

COURSE TITLE:

CERTIFICATE IN DATA ANALYSIS TECHNIQUES UTILIZING MICROSOFT EXCEL

[Certificate issued by the Institute of Training & Occupational Learning
("ITOL", United Kingdom)

LEVEL: Intermediate to Advanced

TARGET AUDIENCE:

Any regular user of Microsoft Excel wanting to learn the more advanced aspects and angles of raw data analysis, and converting it into meaningful information by applying the various built-in functions, features, and formulas. Emphasis will be on how these functions and features can be applied in various working industries.

LEARNING OUTCOME:

Equipping participants with advanced level of knowledge and skills to understand the power of spreadsheets and how best to use them for reporting, data analysis and analytics. Various methods are taught on converting numerical information into vital and crucial information used for management decision making.

Participant are also shown numerous aspects of "What-If" analysis that can be applied in many day-to-day scenarios. With flexible filtering, searching and sorting tools, advanced usage of Pivot Tables, and applying various aspects of Conditional Formatting to "trigger" values/data in reports, participants are able to find and examine vast information quickly. Combined with the knowledge of presenting them, seemingly endless data can be presented in a tangible way.

Some of the topics covered:

- Forecasting future sales figure based on previous data
- Summarizing large sets of data using Pivot Table and ranking data based on Top 10 figures
- Grouping of categories of data using Subtotal
- Identifying if duplicate data exists and how to remove it
- Highlighting data if it meets specified criteria
- Performing date calculations for ageing reports, duration of projects, etc.

- Ranking of data without sorting it (e.g. finding out the position number based on highest to lowest value and vice-versa)

PRE-REQUISITE:

Basic understanding of what Excel offers, simple formatting techniques, and application of functions like SUM, MAX, MIN, AVERAGE, and COUNT.

COURSE OUTLINE:

1. COMPREHENDING FORMATTING OF DATA

- Ensuring data can be read meaningfully i.e. numbers are captured as numbers, and not as text
- Converting basic data to various formats
- Using the Format Painter to highlight specific text
- Tips and shortcut techniques when formatting data
- Various aspects of formatting numbers and limitations within Excel

2. UNDERSTANDING AND WORKING WITH DATA

- Use of Relative and Absolute Cell Referencing (use of \$ sign)
- Shortcut keys to move around data quickly
- Highlighting specific data based on various conditions given
- Validating a range of data based on condition set
- Visualizing data using customized Data Bars, Color Scales, and Icons
- Password protect a range of cells and workbook
- Converting text to numbers from external data file
- Finding duplicate values and removing them
- Changing text orientation
- Creating a watermark

• INTRODUCTION TO DATA ANALYSIS

- Importance of Data Analysis
- Performing simple what-if calculations using COUNTIF, SUMIF and AVERAGEIF functions
- Linking above functions to Conditional Formatting options in highlighting specific criteria
- Automating the process of highlighting minimum and maximum values from a

given range

- Automatically converting values to percentages based on output of data analysis using functions

- **USE OF LOGICAL FUNCTIONS**

- Applying the IF statement for comparison purposes
- Combining other functions within the IF statement
- Highlighting specific output retrieved via IF statement Performing comparative analysis using Logical functions
- Applying the Nested IF statement for more than a single condition

- **UNDERSTANDING CONCEPTS OF DATABASES AND SEARCHING SPECIFIC VALUES USING VLOOKUP AND HLOOKUP FUNCTIONS**

- Understanding differences between vertical and horizontal databases
- Importance of unique column and row of databases
- Identifying when to use VLOOKUP and HLOOKUP functions, and to search specific values from a database
- Calculating bonuses for multi-tier payment scheme
- Complex calculations using VLOOKUP function

