

Practical No. 01

Aim: Introduction to Excel

- Perform conditional formatting on a dataset using various criteria.
- Create a pivot table to analyze and summarize data.
- Use VLOOKUP function to retrieve information from a different worksheet or table.
- Perform what-if analysis using Goal Seek to determine input values for desired output.

○ Perform conditional formatting on a dataset using various criteria.

We perform conditional formatting on the "Sell Price" column to highlight cells with a price greater than \$ 2000 using following steps:

Steps:

1. Select the "Sell Price" column (Column E).

| | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W |
|----|-----------|-----------|--------|----------|------------|-----------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Make | Model | Color | Mileage | Sell Price | Buy Price | | | | | | | | | | | | | | | | | |
| 1 | Honda | Accord | Red | 63,512 | 4000 | 3000 | | | | | | | | | | | | | | | | | |
| 2 | Honda | Accord | Blue | 95,135 | 2500 | 2000 | | | | | | | | | | | | | | | | | |
| 3 | Honda | Accord | Silver | 1,01,354 | 2000 | 1500 | | | | | | | | | | | | | | | | | |
| 4 | Toyota | Camry | Black | 75,006 | 2198 | 1900 | | | | | | | | | | | | | | | | | |
| 5 | Nissan | Altima | Green | 69,847 | 3826 | 3000 | | | | | | | | | | | | | | | | | |
| 6 | Nissan | Altima | Green | 55,233 | 2978 | 2500 | | | | | | | | | | | | | | | | | |
| 7 | Toyota | Corolla | Black | 87,278 | 2224 | 2100 | | | | | | | | | | | | | | | | | |
| 8 | Toyota | Corolla | Blue | 1,30,684 | 2798 | 2200 | | | | | | | | | | | | | | | | | |
| 9 | Toyota | Corolla | Silver | 59,169 | 2160 | 2000 | | | | | | | | | | | | | | | | | |
| 10 | Honda | Civic | White | 1,38,789 | 2723 | 1900 | | | | | | | | | | | | | | | | | |
| 11 | Ford | F-150 | Black | 89,073 | 3950 | 3000 | | | | | | | | | | | | | | | | | |
| 12 | Chevrolet | Silverado | Green | 1,09,231 | 4959 | 4500 | | | | | | | | | | | | | | | | | |
| 13 | Chevrolet | Impala | Silver | 87,675 | 3791 | 3500 | | | | | | | | | | | | | | | | | |
| 14 | Chevrolet | Impala | White | 1,40,811 | 2340 | 2000 | | | | | | | | | | | | | | | | | |
| 15 | Chevrolet | Malibu | White | 1,39,300 | 3361 | 3000 | | | | | | | | | | | | | | | | | |
| 16 | Ford | Escape | Black | 63,259 | 3196 | 3050 | | | | | | | | | | | | | | | | | |
| 17 | Ford | Escape | Red | 40,826 | 4397 | 3900 | | | | | | | | | | | | | | | | | |
| 18 | Ford | Mustang | Silver | 41,560 | 3706 | 3100 | | | | | | | | | | | | | | | | | |
| 19 | Honda | CRV | Blue | 49,326 | 4745 | 4100 | | | | | | | | | | | | | | | | | |
| 20 | Nissan | Maxima | Red | 1,01,856 | 2914 | 2500 | | | | | | | | | | | | | | | | | |
| 21 | Ford | Fusion | Black | 42,542 | 2659 | 2100 | | | | | | | | | | | | | | | | | |
| 22 | Dodge | Charger | Silver | 34,853 | 4349 | 3500 | | | | | | | | | | | | | | | | | |
| 23 | Dodge | Charger | Silver | 58,173 | 4252 | 4000 | | | | | | | | | | | | | | | | | |
| 24 | Dodge | Charger | Black | 1,36,775 | 2090 | 1800 | | | | | | | | | | | | | | | | | |
| 25 | | | | | | | | | | | | | | | | | | | | | | | |
| 26 | | | | | | | | | | | | | | | | | | | | | | | |
| 27 | | | | | | | | | | | | | | | | | | | | | | | |
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| 29 | | | | | | | | | | | | | | | | | | | | | | | |

2. Go to the "Home" tab on the ribbon.
3. Click on "Conditional Formatting" in the toolbar.

Car Inventory - Excel

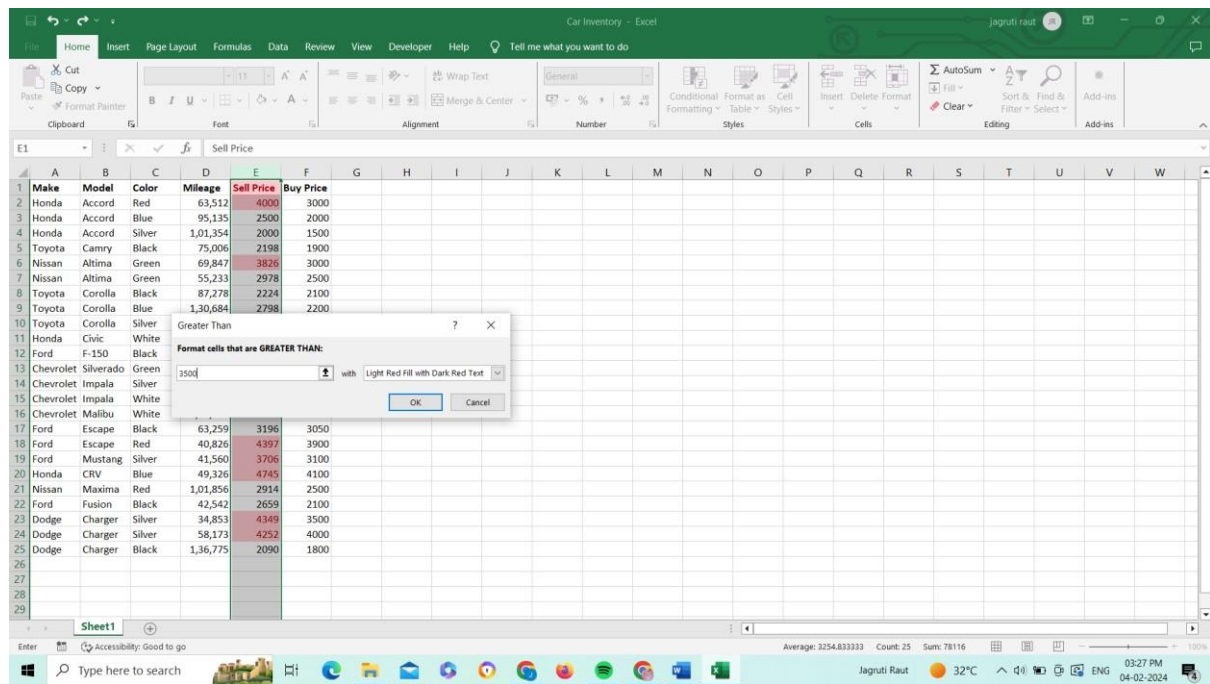
| Make | Model | Color | Mileage | Sell Price | Buy Price |
|-----------|-----------|--------|----------|------------|-----------|
| Honda | Accord | Red | 63,512 | 4000 | 3000 |
| Honda | Accord | Blue | 95,135 | 2500 | 2000 |
| Honda | Accord | Silver | 1,01,354 | 2000 | 1500 |
| Toyota | Camry | Black | 75,006 | 2198 | 1900 |
| Nissan | Altima | Green | 69,847 | 3826 | 3000 |
| Nissan | Altima | Green | 55,233 | 2978 | 2500 |
| Toyota | Corolla | Black | 87,278 | 2224 | 2100 |
| Toyota | Corolla | Blue | 1,30,684 | 2798 | 2200 |
| Toyota | Corolla | Silver | 59,169 | 2160 | 2000 |
| Honda | Civic | White | 1,38,789 | 2723 | 1900 |
| Ford | F-150 | Black | 89,073 | 3950 | 3000 |
| Chevrolet | Silverado | Green | 1,09,231 | 4959 | 4500 |
| Chevrolet | Impala | Silver | 87,675 | 3791 | 3500 |
| Chevrolet | Impala | White | 1,40,811 | 2340 | 2000 |
| Chevrolet | Malibu | White | 1,39,300 | 3361 | 3000 |
| Ford | Escape | Black | 63,259 | 3196 | 3050 |
| Ford | Escape | Red | 40,826 | 4397 | 3900 |
| Ford | Mustang | Silver | 41,560 | 3706 | 3100 |
| Honda | CRV | Blue | 49,326 | 4745 | 4100 |
| Nissan | Maxima | Red | 1,01,856 | 2914 | 2500 |
| Ford | Fusion | Black | 42,542 | 2659 | 2100 |
| Dodge | Charger | Silver | 34,853 | 4349 | 3500 |
| Dodge | Charger | Silver | 58,173 | 4252 | 4000 |
| Dodge | Charger | Black | 1,36,775 | 2090 | 1800 |

