

VBA Programming Project Phase

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Totonto

1. Introduction

- Company sales data analysis help to define the future company focus to be profitable through designing sales strategy across sales regions
- Sales strategy of products, new customer targeting and retaining royal customers determine the future sales increase.
- Sales trend analysis across regional sales and product supply based on competitors' sales will bring the company to stay the leader of the market by sales and customer retaining.
- Seasonal products supply to customers based on their test preference increase sales
- Acknowledging salespersons based on their performance increase employee's performance

2. Project Problems

1. Create a bar chart from data of sales in excel file. 2013 and 2015
2. Create a pivot table and group data based on salesperson.
3. Create a shape object and assign a macro to it that displays in message the current date.
4. Create a procedure that declares variables of type string and integer.
5. Create a VBA procedure that changes the font color of table to bold.
6. Create a VBA procedure that adds a yellow explanation column to right of table.(the header of that column is explanation and fill that column by yellow)

Project Problems Cont'd

7. Create a VBA procedure that uses loop.
8. Create a message box that displays number of executions of one procedure
9. Create a user Form that has two text boxes and a button to calculate sum and show it in a message box.
- 10 create a User Form in Excel VBA to get name , date of birth , gender, telephone number, email , and postal code from the user and store the value provided by the user in the worksheet

3. Problem Solving Procedures

- Use real project sales data
- Analyze the problem by demonstrating each step
- Generate a report (conclusions and recommendations)

1. Create a bar chart from data of sales in excel file 2013 and 2015

Inserting pivot table steps to be followed

- Open sales data spreadsheet and check any blank rows or columns.
- Make sure each column has a heading, as it will be carried over to the Field List.
- Make sure your cells are properly formatted for their data type.
- Select one cell
- Click the Insert tab.
- Select the PivotTable button from the Tables group.
- Select PivotTable from the list

Sales Bar chart from the data 2013 and 2015

Open Sales Data → Click on Insert tab → Visual Basic

| Year | Month | Type | Salesperson | Region | Sales | Units | Order # |
|------|---------|---------------|-------------|---------|-------------|-------|---------|
| 2013 | January | Ice Cream | Bishop | West | \$2,395.50 | 1597 | 001 |
| 2013 | January | Ice Cream | Bishop | West | \$11,761.50 | 7841 | 002 |
| 2013 | January | Frozen Yogurt | Bishop | West | \$8,943.00 | 5962 | 003 |
| 2013 | January | Ice Cream | Bishop | West | \$2,395.50 | 1597 | 004 |
| 2013 | January | Ice Cream | Bishop | West | \$11,761.50 | 7841 | 005 |
| 2013 | January | Frozen Yogurt | Bishop | West | \$8,943.00 | 5962 | 006 |
| 2013 | January | Frozen Yogurt | Lee | Central | \$14,596.50 | 9731 | 007 |
| 2013 | January | Tasty Treats | Lee | Central | \$8,793.00 | 5862 | 008 |
| 2013 | January | Frozen Yogurt | Lee | Central | \$14,596.50 | 9731 | 009 |
| 2013 | January | Tasty Treats | Lee | Central | \$8,793.00 | 5862 | 010 |
| 2013 | January | Ice Cream | Parker | North | \$4,666.00 | 5623 | 011 |
| 2013 | January | Ice Cream | Parker | North | \$7,318.50 | 4879 | 012 |
| 2013 | January | Ice Cream | Parker | North | \$5,500.00 | 5623 | 013 |
| 2013 | January | Ice Cream | Parker | North | \$7,318.50 | 4879 | 014 |
| 2013 | January | Popsicles | Pullen | South | \$3,553.50 | 2369 | 015 |
| 2013 | January | Popsicles | Pullen | South | \$3,553.50 | 2369 | 016 |
| 2013 | January | Frozen Yogurt | Watson | Central | \$14,596.50 | 9731 | 017 |
| 2013 | January | Tasty Treats | Watson | Central | \$8,793.00 | 5862 | 018 |
| 2013 | January | Frozen Yogurt | Watson | Central | \$14,596.50 | 9731 | 019 |
| 2013 | January | Tasty Treats | Watson | Central | \$8,793.00 | 5862 | 020 |

Create Pivot Table

Table/Range

Select New worksheet

PivotTable from table or range

Select a table or range

Table/Range: Sales!\$A\$4:\$H\$448

Choose where you want the PivotTable to be placed

☒ New Worksheet

☐ Existing Worksheet

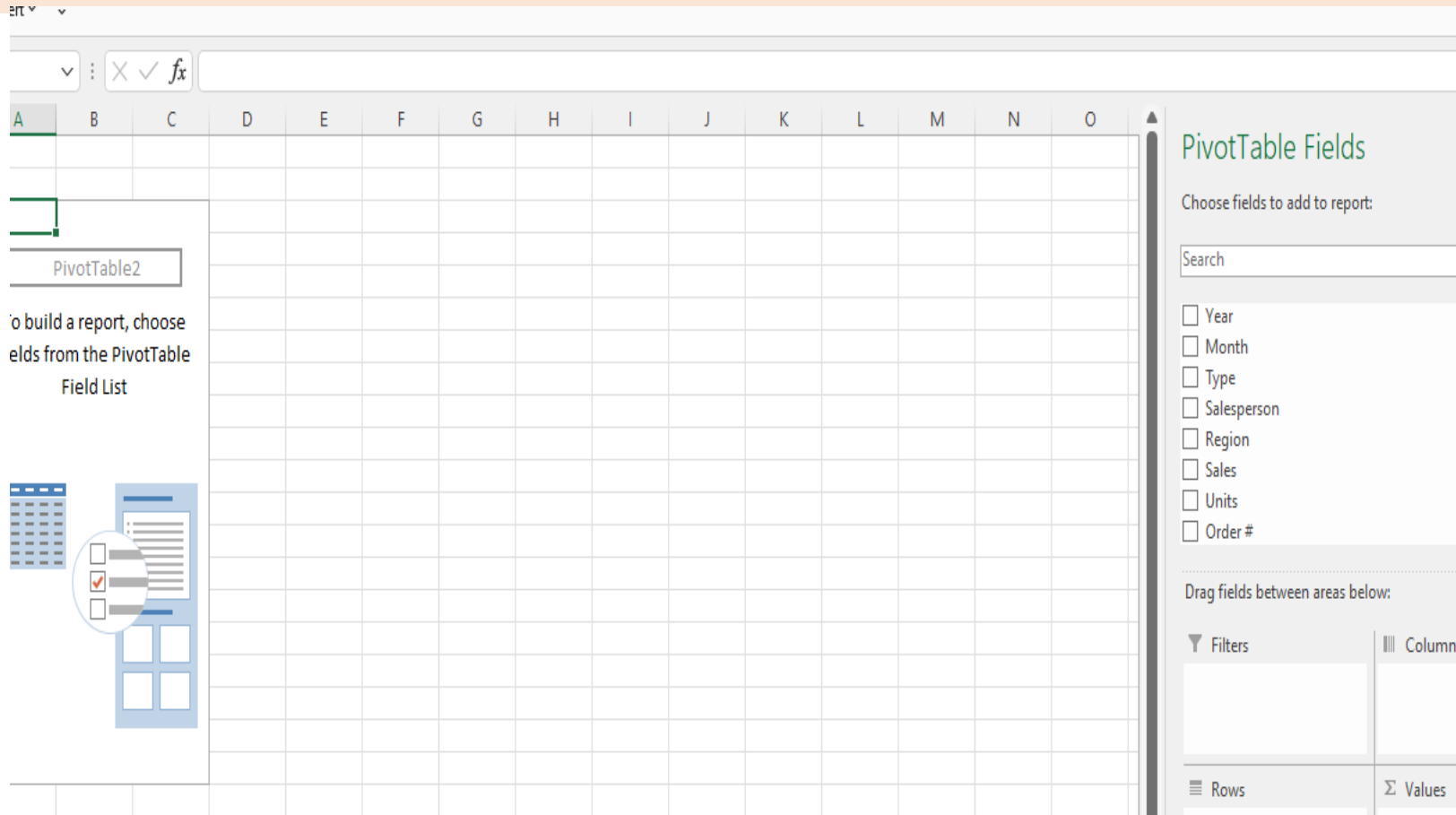
Location:

Choose whether you want to analyze multiple tables

☐ Add this data to the Data Model

OK Cancel

The Pivot Table Field



Filter 2014 sales from the data

The screenshot shows an Excel spreadsheet with a PivotTable. The PivotTable is titled "Sum of Sales" and is located in the range A3:D6. The columns are labeled "2014", "2015", and "Grand Total". The rows are labeled "Salesperson". The data is as follows:

| | 2014 | 2015 | Grand Total |
|-----|-----------|------------|-------------|
| 178 | 204610.4 | 596929.9 | |
| 76 | 252017.4 | 740578.4 | |
| 723 | 257455.8 | 760122.8 | |
| 69 | 172254.2 | 505968.95 | |
| 40 | 220890.4 | 650976.9 | |
| 86 | 1107228.2 | 3254576.95 | |

The "PivotTable Fields" task pane is visible on the right side of the screen. It shows the following fields:

- Filters:** Year, Month, Type, Salesperson, Region, Sales, Units, Order #.
- Columns:** Year.
- Rows:** Salesperson.
- Values:** Sum of Sales.

The "Filter" dropdown for the "Year" field is open, showing the following options:

- (Select All)
- ☒ 2013
- ☒ 2014
- ☒ 2015

The "OK" button is highlighted in the bottom right corner of the filter dropdown.

Pivot Table: Sales by salesperson

The screenshot displays the Microsoft Excel interface with the **PivotTable Analyze** tab selected. The **PivotTable Fields** task pane is open on the right, showing the configuration for a PivotTable. The PivotTable in the worksheet summarizes sales by salesperson for the years 2013 and 2015.

PivotTable Fields Task Pane:

- Choose fields to add to report:** Search bar.
- Available Fields:**
 - ☒ Year
 - ☐ Month
 - ☐ Type
 - ☒ Salesperson
 - ☐ Region
 - ☒ Sales
 - ☐ Units
 - ☐ Order #
- Drag fields between areas below:**
 - Filters:** (Empty)
 - Columns:** Year
 - Rows:** Salesperson
 - Values:** Sum of Sales

PivotTable Data:

| Row Labels | 2013 | 2015 | Grand Total |
|--------------------|-------------------|------------------|-------------------|
| Bishop | 186841.5 | 204610.4 | 391451.9 |
| Lee | 235785 | 252017.4 | 487802.4 |
| Parker | 232944 | 257455.8 | 490399.8 |
| Pullen | 153345.75 | 172254.2 | 325599.95 |
| Watson | 199746.5 | 220890.4 | 420636.9 |
| Grand Total | 1008662.75 | 1107228.2 | 2115890.95 |

Insert Pivot Chart

The screenshot displays the Microsoft Excel interface with the 'Insert' tab selected. The 'PivotChart' button is highlighted in the 'PivotTables and Charts' group. A blue arrow points from this button to a cell in the worksheet. Another blue arrow points from the 'PivotTable' button to a cell in the worksheet. The worksheet contains a PivotTable named 'PivotTable2' and a PivotChart named 'PivotChart2'. The PivotTable is located in the range B3:D10 and the PivotChart is located in the range E3:H10. The PivotTable has a single row of data with the value 100. The PivotChart is a bar chart showing the value 100. The PivotTable and PivotChart are linked. The PivotTable is a summary of sales data by region. The PivotChart is a bar chart showing the sales data by region.

To build a report, choose fields from the PivotTable Field List

PivotTable2

PivotChart2

PivotTable Fields

Choose fields to add to report:

Search

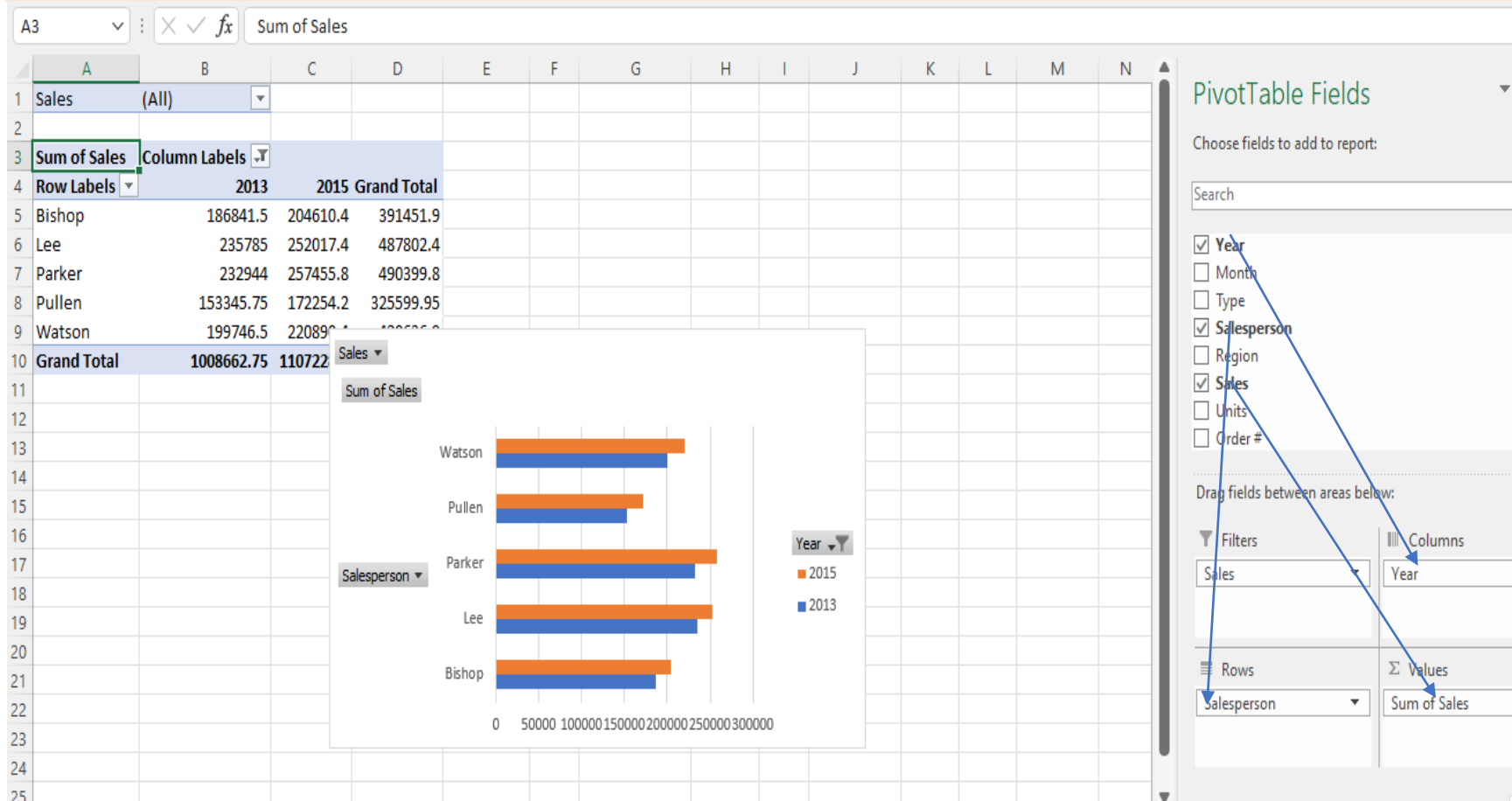
- ☐ Month
- ☐ Type
- ☐ Salesperson
- ☐ Region
- ☐ Sales
- ☐ Units
- ☐ Order #

More Tables...

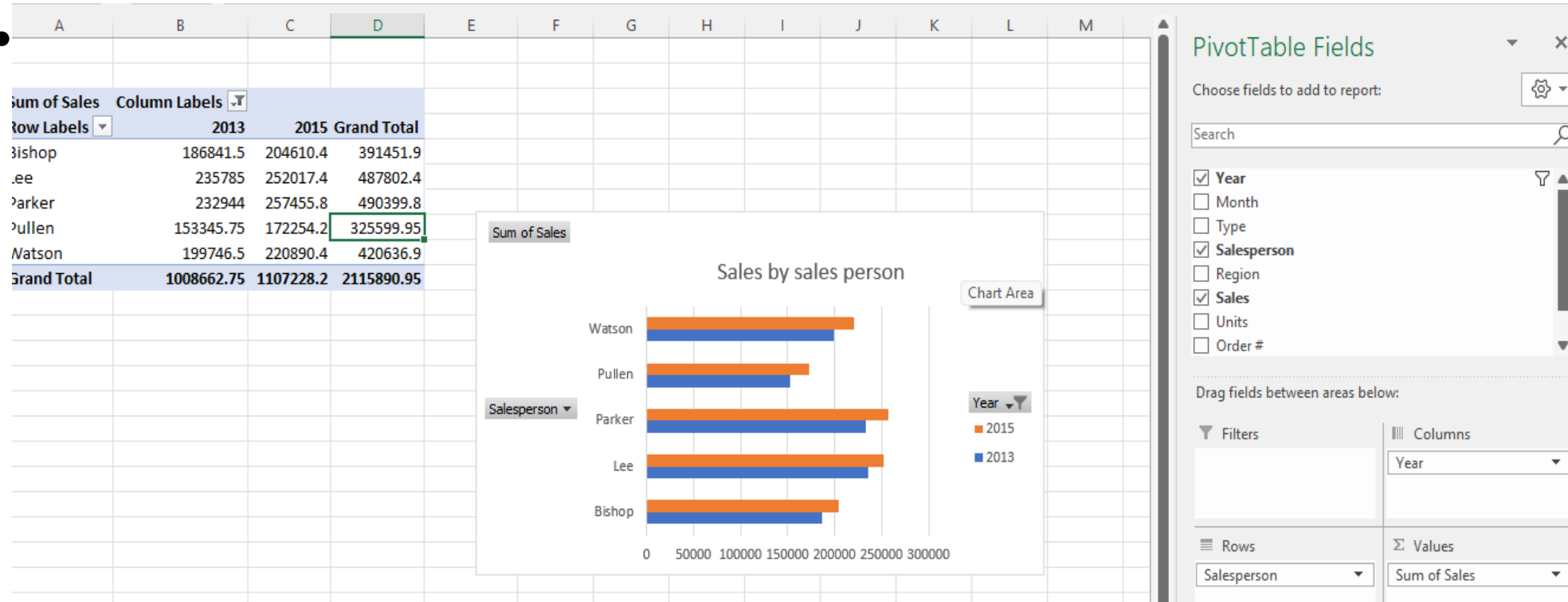
Drag fields between areas below:

| Filters | Columns |
|---------|----------|
| | |
| Rows | Σ Values |

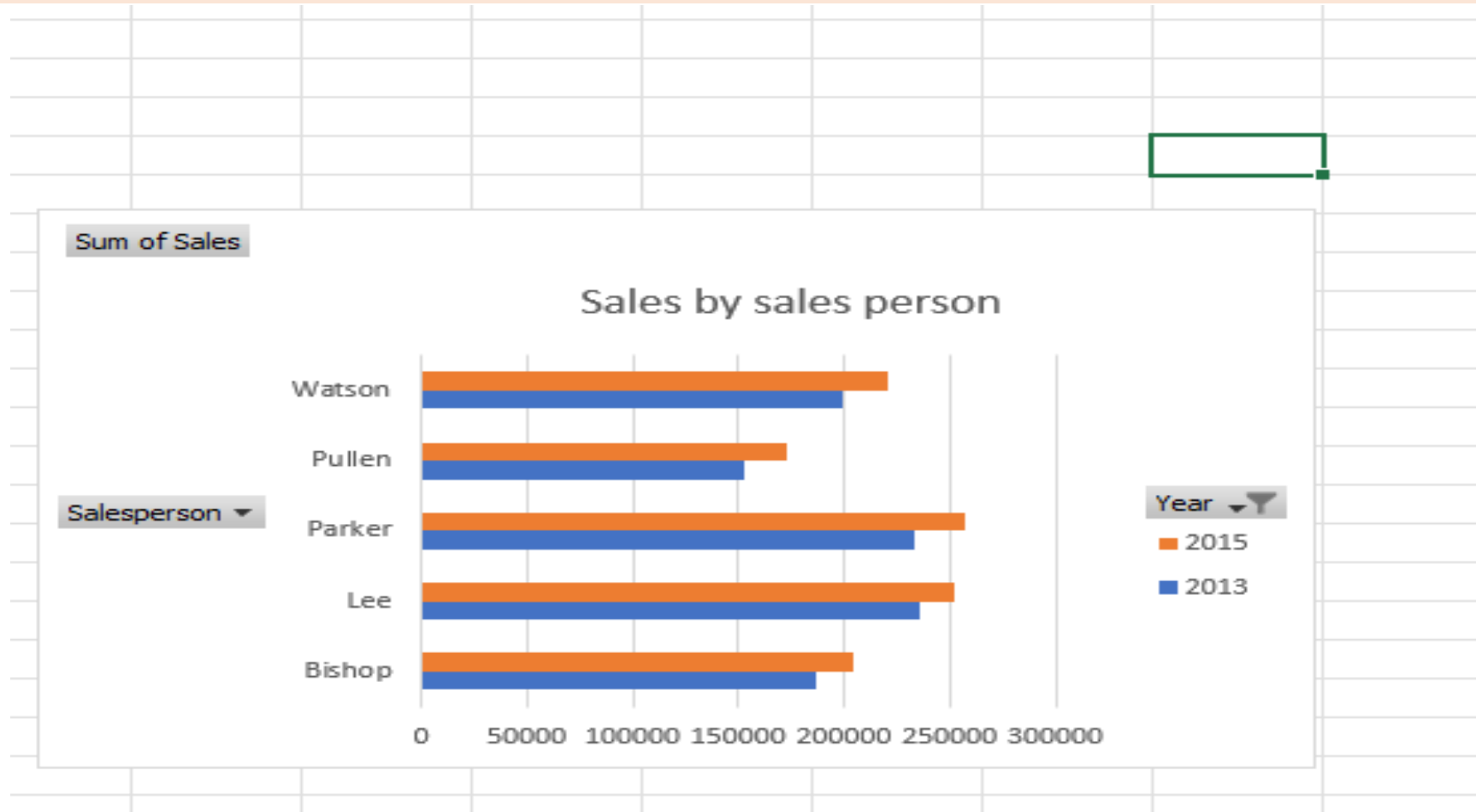
Bar Chart: Sales by salesperson Cont'd



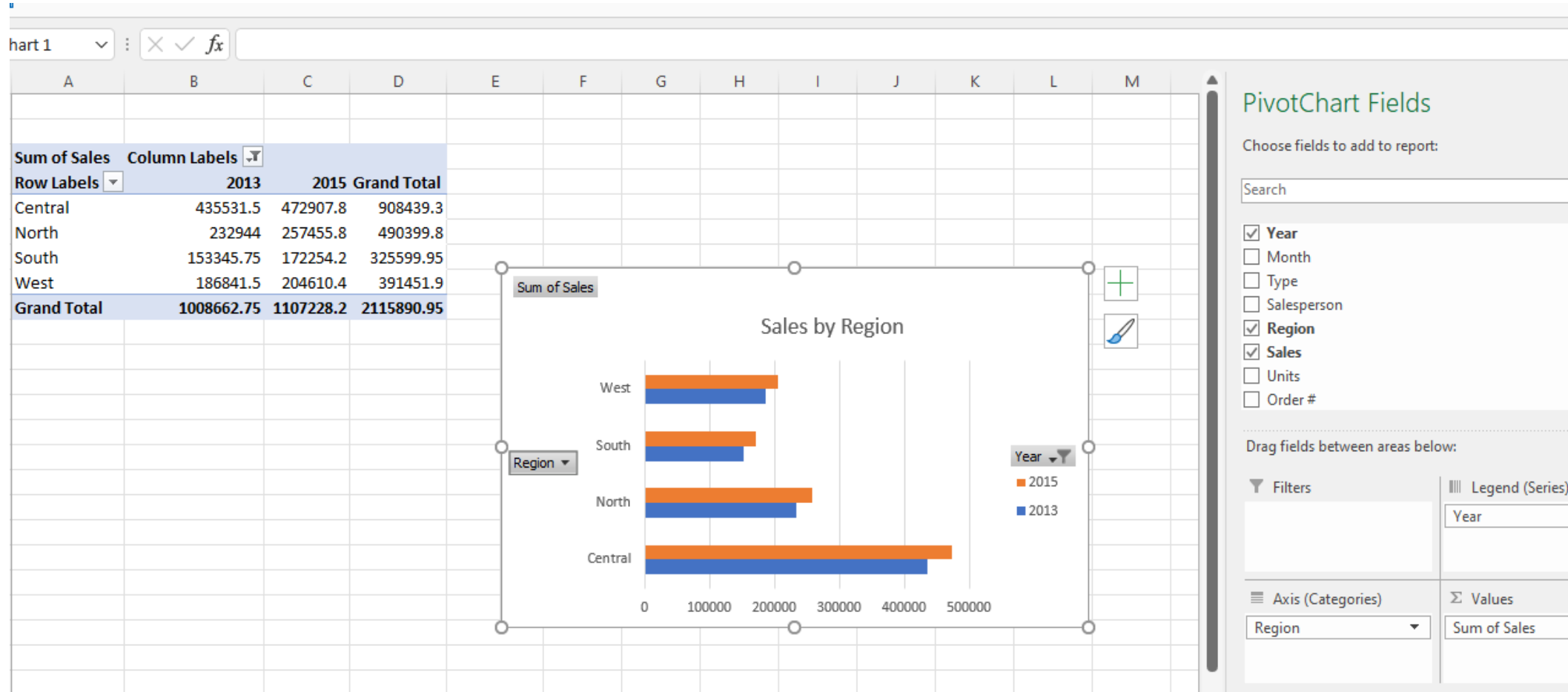
Bar Chart: Sales By salesperson and year



