* **Excel Lecture- 5 (Refer Excel Practice sheet- 3 for the same)**
* **INDEX AND MATCH:**

In Excel, the `INDEX` and `MATCH` functions are often used together to perform more flexible and powerful lookups than what can be achieved with the `VLOOKUP` or `HLOOKUP` functions. Here's an explanation of each function:

**1. INDEX Function:**

- The `INDEX` function is used to return a value from a specific cell within a given range.

- It takes two or more arguments: the range (or array) from which you want to return a value, and optionally, the row and column numbers to specify which value to retrieve.

- It has two basic syntax forms:

- `INDEX(array, row\_num, [column\_num])`: Returns the value in a specific row and column of an array or range.

- `INDEX(array, [row\_num], [column\_num])`: Returns an array of values from the specified rows and columns of the array.

**2. MATCH Function:**

- The `MATCH` function is used to find the relative position (row or column number) of a specified value within a range.

- It takes three arguments: the value you want to find, the range where you want to search for that value, and an optional match type.

- The match type can be 0 (exact match), 1 (greater than or equal to the lookup value), or -1 (less than or equal to the lookup value).

- The `MATCH` function is often used to find a specific row or column number that can be passed to the `INDEX` function.

This combination of functions allows for more flexible and accurate lookups, especially when working with large and complex datasets.

* **SUM PRODUCT:**

In Excel, the SUMPRODUCT function is a versatile and powerful function used for performing various calculations on arrays of data. It can be used to multiply corresponding elements in two or more arrays and then sum the products of those multiplications.

SUMPRODUCT (array1, [array2], [array3], ...)

array1, array2, array3, ...: These are the arrays or ranges that you want to multiply and sum. You can include up to 30 arrays.

Here's how the SUMPRODUCT function works:

* It multiplies the corresponding elements in the specified arrays.
* It sums the products of those multiplications.

SUMPRODUCT is a flexible and valuable tool for performing complex calculations in Excel, especially when you need to work with arrays of data or perform calculations involving multiple criteria.

|  |  |  |  |
| --- | --- | --- | --- |
| Q1 -Total Sales(Sell Price \* Quantity) |  |  |  |
| [=SUMPRODUCT(F3:F30,G3:G30)] | 74359.55 |  |  |
|  |  |  |  |
|  |  |  |  |
| Q2- Total Sales For Pune Location |  |  |  |
| [=SUMPRODUCT(F3:F30,G3:G30,(--(D3:D30="Pune")))] | 13095.3 |  | Pune \* Num \* Num= 0 |
|  |  |  | Use -- to Convert |
|  |  |  | True = 1 False = 0 |
| Q3- Total Sales For Pune + Delhi Location |  |  |  |
| [=SUMPRODUCT(F3:F30,G3:G30,--((D3:D30="Pune")+(D3:D30="Delhi")))] | 30383.65 |  |  |
|  |  |  | Or =+ |
|  |  |  | And = \* |
| Q4- Total sale only where category is "c" and Location is "Pune" |  |  |  |
| [=SUMPRODUCT(F3:F30,G3:G30,--((C3:C30="C")\*(D3:D30="Pune")))] | 10679.25 |  |  |
|  |  |  |  |