4. Choose "Highlight Cells Rules" and then "Greater Than."

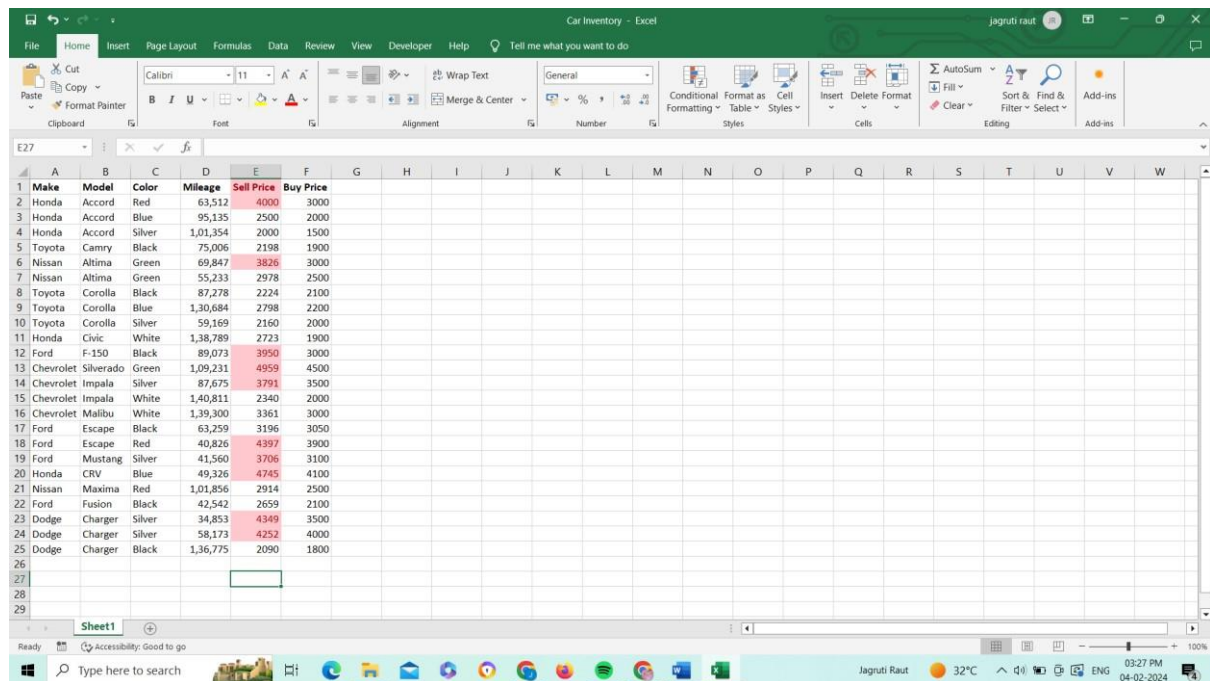
Car Inventory - Excel

| Make | Model | Color | Mileage | Sell Price | Buy Price |
|-----------|-----------|--------|----------|------------|-----------|
| Honda | Accord | Red | 63,512 | 4000 | 3000 |
| Honda | Accord | Blue | 95,135 | 2500 | 2000 |
| Honda | Accord | Silver | 1,01,354 | 2000 | 1500 |
| Toyota | Camry | Black | 75,006 | 2198 | 1900 |
| Nissan | Altima | Green | 69,847 | 3826 | 3000 |
| Nissan | Altima | Green | 55,233 | 2978 | 2500 |
| Toyota | Corolla | Black | 87,278 | 2224 | 2100 |
| Toyota | Corolla | Blue | 1,30,684 | 2798 | 2200 |
| Toyota | Corolla | Silver | 59,169 | 2160 | 2000 |
| Honda | Civic | White | 1,38,789 | 2723 | 1900 |
| Ford | F-150 | Black | 89,073 | 3950 | 3000 |
| Chevrolet | Silverado | Green | 1,09,231 | 4959 | 4500 |
| Chevrolet | Impala | Silver | 87,675 | 3791 | 3500 |
| Chevrolet | Impala | White | 1,40,811 | 2340 | 2000 |
| Chevrolet | Malibu | White | 1,39,300 | 3361 | 3000 |
| Ford | Escape | Black | 63,259 | 3196 | 3050 |
| Ford | Escape | Red | 40,826 | 4397 | 3900 |
| Ford | Mustang | Silver | 41,560 | 3706 | 3100 |
| Honda | CRV | Blue | 49,326 | 4745 | 4100 |
| Nissan | Maxima | Red | 1,01,856 | 2914 | 2500 |
| Ford | Fusion | Black | 42,542 | 2659 | 2100 |
| Dodge | Charger | Silver | 34,853 | 4349 | 3500 |
| Dodge | Charger | Silver | 58,173 | 4252 | 4000 |
| Dodge | Charger | Black | 1,36,775 | 2090 | 1800 |