Bar Cart. Sales by Salesperson

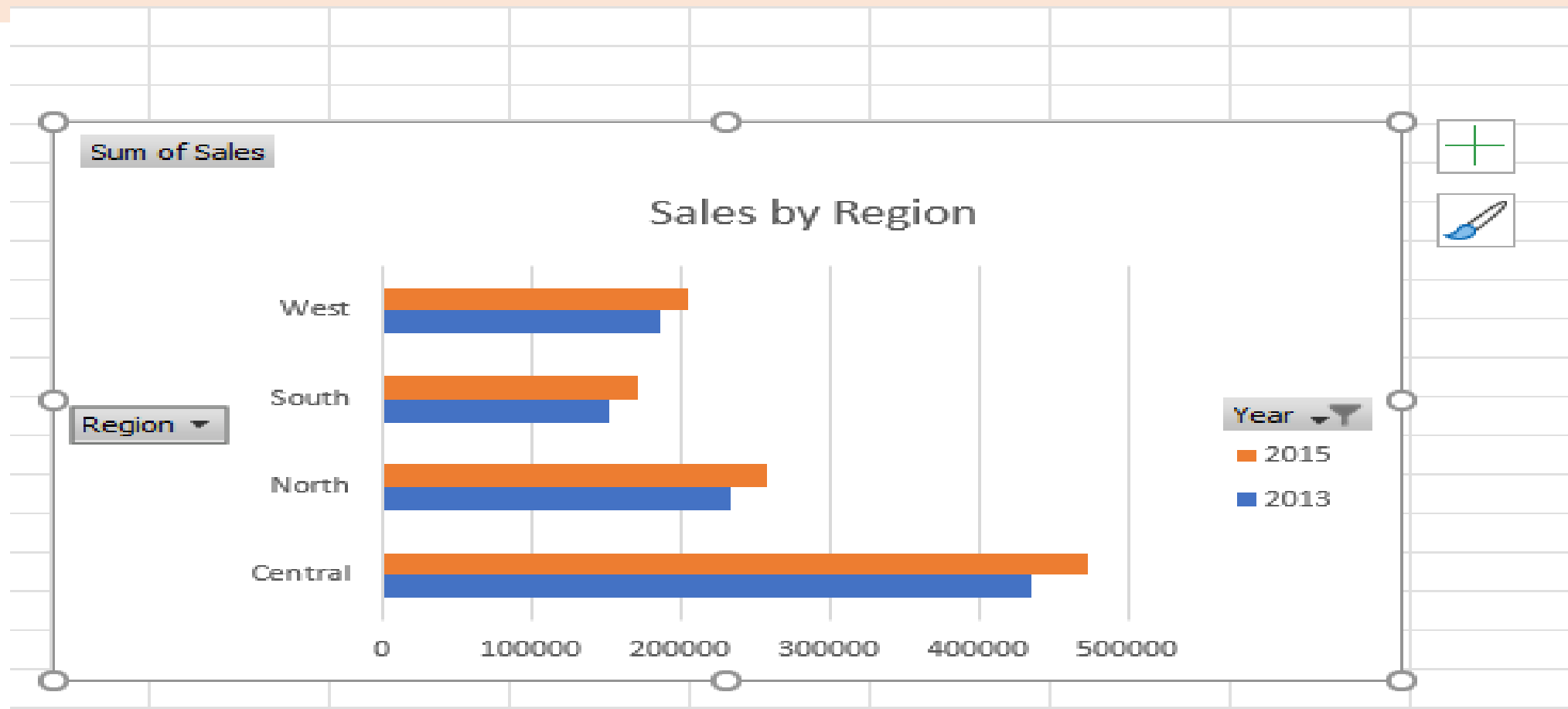


Bar Cart: Sales by Region

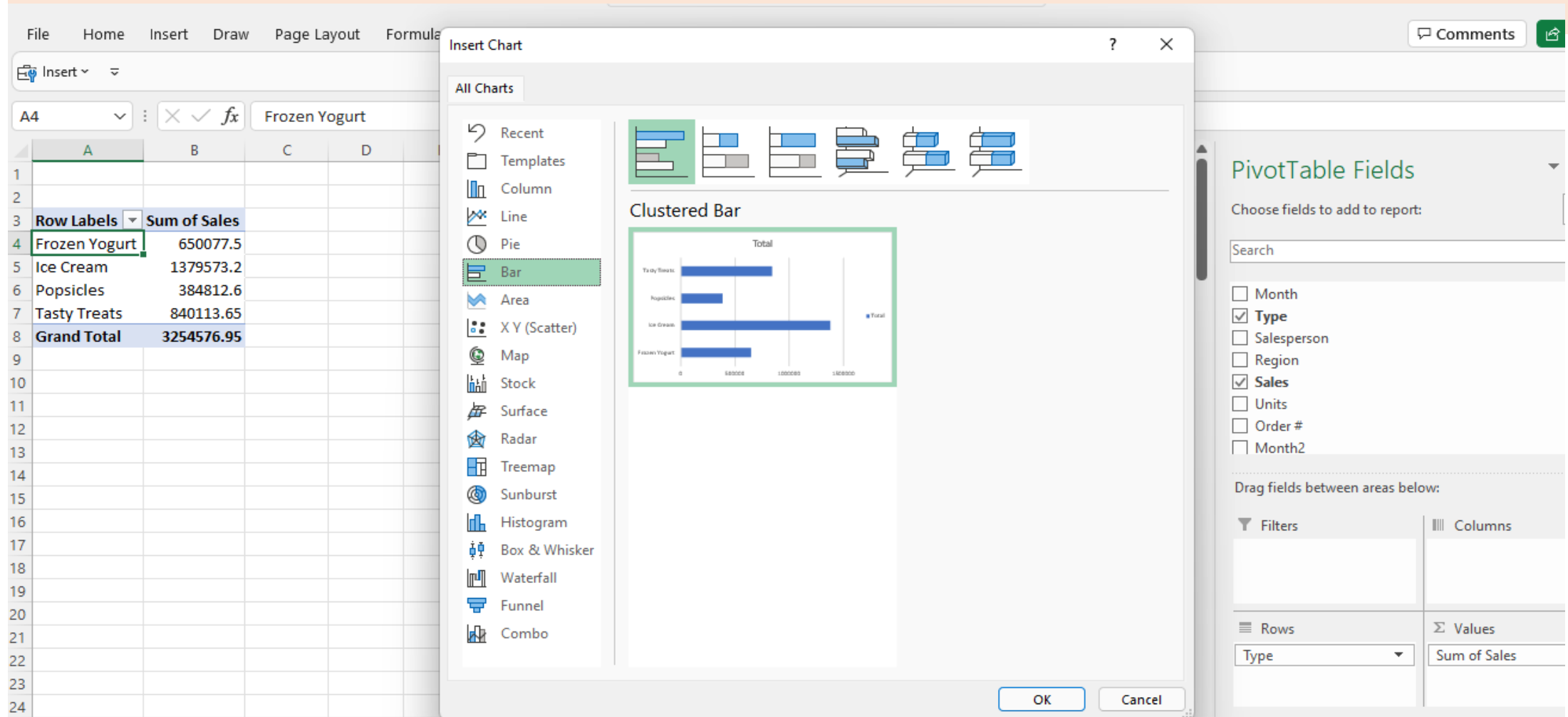


Bar Cart: Sales by Region

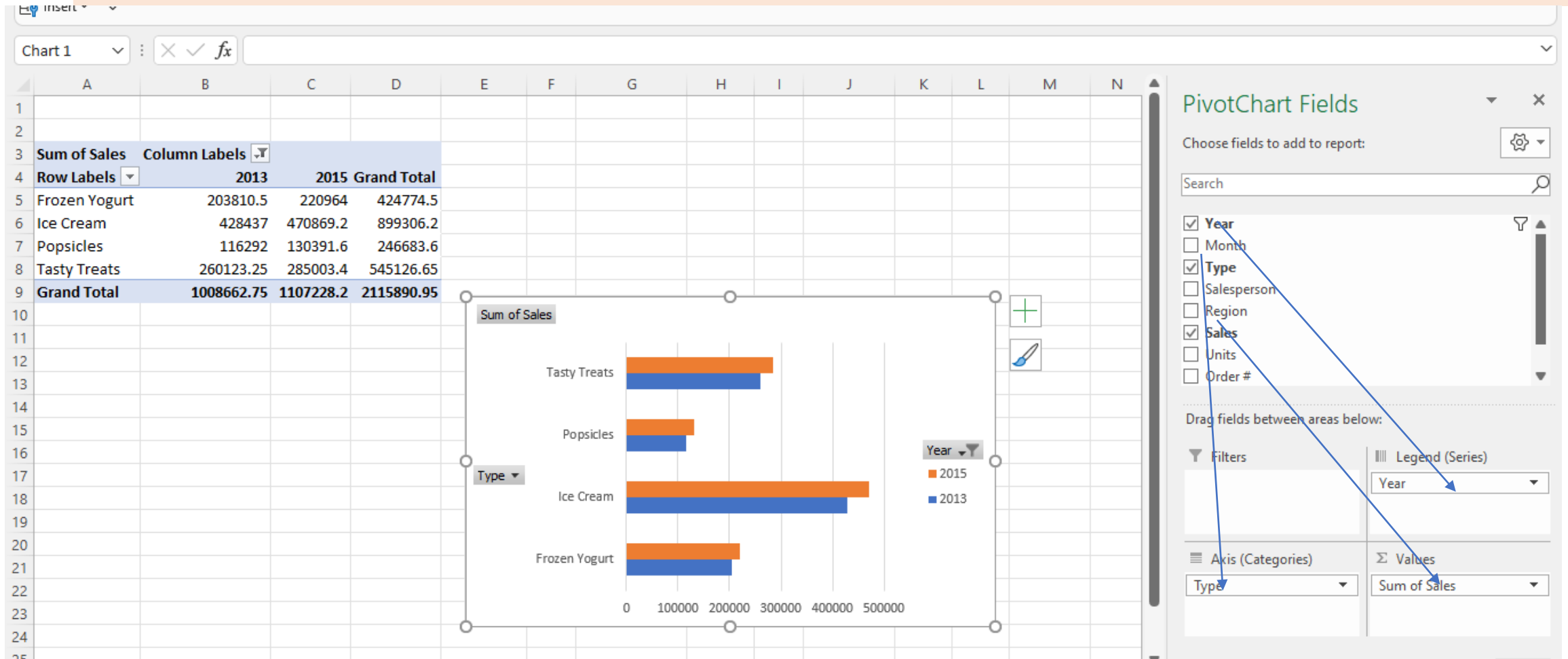
-



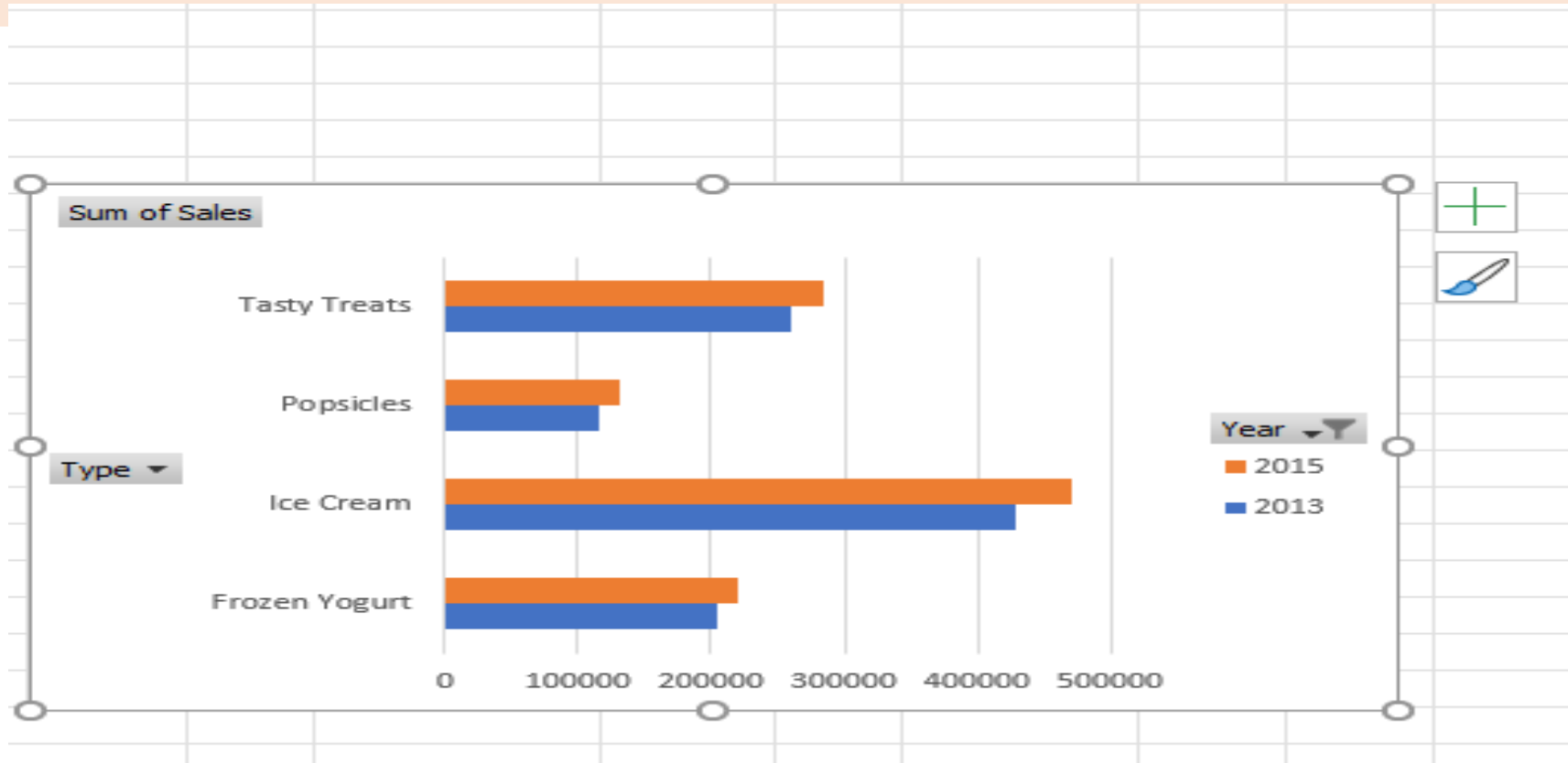
Bar Chart: Sales by product line



