

Excel E - Book

Must have Excel Function for Finance Students / Working Professionals



Date and Time Functions

Date

The DATE function in Excel is used to create a date from the individual year, month, and day components.

=DATE(year,month,day)

Workday

The WORKDAY function in Excel is used to calculate the date that is a specified number of workdays (i.e., business days) ahead of or behind a given date.

=WORKDAY(start_date, days, [holidays])

EOMONTH

The EOMONTH function in Excel is used to calculate the last day of the month which is a specified number of months before or after a given date. The syntax for the EOMONTH function is as follows:



=EOMONTH(start_date, months)

Today

The TODAY function in Excel is used to return the current date as a serial number.

=TODAY()

Time Value of Money

PMT

The PMT function in Excel is used to calculate the **EMIs** for a loan or investment, based on a constant interest rate, a fixed payment amount, and a specified number of periods.

=PMT(rate, nper, pv, [fv], [type])



PV

The PV function in Excel is used to calculate the present value of a future payment or investment. It takes into account the future value, the interest rate, and the number of periods to determine what the present value of that investment or payment would be today.

=PV(rate, nper, pmt, [fv], [type])

FV

The FV (Future Value) function in Excel is used to calculate the future value of an investment or loan, based on a constant interest rate, a fixed payment amount, and a specified number of periods. The syntax for the FV function is as follows:

=FV(rate, nper, pmt, [pv], [type])

NPER

The NPER function in Excel is used to calculate the number of payment periods required to pay off a loan or investment, given a constant interest rate, fixed payment amount, and a specific present value or future value.

The syntax for the NPER function is as follows:

=NPER(rate, pmt, pv, [fv], [type])



RATE

The RATE function in Excel is used to calculate the interest rate per period of a loan or investment, given the total number of periods, fixed payment amount, and present value or future value. The syntax for the RATE function is as follows:

=RATE(nper, pmt, pv, [fv], [type], [guess])

PPMT

The PPMT function in Excel is used to calculate the payment on the principal of a loan or investment for a given period, based on a constant interest rate and constant payments. The syntax for the PPMT function is as follows:

=PPMT(rate, per, nper, pv, [fv], [type])

IPMT

The IPMT function in Excel is used to calculate the payment on the interest of a loan or investment for a given period, based on a constant interest rate and constant payments.

The syntax for the IPMT function is as follows:

=IPMT(rate, per, nper, pv, [fv], [type])



Financial Modeling Related Functions

NPV

The NPV (Net Present Value) function in Excel is used to calculate the present value of a series of cash flows ***(at regular intervals)***, taking into account the time value of money and the required rate of return.

The syntax for the NPV function is as follows:

=NPV(rate, value1, [value2], ...)

XNPV

The XNPV function in Excel is similar to the NPV function, but it allows for cash flows that occur at ***irregular*** intervals.

The syntax for the XNPV function is as follows:

=XNPV(rate, values, dates)



IRR

The IRR (Internal Rate of Return) function in Excel is used to calculate the rate of return for a series of cash flows that occur **at regular intervals**. The IRR is the discount rate that makes the net present value of the cash flows equal to zero. The syntax for the IRR function is as follows:

=IRR(values, [guess])

XIRR

XIRR function in Excel is similar to the IRR function, but it allows for cash flows that occur **at irregular intervals**. XIRR function calculates the internal rate of return for a series of cash flows that occur on specific dates.

The syntax for the XIRR function is as follows:

=XIRR(values, dates, [guess])



Lookup & Logical

Vlookup

The VLOOKUP function in Excel is a powerful tool for looking up and retrieving information from a table of data.

The name VLOOKUP stands for "Vertical Lookup" which means it looks up values in the vertical column of a table.

=VLOOKUP(lookup_value, table_array, col_index_num, range_lookup)

Hlookup

The HLOOKUP function in Excel is similar to the VLOOKUP function, but instead of looking up a value in a vertical column, it looks up a value in a horizontal row. The name HLOOKUP stands for "Horizontal Lookup".

=HLOOKUP(lookup_value, table_array, row_index_num, range_lookup)

Index / Match

The INDEX MATCH function is a powerful tool in Microsoft Excel that allows you to look up a specific value within a table or range of data. Unlike the more commonly used VLOOKUP function, the INDEX MATCH function can be used to lookup values in any column of a table and does not require the lookup column to be on the left-hand side of the table.



The INDEX function: This function returns a value from a table based on a specified row and column number.

=INDEX(array, row_num, [column_num])

The MATCH function: This function searches for a specified value in a range of cells and returns the position of the value within the range.

=MATCH(lookup_value, lookup_array, [match_type])

Indirect

The INDIRECT function in Microsoft Excel is used to return a reference to a range based on a text string. This can be particularly useful in cases where you have a cell that contains a reference to another cell, but the reference needs to be dynamic or changeable.