5. Enter the threshold value as 3500.



6. Customize the formatting options (e.g., choose a fill color).
7. Click "OK" to apply the rule.



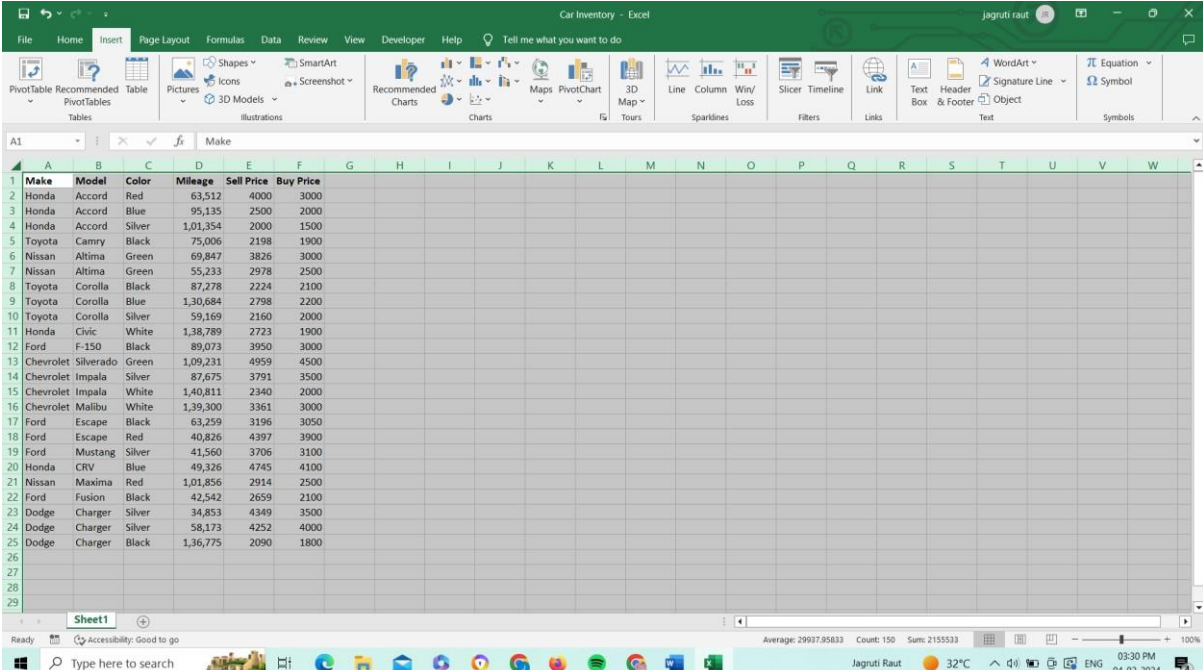
○ Create a pivot table to analyze and summarize data.

Create Pivot table for following analysis :

- How many cars do you have by make and model and by color?
- Find out the profit margin on different vehicles.
- Find out the average cost of vehicles.
- Find out the percentage of car of each color.

Steps:

- Select the entire dataset including headers.



| | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W |
|----|-----------|-----------|--------|----------|------------|-----------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Make | Model | Color | Mileage | Sell Price | Buy Price | | | | | | | | | | | | | | | | | |
| 1 | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | Honda | Accord | Red | 63,512 | 4000 | 3000 | | | | | | | | | | | | | | | | | |
| 3 | Honda | Accord | Blue | 95,135 | 2500 | 2000 | | | | | | | | | | | | | | | | | |
| 4 | Honda | Accord | Silver | 1,01,354 | 2000 | 1500 | | | | | | | | | | | | | | | | | |
| 5 | Toyota | Camry | Black | 75,006 | 2198 | 1900 | | | | | | | | | | | | | | | | | |
| 6 | Nissan | Altima | Green | 69,847 | 3826 | 3000 | | | | | | | | | | | | | | | | | |
| 7 | Nissan | Altima | Green | 55,233 | 2978 | 2500 | | | | | | | | | | | | | | | | | |
| 8 | Toyota | Corolla | Black | 87,278 | 2224 | 2100 | | | | | | | | | | | | | | | | | |
| 9 | Toyota | Corolla | Blue | 1,30,684 | 2798 | 2200 | | | | | | | | | | | | | | | | | |
| 10 | Toyota | Corolla | Silver | 59,169 | 2160 | 2000 | | | | | | | | | | | | | | | | | |
| 11 | Honda | Civic | White | 1,38,789 | 2723 | 1900 | | | | | | | | | | | | | | | | | |
| 12 | Ford | F-150 | Black | 89,073 | 3950 | 3000 | | | | | | | | | | | | | | | | | |
| 13 | Chevrolet | Silverado | Green | 1,09,231 | 4959 | 4500 | | | | | | | | | | | | | | | | | |
| 14 | Chevrolet | Impala | Silver | 87,675 | 3791 | 3500 | | | | | | | | | | | | | | | | | |
| 15 | Chevrolet | Impala | White | 1,40,811 | 2340 | 2000 | | | | | | | | | | | | | | | | | |
| 16 | Chevrolet | Malibu | White | 1,39,300 | 3361 | 3000 | | | | | | | | | | | | | | | | | |
| 17 | Ford | Escape | Black | 63,259 | 3196 | 3050 | | | | | | | | | | | | | | | | | |
| 18 | Ford | Escape | Red | 40,826 | 4397 | 3900 | | | | | | | | | | | | | | | | | |
| 19 | Ford | Mustang | Silver | 41,560 | 3706 | 3100 | | | | | | | | | | | | | | | | | |
| 20 | Honda | CRV | Blue | 49,326 | 4745 | 4100 | | | | | | | | | | | | | | | | | |
| 21 | Nissan | Maxima | Red | 1,01,856 | 2914 | 2500 | | | | | | | | | | | | | | | | | |
| 22 | Ford | Fusion | Black | 42,542 | 2659 | 2100 | | | | | | | | | | | | | | | | | |
| 23 | Dodge | Charger | Silver | 34,853 | 4349 | 3500 | | | | | | | | | | | | | | | | | |
| 24 | Dodge | Charger | Silver | 58,173 | 4252 | 4000 | | | | | | | | | | | | | | | | | |
| 25 | Dodge | Charger | Black | 1,36,775 | 2090 | 1800 | | | | | | | | | | | | | | | | | |
| 26 | | | | | | | | | | | | | | | | | | | | | | | |
| 27 | | | | | | | | | | | | | | | | | | | | | | | |
| 28 | | | | | | | | | | | | | | | | | | | | | | | |
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- Go to the "Insert" tab on the ribbon.
- Click on "PivotTable."
- Choose where you want to place the PivotTable (e.g., new worksheet).

The screenshot displays two states of Microsoft Excel. The top state shows the 'PivotTable from table or range' dialog box open over a data table. The bottom state shows the 'PivotTable Fields' task pane open on the right side of the worksheet.