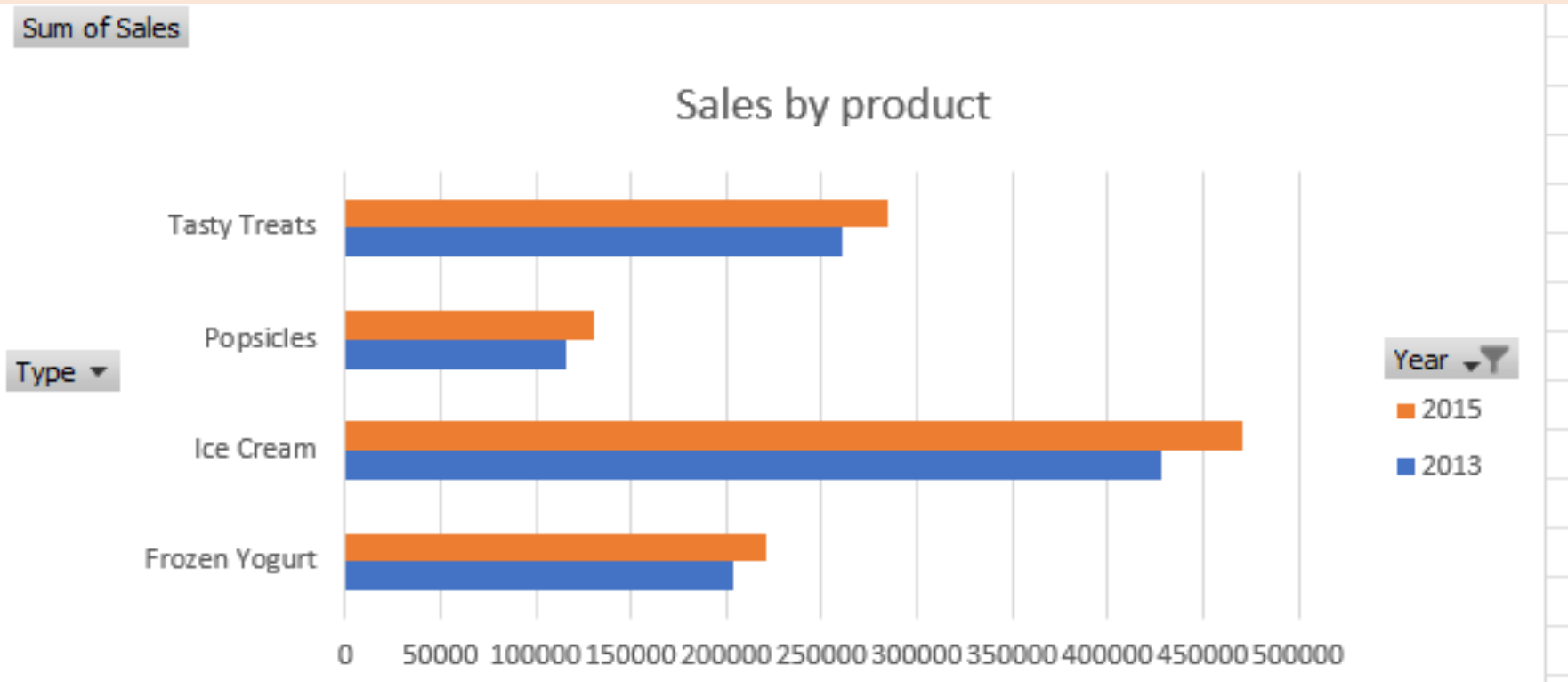
Bar Chart: Sales by product type



Bar Chart: Sales by product type Cont'd



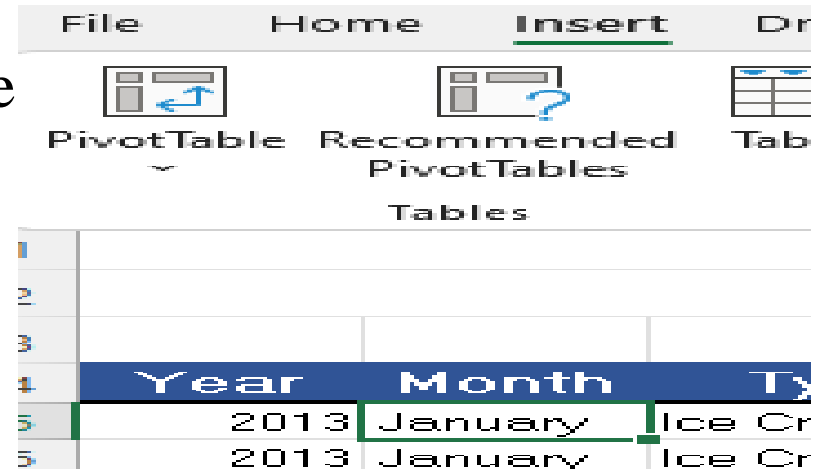
Bar Chart: Sales by product type Cont'd



2. Create a pivot table and group data based on salesperson

Inserting pivot table procedure

- Open your original spreadsheet and remove any blank rows or columns.
- Make sure each column has a heading, as it will be carried over to the Field List.
- Make sure your cells are properly formatted for their data type.
- Select one cell
- Click the Insert tab.
- Select the PivotTable button from the
- Select PivotTable from the list



