract and collect data of Automotive Sales, Service & Spare Parts from dealerships

4. Perform preparation and acquisition of dealerships data for analysis

5. Perform dashboarding of the analysed data of dealerships

ASC/Naaaa: Extract and collect data of Automotive Sales, Service & Spare Parts from dealerships

Description

This NOS unit is about performing tasks related to collection and extraction of data from various dealership entities for answering relevant business questions.

Scope
The scope covers the following:
- Assessing project requirements
- Designing of project outline and selection of various data attributes
- Selection of data integration platform to integrate the data from various department

Elements and Performance Criteria

Assessing project requirements

To be competent, the user/individual on the job must be able to:

PC1. Evaluate the requirements of the business questions to be catered with either visualization platforms or analytics and predictive modelling solutions

PC2. Design data architecture for collection and extraction of data from various departments of dealershiousing connectors and platforms

PC3. Assess all organizational processes related to the use of data and analytics in a dealership

PC4. Check that the existing setup is capable or not for data collection and analysis

Designing of project outline and selection of various data attributes

To be competent, the user/individual on the job must be able to:

PC5. Prepare a layout of project execution where it should defend the choice of technology and its cost in dealership

PC6. Prepare the outline of the development process and its requirements for both material and resources under the guidance of manager

PC7. Define various data attributes and what level of analytics is required to analyse data and deliver value with the support of manager

Selection of data integration platform to integrate the data from various department

To be competent, the user/individual on the job must be able to:

PC8. Identify suitable data integration tool according to the volume of data that need to be analysed

PC9. Create an end-to-end data flow using ETL (Extract-Transform-Load) tool using different connectors for different types of data sources

PC10. Create datawarehouse for data acquisition

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1.   Organizational policies, procedures, and guidelines that relate to designing and maintaining databases

KU2.   Organizational policies and procedures for sharing data

KU3.   Organizational policies and procedures for documenting databases architectures and backup mechanisms

KU4.   Who to involve while designing and developing the database architecture and pipelines for the solution

KU5.   The range of standard platforms and tools available and how to use them

KU6.   The database connectors and application connectors for application-cloud communications

KU7.   The updated internal and external cybersecurity regulations

KU8.   The impacts of network on the environment and human health

KU9.   ETL tools like Talend, SQL Server Integration Services (SSIS), etc.

KU10.   Basics of SQL

KU11. Overview of Sales & Service core Processes

KU12. Process KPI of Automotive Sales, Service & Spare Parts

Generic Skills (GS)
User/individual on the job needs to know how to:

GS1.   Follow instructions, guidelines, procedures, rules, and service level agreements

Gs2.   Listen effectively and communicate information accurately

Gs3.   Follow rule-based decision-making processes

Gs4.   Make decisions on suitable courses

Gs5.   Plan and organize the work to achieve targets and meet deadlines

Gs6.   Apply problem-solving approaches to different situations

Gs7.   Analyse the business impact and disseminate relevant information to others

Gs8.   Apply balanced judgments to different situations

Gs9.   Check the work is complete and free from errors

ASC/Nbbbb: Perform preparation and acquisition of dealerships data for analysis

Description:

This NOS unit is about performing Exploratory Data Analysis on the data extracted, deciding which data attributes are required for analytics and analysing the extracted attributes using excel/ open-source python libraires .

Scope
The scope covers the following:
- Identify business goals for which data need to be analysed
- Prepare the data need to be analysed
- Support in statistical analysis on the selected attributes of data

Elements and Performance Criteria

Identify business goal for which data need to be analysed
To be competent, the user/individual on the job must be able to:

PC1. Prepare a list of the business problems within the organization of user/individual

PC2. Obtain the business goals which can be achieved using available datasets from the manager

PC3. Identify the timeframe of which data is required to address for achieving the business goal

Prepare the data need to be analysed
To be competent, the user/individual on the job must be able to:

PC4. Create metadata for the selected dataset by following SOP/WI

PC5. Clean the data to remove erroneous data from dataset like removing outliers, missing values. etc. by using appropriate tool

PC6. Convert and map the data from one raw format into another

PC7. Prepare the data in a way that makes it accessible for effective use further down the line

Support in statistical analysis on the selected attributes of data
To be competent, the user/individual on the job must be able to:

PC8. Perform descriptive statistics like measures of central tendency (mean, median, mode), measures of variability (variance, standard deviation), and frequency distribution on the data under the guidance of manager

PC9. Perform inferential statistics like Hypothesis Testing, Regression Analysis. etc. on the data as per the instructions received

PC10. Prepare a list of highly correlated attributes and take approval from manager

PC11. Find correlation amongst the selected attributes of the data .and plot their heatmap

Knowledge and Understanding (KU)
The individual on the job needs to know and understand:

KU1.   Product portfolio of organization

KU2.   Company manufacturing processes

KU3.   Standard Operation Procedures (SOP) recommended by manufacturer for using equipment / machinery in use

KU4.   Descriptive and Inferential statistics

KU5.   Types of data wrangling and data cleaning methods

KU6.   Suitable documentation of the organization for the metadata creation.

KU7.   Python open-source libraries like SciPy, Pandas, Matplotlib, SciKit-Learn, etc.

KU8.   Open-source web application that you can use to create and share documents that contain live code, equations, visualizations, and text like Jupyter Notebook, Jupyter Lab, etc.

KU9.   Python based platforms like Anaconda

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1.   Communicate effectively at the workplace

Gs2.   Write observations and any work-related information in English/regional language

GS4.   Recognize a workplace problem and take suitable action

Gs5.   Analyse and apply the information gathered from observation, experience, reasoning or communication to act efficiently

Gs6.   Complete the assigned tasks in a timely and efficient manner

Gs7.   Coordinate with the team for installing the new systems efficiently

ASC/Ncccc: Perform dashboarding of the analysed data of dealerships

Description
This NOS unit is about creating different visualizations charts for the important attributes of the analysed data. This is also about selecting and using different tools to create and publish real time interactive dashboards for valuable insights which play important role in decision process making.

Scope
The scope covers the following:
- Select appropriate charts for different attributes of the dataset
- Create dashboards
- Deployment of dashboards in local server or on the cloud

Elements and Performance Criteria

Select appropriate charts for different attributes of the dataset
To be competent, the user/individual on the job must be able to:
PC1.   Segregate nominal and ordinal attributes in the dataset
PC2.   Select appropriate charts for nominal and ordinal variables
PC3.   Select appropriate visualization chart for time series data

Create dashboards
To be competent, the user/individual on the job must be able to:
PC4.   Integrate geographical map for relevant attributes in dashboards
PC5.   Create dashboard on a sales and order data having time-stamp attributes using dashboarding tool
PC6.   Create demand forecasting dashboard on a relevant dataset using dashboarding tool

Deployment of dashboards in local server or on the cloud
To be competent, the user/individual on the job must be able to:
PC7.   Upload the dashboards on the local server or cloud
PC8.   Verify and validate the compatibility of dashboard on different devices
PC9.   Create the alert system in real time dashboard as per requirement

Knowledge and Understanding (KU)
The individual on the job needs to know and understand:

KU1.   Organizational policies, procedures, and guidelines that relate to designing and maintaining networks

KU2.   Organizational policies and procedures for sharing data

KU3.   Organizational policies and procedures for documenting network designs and fall-back mechanisms

KU4.   Different types of visualizations charts   Bar Graph, Line Graph, Stacked Bar Graph, Pie Chart, Scatter Plot Chart, etc.

KU5.   Different types and categories of data variables qualitative, quantitative, nominal, ordinal, dicrete, continuous, etc.

KU6.   Different types of visualizations tools like Microsoft PowerBI Desktop, Tableau Public

KU7.   Local machine server architecture

Generic skills (GS)
User/individual on the job needs to know how to:

Gs1. Follow instructions, guidelines, procedures, rules, and service level agreements

Gs2. Listen effectively and communicate information accurately

Gs3. Follow rule-based decision-making processes

Gs4. Make decisions on suitable courses

Gs5. Plan and organize the work to achieve targets and meet deadlines

Gs6. Refer anomalies to the supervisor

Gs7. Ask for clarification and advice from appropriate people

Gs8. Analyse the business impact and disseminate relevant information to others

Gs9. Apply balanced judgments to different situations gs10. Check the work is complete and free from errors

GS11. Work independently and collaboratively