Data Table (Top Screenshot):

| Make | Model | Color | Mileage | Sell Price | Buy Price |
|-----------|-----------|--------|----------|------------|-----------|
| Honda | Accord | Red | 63,512 | 4000 | 3000 |
| Honda | Accord | Blue | 95,135 | 2500 | 2000 |
| Honda | Accord | Silver | 1,01,354 | 2000 | 1500 |
| Toyota | Camry | Black | 75,006 | 2198 | 1900 |
| Nissan | Altima | Green | 69,847 | 3876 | 3000 |
| Toyota | Corolla | Black | | | |
| Toyota | Corolla | Blue | | | |
| Toyota | Corolla | Silver | | | |
| Honda | Civic | White | | | |
| Ford | F-150 | Black | | | |
| Chevrolet | Silverado | Green | | | |
| Chevrolet | Impala | Silver | | | |
| Chevrolet | Impala | White | | | |
| Chevrolet | Malibu | White | | | |
| Ford | Escape | Black | | | |
| Ford | Escape | Red | | | |
| Ford | Mustang | Silver | | | |
| Honda | CRV | Blue | 49,326 | 4745 | 4100 |
| Nissan | Maxima | Red | 1,01,856 | 2914 | 2500 |
| Ford | Fusion | Black | 42,542 | 2659 | 2100 |
| Dodge | Charger | Silver | 34,853 | 4349 | 3500 |
| Dodge | Charger | Silver | 58,173 | 4252 | 4000 |
| Dodge | Charger | Black | 1,36,775 | 2090 | 1800 |

PivotTable Fields Task Pane (Bottom Screenshot):

Choose fields to add to report:

- ☐ Make
- ☐ Model
- ☐ Color
- ☐ Mileage
- ☐ Sell Price
- ☐ Buy Price

More Tables...

Drag fields between areas below:

| Filters | Columns |
|---------|---------|
| | |

| Rows | Values |
|------|--------|
| | |

☐ Defer Layout Update

5. Let us find out, how many cars do we have by make and model and by color?

Drag "Make" column to the Rows area.

Drag "Model" column to the Rows area under "Make" column.

Drag the "Color" column to the Column Section.

Drag the "Make" column to Values Section.

This will give us Number of cars by Make, Model and Color.

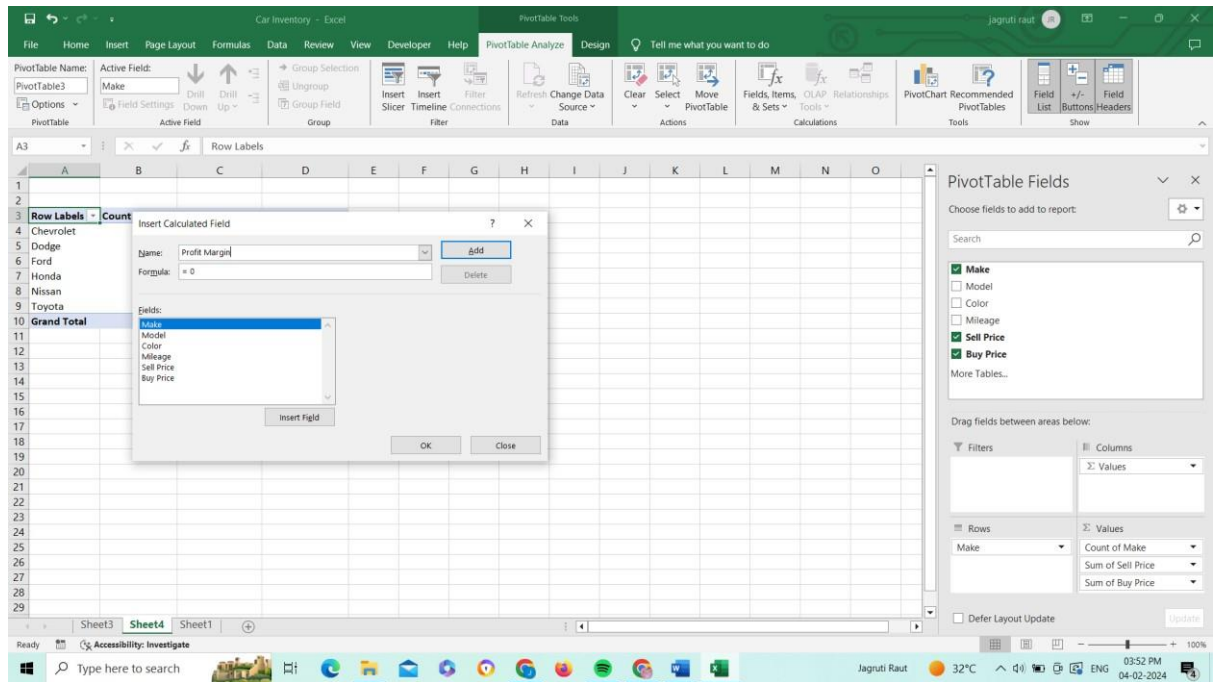
6. Let us find out the profit margin on different vehicles. Drag "Make" column to the Rows area.

Drag the "Make" column to Values Section.

Drag the "Sell Price" column to Values Section.

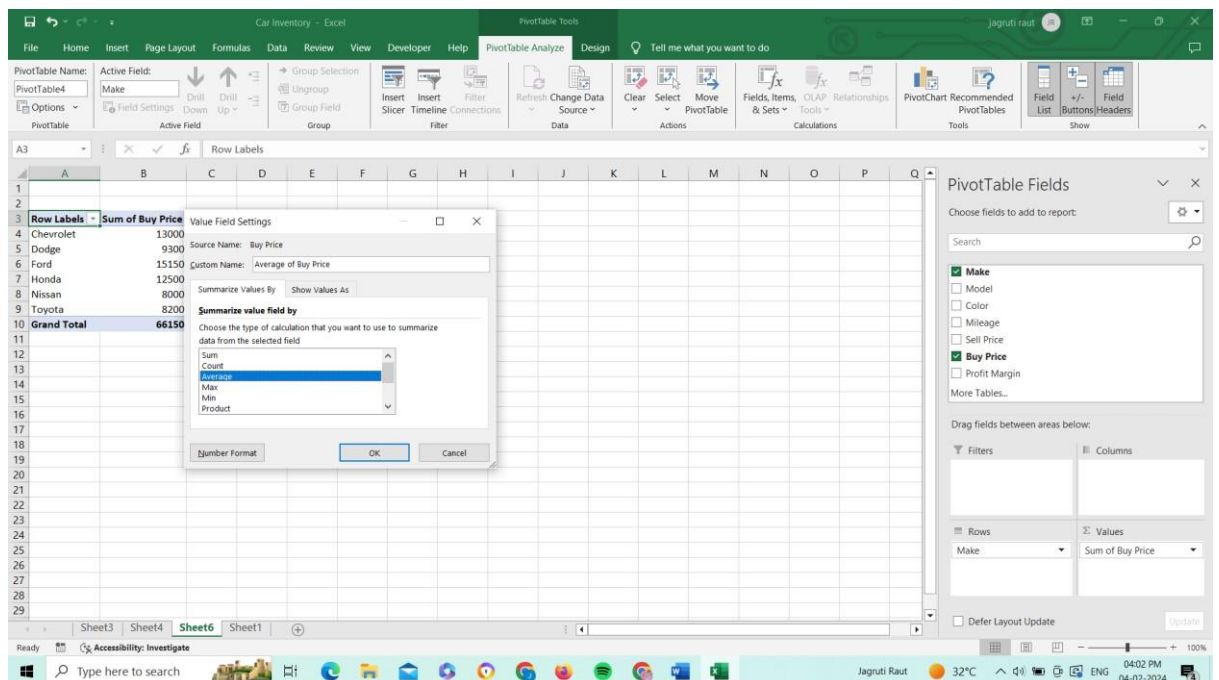
Drag the "Buy Price" column to Values Section.

