



DATA ANALYSIS WITH EXCEL

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COURSE OVERVIEW

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POWER QUERY

- Power Query is a data connection technology that enables users to discover, connect, combine, and refine data across a wide variety of sources.
- Power Query enables users to perform various data transformation tasks such as cleaning, shaping, and merging data before loading it into their analysis environment or worksheet

POWER QUERY

Steps to access Power Query

1. Navigate to the "Data" tab and, Click on "Get Data" under "Get & Transform Data" or "Power Query".
2. In the dropdown menu, select "From Table/Range" to import data that is already present in your Excel workbook.
3. Click and drag to select the range of cells that contain your data, including headers if applicable.
4. In the Power Query Editor, perform data cleaning, shaping, and transformation tasks using the different options available in the menu and the query settings pane.
5. Close, and load the transformed data back into Excel.
6. Load the data directly into a worksheet, into the Excel data model, or as a connection-only query.

WHAT IF ANALYSIS

- "What-If" analysis is a process of exploring different scenarios by changing variables and observing the resulting changes in outcomes.
- What if Analysis is used in decision-making, planning, and forecasting across various fields such as finance, business, engineering, and, economics.
- The goal of what-if analysis is to understand how changes in one or more variables can affect outcomes or results.

WHAT IF ANALYSIS TECHNIQUES

ScenarioManager:

- Scenario manager is a technique used to analyze the potential impact of different scenarios or sets of assumptions on outcomes of interest.
- It involves creating multiple scenarios representing different possible future conditions or events and evaluating their effects on the outcomes being analyzed.

WHAT IF ANALYSIS TECHNIQUES

Goal Seek:

- Goal Seek allows you to set a target value for a formula cell and determine the input value needed to reach that target.

Data Table:

- A Data Table allows the user to explore the impact of changing one or two input variables (such as interest rates,) on one or more output variables (such as profit, revenue, or net present value) by systematically varying the input values, providing valuable insights into the sensitivity of outcomes to changes in input variables.

WHAT IF ANALYSIS TECHNIQUES

How to create scenarios

- Navigate to click on "What-If Analysis" and select "Scenario Manager."
- Create the scenario by adding the new scenario this includes: entering a name for the scenario and specifying the values for each variable based on the scenario you want to analyze.
- If required you can add multiple scenarios), repeat the process of adding scenarios for each one.
- After adding all scenarios, you can view and manage them in the Scenario Manager dialog box.
- To display the results of each scenario, navigate to the "What-If Analysis," and select "Scenario Manager." Then, select the scenario you want to display and click "Show."

WHAT IF ANALYSIS TECHNIQUES

Goal Seek:

- Determine the target value (goal) you want to achieve and the variable you want to change to achieve that goal.
- Navigate to the "What-If Analysis" and select "Goal Seek" and set Parameters by entering the cell reference containing the formula you want to set the goal
- Run Goal Seek by Clicking "OK" to run Goal Seek. Excel will adjust the value of the variable you specified until the formula cell reaches the desired value.

WHAT IF ANALYSIS TECHNIQUES

How to create a Data Table

- Arrange your data in a table format by Specifying the input values (variables) in the row and column headers and entering formulas in the cells to calculate the output values (results).
- Highlight the range of cells containing the input values and formulas, including the cell where you want to display the results.
- Navigate to the "What-If Analysis" and select "Data Table."
- Specify Input Cells by entering the cell references for the input values (row input cell and column input cell) corresponding to the row and column headers of your data table.
- Click "OK" to run the Data Table and excel will show calculated results for each combination of input values and display them in the specified range.

LOOK UP FUNCTIONS

Look Up Functions

- Lookup functions are tools used to find specific information within a table or range of data based on certain criteria.
- They are widely used for data analysis, reporting, and decision-making.

LOOK UP FUNCTIONS

- VLOOKUP (Vertical Lookup):

Syntax: **VLOOKUP(lookup_value, table_array, col_index_num, [range_lookup])**

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HLOOKUP (Horizontal Lookup):

- Syntax: **HLOOKUP(lookup_value, table_array, row_index_num, [range_lookup])**

- Hlookup is Similar to VLOOKUP, but searches for a value in the first row of a table_array and returns a value from the same column in the row specified by row_index_num.

