**EXCEL FUNCTIONS AND FORMULAE**

Microsoft Excel is a powerful tool that has become a staple in most businesses and industries. It is used to manage and analyse data, and can perform complex calculations with ease. Excel formulae are a set of instructions that are used to carry out specific tasks in a spreadsheet. Here are some commonly used Excel formula that will make your work easier.

| **Type** | **Function/Formula** | **Description** | **Example** |
| --- | --- | --- | --- |
| Math | SUM | Adds a range of cells | **=SUM(A1:A5)** |
| Math | AVERAGE | Calculates the average of a range of cells | **=AVERAGE(B1:B10)** |
| Math | MAX | Returns the largest value in a range of cells | **=MAX(C1:C100)** |
| Math | MIN | Returns the smallest value in a range of cells | **=MIN(D1:D50)** |
| Math | COUNT | Counts the number of cells in a range | **=COUNT(E1:E20)** |
| Date | TODAY | Returns the current date | **=TODAY()** |
| Date | NOW | Returns the current date and time | **=NOW()** |
| Date | YEAR | Extracts the year from a date | **=YEAR(F1)** |
| Date | MONTH | Extracts the month from a date | **=MONTH(G1)** |
| Date | DAY | Extracts the day from a date | **=DAY(H1)** |
| String | CONCATENATE | Joins text strings together | **=CONCATENATE("Hello", "World")** |
| String | LEN | Calculates the length of a text string | **=LEN(I1)** |
| String | LEFT | Extracts a specified number of characters from the beginning of a text string | **=LEFT(J1, 5)** |
| String | RIGHT | Extracts a specified number of characters from the end of a text string | **=RIGHT(K1, 3)** |
| If/Ifs | IF | Performs a logical test and returns one value if true and another if false | **=IF(L1>10, "Yes", "No")** |
| If/Ifs | SUMIF | Adds the cells specified by a given condition | **=SUMIF(M1:M10, ">50")** |
| If/Ifs | COUNTIF | Counts the number of cells specified by a given condition | **=COUNTIF(N1:N100, "Red")** |
| Logical | AND | Returns TRUE if all arguments are TRUE | **=AND(O1,O2,O3)** |
| Logical | OR | Returns TRUE if any argument is TRUE | **=OR(P1,P2,P3)** |
| Logical | NOT | Returns the opposite of a logical value | **=NOT(Q1)** |
| Other | VLOOKUP | Looks up a value in a vertical lookup table | **=VLOOKUP(R1, A1:B10, 2, FALSE)** |
| Other | HLOOKUP | Looks up a value in a horizontal lookup table | **=HLOOKUP(S1, A1:F5, 4, FALSE)** |
| Other | INDEX | Returns the value of a cell in a specified row and column | **=INDEX(T1:Z10, 3, 5)** |
| Other | MATCH | Searches for a specified value in a range of cells and returns its relative position | **=MATCH(U1, A1:A10, 0)** |

As a **data analyst**, there are several other important Excel functions that can be useful in your work. Here are some additional functions that are **commonly used by data analysts**:

| **Type** | **Function/Formula** | **Description** | **Example** |
| --- | --- | --- | --- |
| Math | ROUND | Rounds a number to a specified number of decimal places | **=ROUND(A1, 2)** |
| Math | ROUNDUP | Rounds a number up, away from zero | **=ROUNDUP(B1, 0)** |
| Math | ROUNDDOWN | Rounds a number down, towards zero | **=ROUNDDOWN(C1, 0)** |
| Math | ABS | Returns the absolute value of a number | **=ABS(D1)** |
| Math | SQRT | Returns the square root of a number | **=SQRT(E1)** |
| Math | POWER | Raises a number to a specified power | **=POWER(F1, 2)** |
| Statistical | AVERAGEIF | Calculates the average of cells specified by a given condition | **=AVERAGEIF(G1:G10, ">50")** |
| Statistical | COUNTIFS | Counts the number of cells specified by multiple conditions | **=COUNTIFS(H1:H10, ">50", I1:I10, "<100")** |
| Statistical | SUMIFS | Adds the cells specified by multiple conditions | **=SUMIFS(J1:J10, K1:K10, "Category A", L1:L10, ">50")** |
| Lookup | VLOOKUP | Looks up a value in a vertical lookup table | **=VLOOKUP(M1, A1:B10, 2, FALSE)** |
| Lookup | HLOOKUP | Looks up a value in a horizontal lookup table | **=HLOOKUP(N1, A1:F5, 4, FALSE)** |
| Lookup | INDEX-MATCH | Combines the INDEX and MATCH functions to perform a lookup | **=INDEX(A1:B10, MATCH(O1, B1:B10, 0), 2)** |
| Text | TRIM | Removes leading and trailing spaces from a text string | **=TRIM(P1)** |
| Text | PROPER | Capitalizes the first letter of each word in a text string | **=PROPER(Q1)** |
| Text | UPPER | Converts text to uppercase | **=UPPER(R1)** |
| Text | LOWER | Converts text to lowercase | **=LOWER(S1)** |
| Text | SUBSTITUTE | Replaces specific text in a text string | **=SUBSTITUTE(T1, "old", "new")** |
| Logical | IFERROR | Returns a value if a formula generates an error | **=IFERROR(U1/V1, "Error")** |
| Logical | IFNA | Returns a value if a formula returns #N/A | **=IFNA(V1/W1, "Not Available")** |
| Date | DATEDIF | Calculates the difference between two dates | **=DATEDIF(X1, Y1, "d")** |
| Date | EOMONTH | Returns the last day of the month | **=EOMONTH(Z1, 0)** |
| Date | NETWORKDAYS | Calculates the number of working days between two dates | **=NETWORKDAYS(AA1, AB1)** |