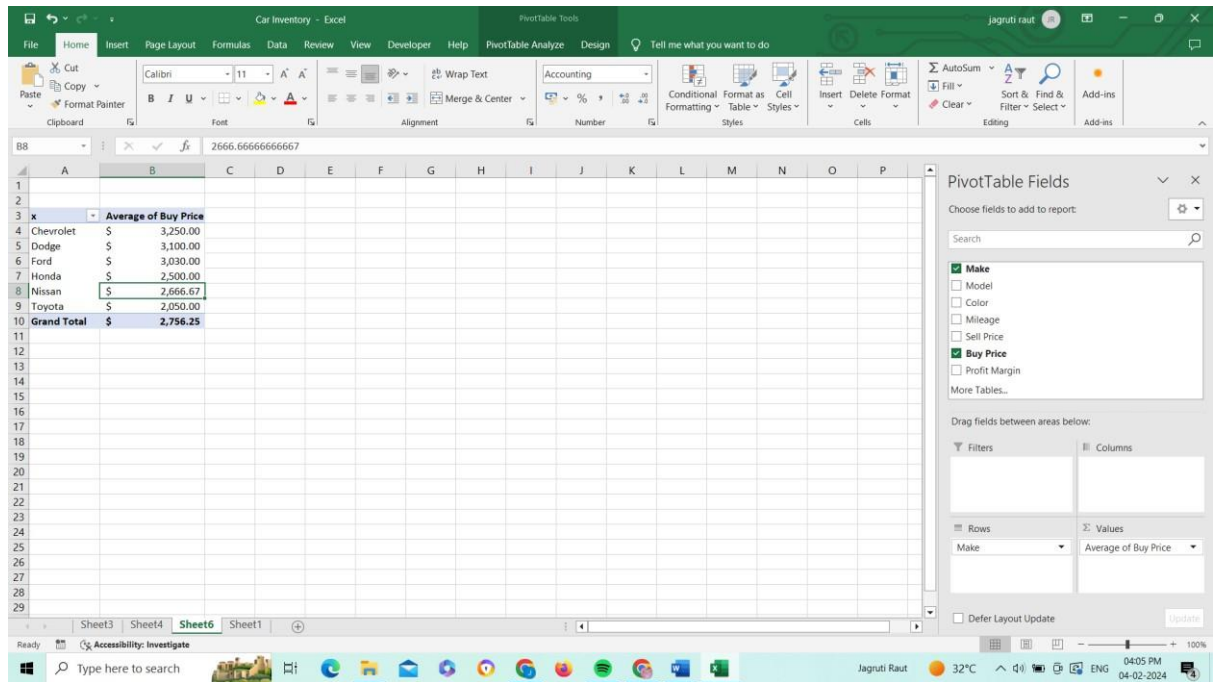
Add one calculated field "Profit Margin".



Insert “Sell Price” – “Buy Price” in Formula section. You will get profit margin. (You can sort the data.)

- Let us find out the average cost of vehicles. Drag "Make" column to the Rows area. Drag the “Buy Price” column to Values Section.





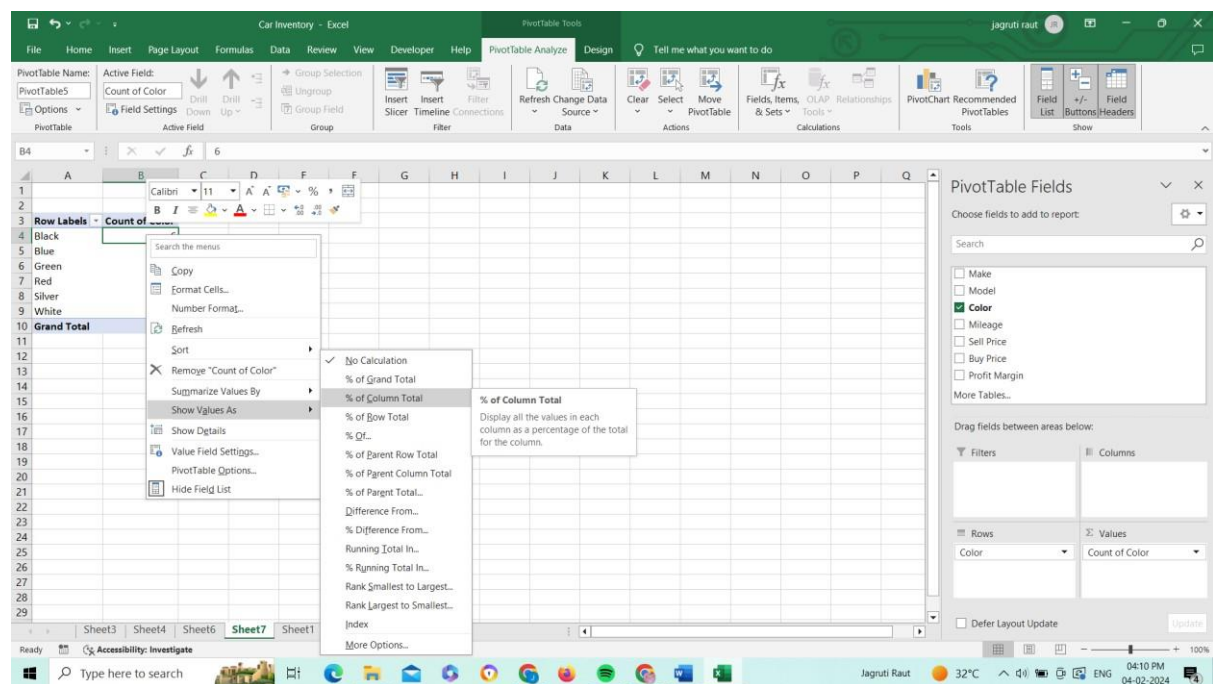
8. Let us find out the percentage of car of each color.