=INDIRECT(ref_text, [a1])

Address

The ADDRESS function in Microsoft Excel is used to return the cell address as a text string based on a specified row and column number. This can be useful when you need to dynamically reference a cell in a formula.

The syntax of the ADDRESS function is as follows:

=ADDRESS(row_num, column_num, [abs_num], [a1], [sheet_text])



Offset

The OFFSET function in Microsoft Excel is used to return a reference to a range of cells that is offset from a starting cell reference by a specified number of rows and columns. This can be useful when you need to create dynamic references that change based on the value of other cells.

=OFFSET(reference, rows, cols, [height], [width])

Transpose

The TRANSPOSE function in Microsoft Excel is used to transpose a range of cells, flipping rows into columns or columns into rows. This can be useful when you need to change the orientation of your data for use in a different part of your workbook.

=TRANSPOSE(array)

IF

This function tests whether a condition is true or false, and returns one value if true and another value if false.

=IF(condition, value_if_true, value_if_false)



And Function

The AND function in Microsoft Excel is used to perform a logical test that returns TRUE if all of the arguments are true, and FALSE if any of the arguments are false.

=AND(logical1, [logical2], ...)

IFERROR

This function checks for errors in a formula and returns a custom result if an error is found.

=IFERROR(value, value_if_error)

Math/Stats Functions

SUM

The SUM function in Excel is used to add up a range of values. For example, if you have a column of numbers in cells A1:A5, you can use the formula of numbers in cells A1:A5, you can use the formula

=SUM(A1:A5) to add up the values in that column.



AVERAGE

The AVERAGE function in Excel is used to calculate the arithmetic mean of a range of values.

For example, if you have a column of numbers in cells A1:A5, you can use the formula

=AVERAGE(A1:A5) to calculate the average of those numbers.

MEDIAN

The MEDIAN function in Excel is used to find the middle value in a range of values.

For example, if you have a column of numbers in cells A1:A5, you can use the formula.

=MEDIAN(A1:A5) to find the median of those numbers.

MAX

The MAX function in Excel is used to find the largest value in a range of values.

For example, if you have a column of numbers in cells A1:A5, you can use the formula

=MAX(A1:A5) to find the largest number in that column.



MIN:

The MIN function in Excel is used to find the smallest value in a range of values. For example, if you have a column of numbers in cells A1:A5, you can use the formula

=MIN(A1:A5) to find the smallest number in that column.

SUMIF

The SUMIF function in Excel is used to add up values in a range that meets certain criteria.

For example, if you have a column of sales figures in cells A1:A5 and you want to add up the sales for a particular product, you can use the formula

=SUMIF(B1:B5, "Product A", A1:A5), where B1:B5 contains the product names and A1:A5 has sales figures.

COUNTIF

The COUNTIF function in Excel is used to count the number of cells in a range that meet certain criteria.

For example, if you have a column of sales figures in cells A1:A5 and you want to count how many sales are above \$100, you can use the formula

=COUNTIF(A1:A5, ">100").



SUMIFS

The SUMIFS function in Excel is used to add up values in a range that meets multiple criteria.

For example, if you have a column of sales figures in cells A1:A5, a column of product names in cells B1:B5, and a column of sales dates in cells C1:C5, you can use the formula

=SUMIFS(A1:A5, B1:B5, "Product A", C1:C5, ">="&DATE(2022,1,1)) to add up the sales for Product A that occurred on or after January 1, 2022.

COUNTIFS

The COUNTIFS function in Excel is used to count the number of cells in a range that meet multiple criteria.

For example, if you have a column of sales figures in cells A1:A5, a column of product names in cells B1:B5, and a column of sales dates in cells C1:C5, you can use the formula

=COUNTIFS(B1:B5, "Product A", C1:C5, ">="&DATE(2022,1,1)) to count the number of sales for Product A that occurred on or after January 1, 2022.



RANK

The RANK function in Excel is used to determine the rank of a particular value in a range of values. The rank of a value is its position in a list of values, where the highest value is ranked 1, the second highest value is ranked 2, and so on.

=RANK(number,ref,[order])

SMALL

The SMALL function in Excel is used to find the kth smallest value in a range of values. For example, if you have a column of sales figures in cells A1:A5, you can use the formula =SMALL(A1:A5,2) to find the second smallest value in that column.

The syntax for the SMALL function is as follows:

=SMALL(array,k)

LARGE

The LARGE function in Excel is used to find the kth largest value in a range of values. For example, if you have a column of sales figures in cells A1:A5, you can use the formula

=LARGE(A1:A5,2) to find the second largest value in that column.

The syntax for the LARGE function is as follows:

=LARGE(array,k)



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