- **SUMMARIZING AND ANALYZING DATA USING PIVOT TABLE**

- Use of Pivot Table
- Updating and modifying Pivot Table
- Changing calculated fields in Pivot Table
- Rearranging Fields in a Pivot Table
- Explaining the Report Layout Options
- Using the Report Filters Feature
- Using Top 10 & Date Filters
- Handling Blank Cells
- Sorting a Pivot Table
- Formatting a Pivot Table
- Grouping of Data
- Creating Custom Formats
- Adding Formulas to a Pivot Table
- Changing a Calculation in a Pivot Table
- Counting with a Pivot Table
- Creating a Pivot Chart

- How Slicer works
- Adding a Timeline to Pivot Table

- **ANALYZING & REPORTING DATA USING FILTERS AND SUBTOTALS**

- Aspects of Filtering data and its benefits
- Using the Filter and Advanced Filter options
- Performing analysis using Filter
- Highlighting and removing duplicate data
- Applying Subtotal for calculations of grouped data
- Using multi-level Subtotals for different functions

- **WORKING WITH PRECISION OF NUMBERS**

- Rounding up and down of numbers with decimal positions, and large numbers
- Rounding of numbers to the nearest smallest value
- Displaying only a portion of a large number
- Using functions to handle precision of number formats
- Removing data within numbers (e.g. removal of “-“ within IC numbers)

- **MANIPULATING DATABASES WITH TEXT FUCTIONS**

- Combining contents of various cells into a single cell
- Comparing contents of one cell with another to check for identical data
- Replacing specific text with another
- Removing unwanted spaces within a cell content
- Repeating characters displayed
- Converting data to upper, lower and proper cases
- Finding length of text within a cell

- **PERFORMING DATE CALCULATIONS**

- How Excel handles Date calculations
- Limitation of Dates that can be recorded
- Calculating differences of two dates and converting it to years and months
- Understanding various date formats and performing calculations accordingly

- **FORECASTING FUTURE VALUES**
 - Understanding types of charts for forecasting for linear and exponential growth
 - Forecasting future values based on previous results (e.g. sales forecasting, market analysis, etc.)
 - When to apply the TREND and GROWTH functions
 - Limitations of above functions

- **OTHER EXCEL FUNCTIONS FOR DATA ANALYSIS**
 - Ranking variables in descending or ascending order
 - Performing calculations based on selection of different ranges
 - Understanding the use of optional parameters within a function

Trainer's Biodata



Palani Murugappan (known as *The Interpreter* i.e. helps converge data into information), is a PSMB/HRDF certified trainer who shares with his participants his knowledge and experience culled over 20 years of involvement in the software application training industry. The Interpreter applies the **VERIFY™** technique as his training methodology i.e. **V**alidate, **E**ncapsulate and **R**ationalize raw data in **I**dentifying **I**nformation for **F**uture **Y**ield.

The Interpreter has helped many industries personnel achieve their goals of tabulating raw data. He has helped

- Sales & Marketing personnel forecast future sales patterns;

- Human Resources personnel perform various levels of KPIs from employees' raw data, and setup a simplified payroll system for Small to Medium Sized Industries;
- Finance personnel to perform various What-If situations;
- Production personnel to create meaningful scenarios should price of raw materials increase by a small or large margin;
- Medical professionals to increase their level of understanding on analyzing lab and various test results including profiling of patients;
- General employees improve their general reporting and presentation skills.

If you want to make sense of the data surrounding you; how your organization's data can help you expand or cut down areas of expenses; or simply move up the corporate ladder by being ahead of your peers in terms of interpreting raw data, the Interpreter will be able to assist by mapping the data into a spreadsheet format like Microsoft Excel and performing various business process analysis.

One of the reasons for using Microsoft Excel is it the most commonly found spreadsheet in an office environment. While most people are familiar with Microsoft Excel, only a handful of them know the art of extracting data from a database; or converging raw data into information using the built-in tools of Excel. This is where the Interpreter excels in showing the many ways of doing this.

The Interpreter is able to communicate with most levels of management based on his industry exposure, articles contributed to business magazines, and the range of 51 books he has authored over the years. Samples of his books are as listed below.



Palani, The Interpreter, holds an MBA (Majoring in Electronic Commerce) from the Charles Sturt University, Australia.

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