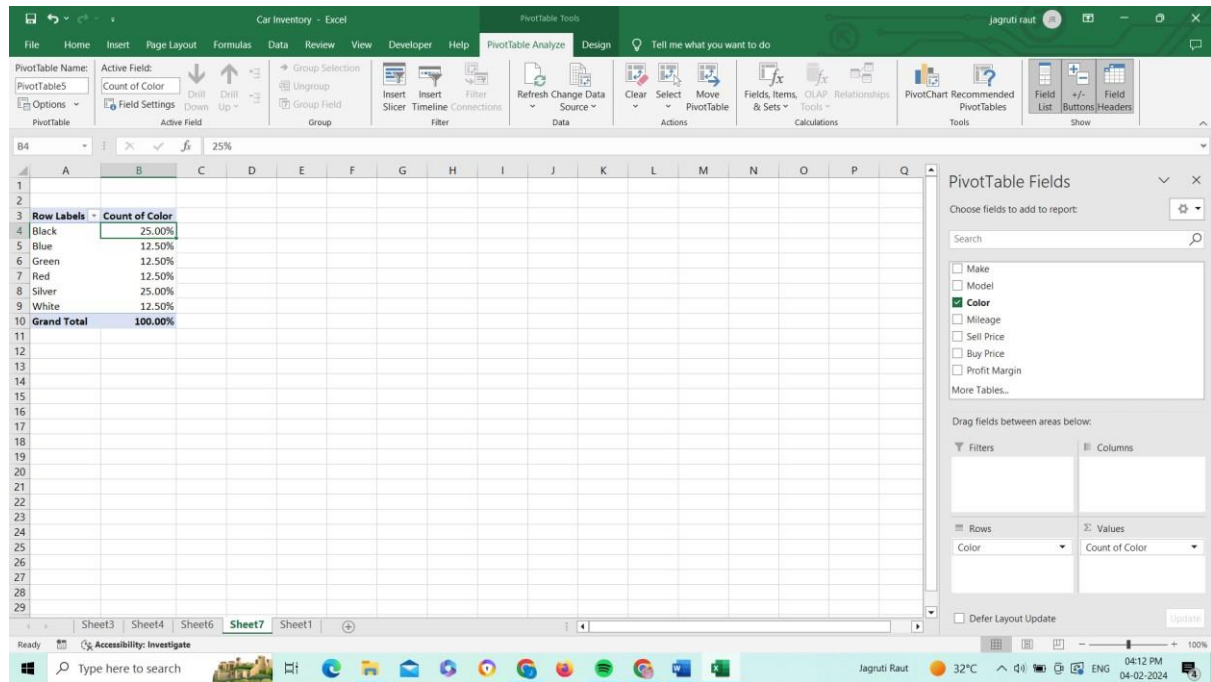
Drag "Color" column to the Rows area.

Drag the "Color" column to Values Section.

Right click on Count of color column Value -> Show Value as

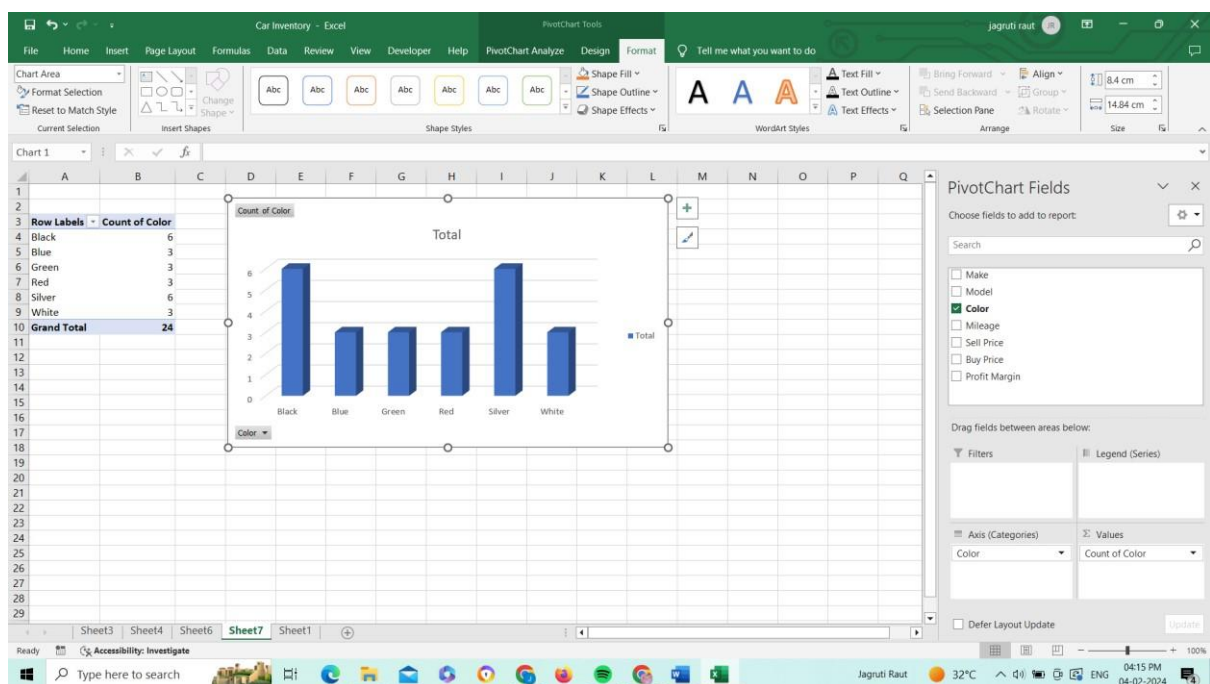
And select "% of column total"



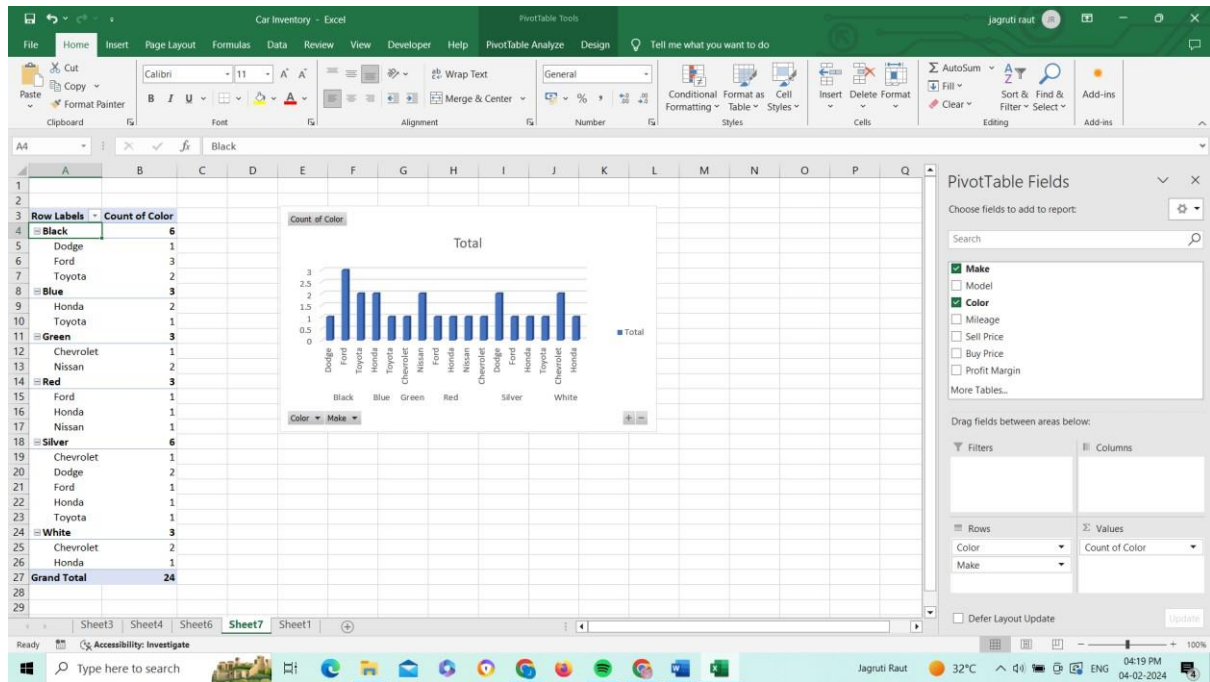


Now Visualize the data using PivotChart.

Click on PivotChart Analyze Tab and click on PivotChart



Add “Make” column in Row area and immediately PivotChart will update.

