**Pandas with Python for Data Science**

**Date:** 14 Sep 2023

**To:** Sir Hussain Wali

**From:** Muhammad Hamza Malik

I would like to inform you that I have completed the following course “**Pandas with Python for Data Science”** and covered the associated materials:

**Section-1: Introduction**

**Topic:** Introduction to Pandas with Python.

**Section-2: Data Set**

**Topics:** Understanding Jupiter Environment.

Reading the Data Set.

Series and Data Frame.

Operations in Data Set.

More on Pandas Functions.

Column Names and Operation.

Removing Columns and Rows.

Sorting Data Frame.

**Section-3: Data Analysis**

**Topics:** Filter Multiple Criteria.

Selective Columns and Rows.

Data Frame and Series.

Axis Parameter.

String Method in Pandas.

Changes the data types.

Examples of Data Type Change.

Group By Functions.

Functions on Series.

Plotting Series in Pandas.

Dealing with Null Values.

Uses of Index.

Column in Index.

Output of Data.

Functions of iX Method.

InPlace Parameter.

Inspecting the Space.

Reducing the Space.

Using in Country Series.

Creating Manual Data Frame.

Random Sampling with Pandas.

Concept of Dummy Coding.

Creating Dummified Values.

Duplicates in Data Frame.

Functions for Date and Time.

Setting with Copy Warning.

Examples on Copy Warning.

Changing the Display Option.

Formatting the Data.

Tricks for Display Options.

Data with Rows and Columns.

Converting Data Frame.

**Section-4: Azure Data Lake**

Introduction to Azure Data Lake.

Merging Data Frames.

Shaping a Data Frame.

Filling NA Values.

Importing Time Series Data.

Working with Interpolate.

Stacking and Unstacking.

Stacking and unstacking for 3 Levels.

Concept of Crosstab.

More on Crosstab.

More Options with Crosstab.

Functions of Pivot.

Pivot Table Method.

Example on Pivot Table.

Data Frame to CSV File.

Using Excel Functions.

**Section-5: Summary**

Summary on Pandas.