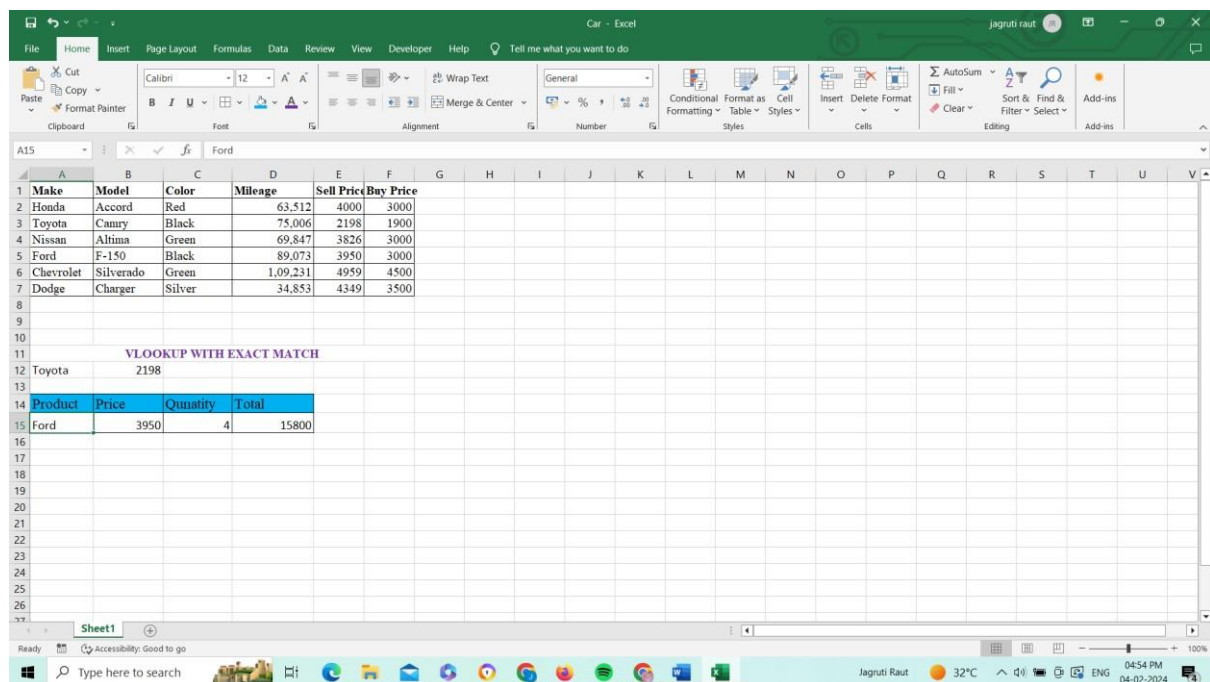
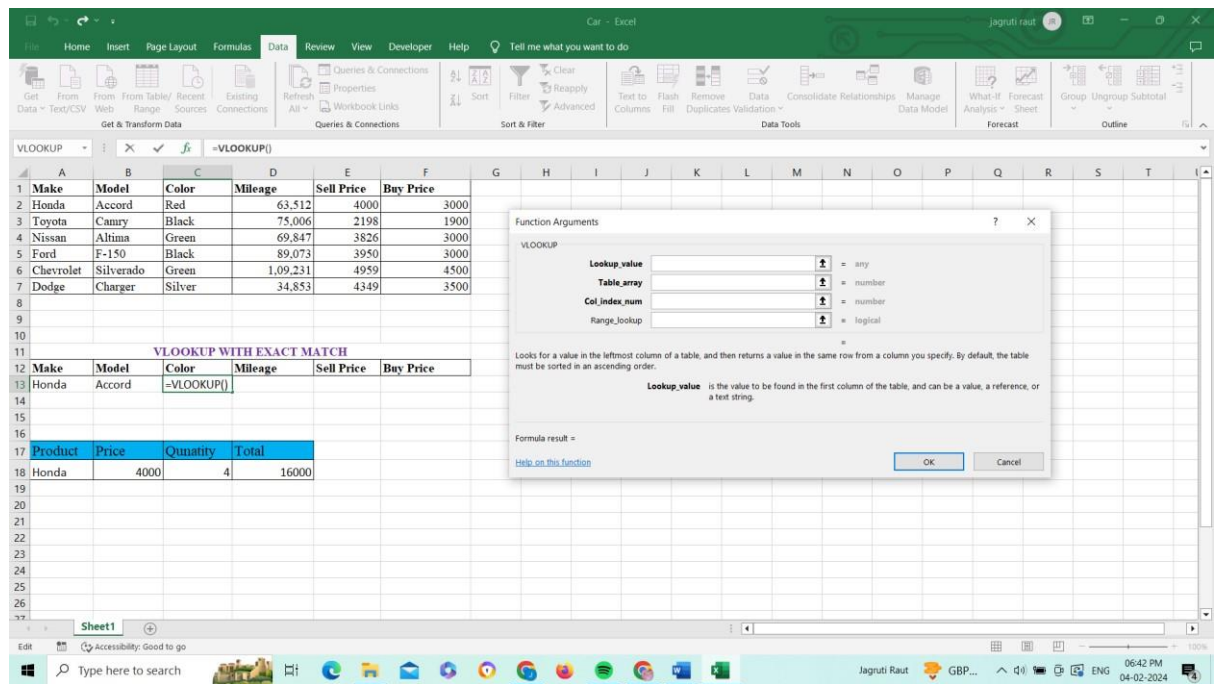


● Use VLOOKUP function to retrieve information from a different worksheet or table.

Steps:

1. Consider Car dataset. Let us Find out sell price of perticular car.
2. Enter Car Company in one cell and then add VLOOKUP Formula.
=VLOOKUP(A12,A1:F7,5,0)

- i) Lookup_value : index value of perticular item.
- ii) Table_array: Select complete dataset
- iii) Col_index_num : The value which we want to find out.
- iv) Range lookup : True or False



(When the value changes automatically calculation changes)

Perform Data Validation with VLOOKUP

Click on “Data” tab.

Click on “Data Validation” option. Click on “List” option. Give “Source” to the list. And click on “OK” option.

The screenshot shows an Excel spreadsheet with a table of car sales data. The table has columns for Make, Model, Color, Mileage, Sell Price, and Buy Price. A VLOOKUP formula is used to find the Sell Price for a Toyota Camry. The formula is entered in cell B12 as `=VLOOKUP("Toyota", A1:F7, 5, 0)`. The result, 2198, is displayed in cell B12. A dropdown menu is visible for the 'Product' column in the table below the main data.

| Make | Model | Color | Mileage | Sell Price | Buy Price |
|-----------|-----------|--------|----------|------------|-----------|
| Honda | Accord | Red | 63,512 | 4000 | 3000 |
| Toyota | Camry | Black | 75,006 | 2198 | 1900 |
| Nissan | Altima | Green | 69,847 | 3826 | 3000 |
| Ford | F-150 | Black | 89,073 | 3950 | 3000 |
| Chevrolet | Silverado | Green | 1,09,231 | 4959 | 4500 |
| Dodge | Charger | Silver | 34,853 | 4349 | 3500 |

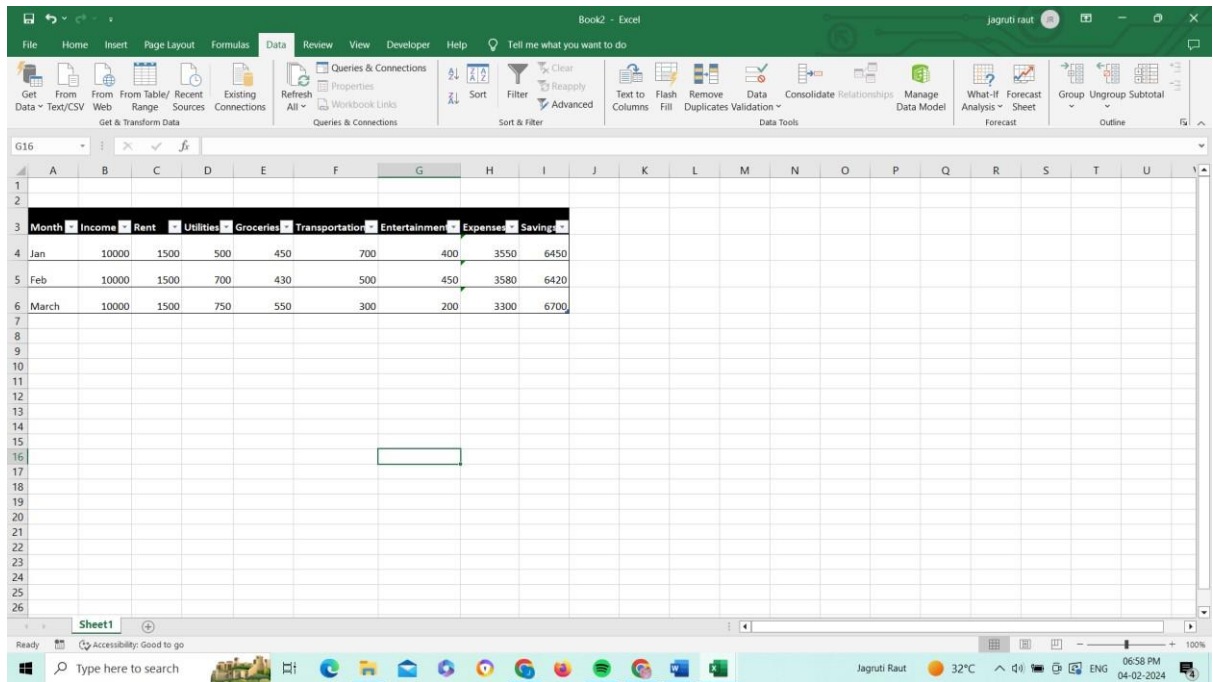
VLOOKUP WITH EXACT MATCH

Toyota 2198

| Product | Price | Quantity | Total |
|---------|-------|----------|-------|
| Honda | 4000 | 4 | 16000 |

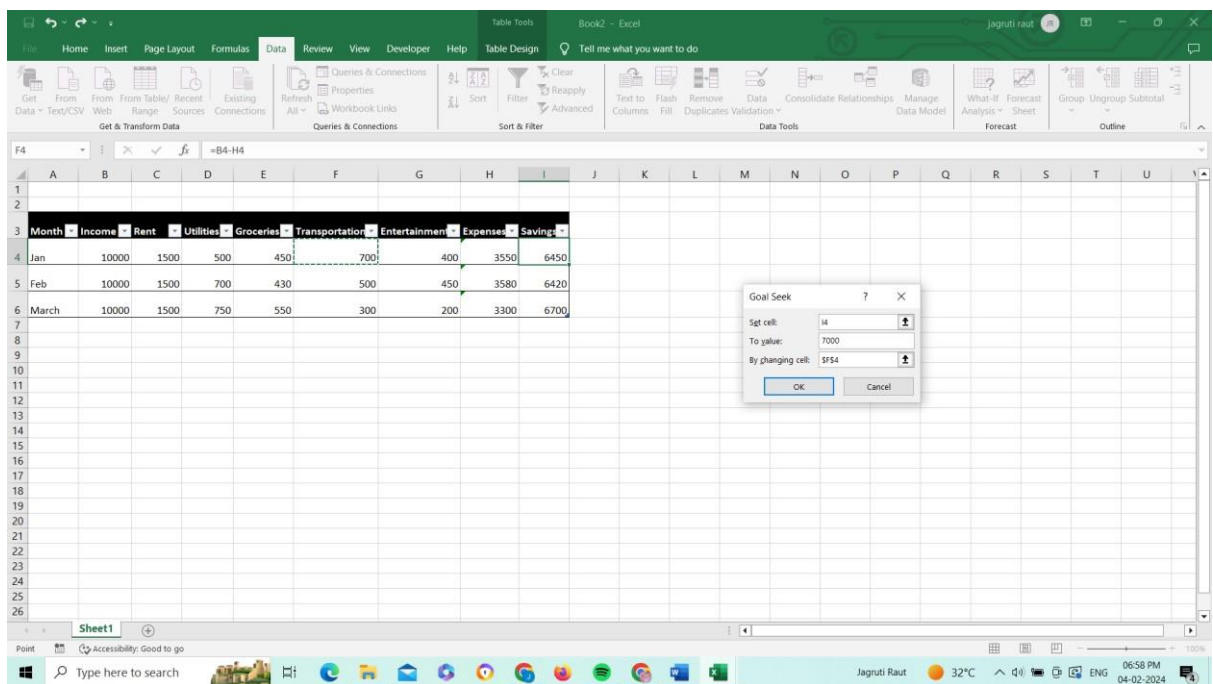
○ Perform what-if analysis using Goal Seek to determine input values for desired output.

- Steps:**
1. Go to the "Data" tab on the ribbon.
 2. Click on "What-If Analysis" and select "Goal Seek."



| Month | Income | Rent | Utilities | Groceries | Transportation | Entertainment | Expenses | Savings |
|-------|--------|------|-----------|-----------|----------------|---------------|----------|---------|
| Jan | 10000 | 1500 | 500 | 450 | 700 | 400 | 3550 | 6450 |
| Feb | 10000 | 1500 | 700 | 430 | 500 | 450 | 3580 | 6420 |
| March | 10000 | 1500 | 750 | 550 | 300 | 200 | 3300 | 6700 |

3. Set "Set cell" to Saving cell, "To value" to 7000, and "By changing cell" to the Transportation cell.



| Month | Income | Rent | Utilities | Groceries | Transportation | Entertainment | Expenses | Savings |
|-------|--------|------|-----------|-----------|----------------|---------------|----------|---------|
| Jan | 10000 | 1500 | 500 | 450 | 700 | 400 | 3550 | 6450 |
| Feb | 10000 | 1500 | 700 | 430 | 500 | 450 | 3580 | 6420 |
| March | 10000 | 1500 | 750 | 550 | 300 | 200 | 3300 | 6700 |

Goal Seek dialog box:

- Set cell: \$I\$4
- To value: 7000
- By changing cell: \$F\$4

4. Click "OK" to let Excel determine the required Savings..