Pivot Table

| Year | Month | Type | Salesperson | Region | Sales | Units | Order # |
|------|---------|--------------|-------------|---------|-------------|-------|---------|
| 2013 | January | Ice Cream | Bishop | West | \$2,395.50 | 1597 | 001 |
| 2013 | January | Ice Cream | Bishop | West | \$11,761.50 | 7841 | 002 |
| 2013 | January | Frozen Yogur | Bishop | West | \$8,943.00 | 5962 | 003 |
| 2013 | January | Ice Cream | Bishop | West | \$2,395.50 | 1597 | 004 |
| 2013 | January | Ice Cream | Bishop | West | \$11,761.50 | 7841 | 005 |
| 2013 | January | Frozen Yogur | Bishop | West | \$8,943.00 | 5962 | 006 |
| 2013 | January | Frozen Yogur | Lee | Central | \$14,596.50 | 9731 | 007 |
| 2013 | January | Tasty Treats | Lee | Central | \$8,793.00 | 5862 | 008 |
| 2013 | January | Frozen Yogur | Lee | Central | \$14,596.50 | 9731 | 009 |
| 2013 | January | Tasty Treats | Lee | Central | \$8,793.00 | 5862 | 010 |
| 2013 | January | Ice Cream | Parker | North | \$4,666.00 | 5623 | 011 |
| 2013 | January | Ice Cream | Parker | North | \$7,318.50 | 4879 | 012 |
| 2013 | January | Ice Cream | Parker | North | \$5,500.00 | 5623 | 013 |
| 2013 | January | Ice Cream | Parker | North | \$7,318.50 | 4879 | 014 |
| 2013 | January | Popsicles | Pullen | Central | \$3,553.50 | 2369 | 015 |
| 2013 | January | Popsicles | Pullen | Central | \$3,553.50 | 2369 | 016 |
| 2013 | January | Frozen Yogur | Watson | Central | \$14,596.50 | 9731 | 017 |
| 2013 | January | Tasty Treats | Watson | Central | \$8,793 | | |
| 2013 | January | Frozen Yogur | Watson | Central | \$14,596 | | |
| 2013 | January | Tasty Treats | Watson | Central | \$8,793 | | |

Create Pivot Table

Table/Range

Select New worksheet

PivotTable from table or range

Select a table or range

Table/Range: Sales!\$A\$4:\$H\$448

Choose where you want the PivotTable to be placed

☒ New Worksheet

☐ Existing Worksheet

Location:

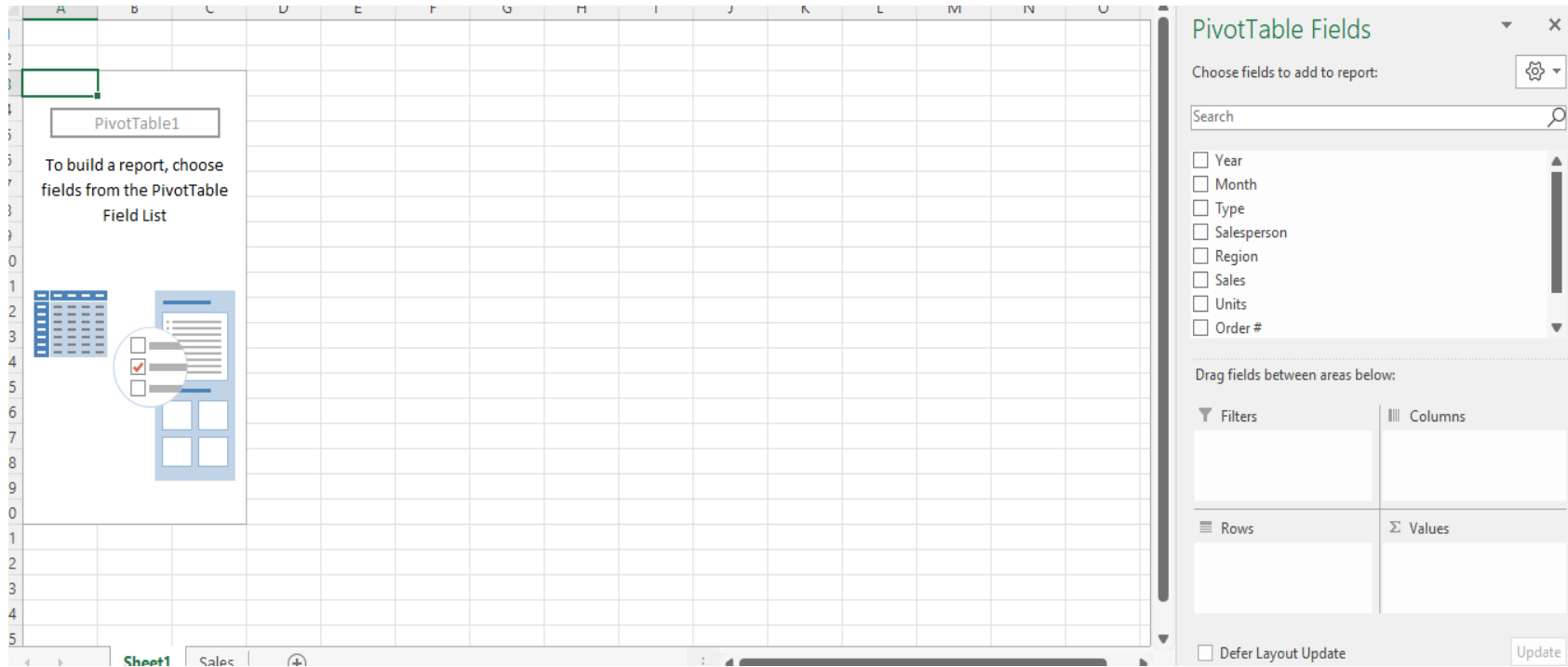
Choose whether you want to analyze multiple tables

☐ Add this data to the Data Model

OK Cancel

Pivot cont'd

- My selection is new work sheet, and it appears as below:



Pivot Cont'd

- Group data based on salesperson

The screenshot displays the Microsoft Excel interface with the PivotTable Analyze ribbon active. The PivotTable shows sales data grouped by salesperson. The PivotTable Fields task pane on the right shows the 'Salesperson' field in the Rows area and the 'Sales' field in the Values area. Three callouts are present: 1. points to the 'Salesperson' field in the task pane; 2. points to the 'Sales' field in the task pane; 3. points to the 'Group Selection' button in the PivotTable Analyze ribbon.

| Row Labels | Sum of Sales |
|--------------------|-------------------|
| Bishop | 596929.9 |
| Lee | 740578.4 |
| Parker | 760122.8 |
| Pullen | 505968.95 |
| Watson | 650976.9 |
| Grand Total | 3254576.95 |

PivotTable Fields

Choose fields to add to report:

Search

☐ type
☒ Salesperson
☐ Region
☒ Sales
☐ Units
☐ Order #
☐ Month2

More Tables...

Drag fields between areas below:

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

| Rows | Values |
|-------------|--------------|
| Salesperson | Sum of Sales |

FileHomeInsertDrawPage LayoutFormulasDataReviewViewDeveloperHelpPivotTable AnalyzeDesign

Insert

L1:fxGrand Total

| A | B | C | D | E | F | G | H | I | J | K | L | M | N | O |
|-------------|--------------|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Row Labels | Sum of Sales | | | | | | | | | | | | | |
| Group1 | 2097631.1 | | | | | | | | | | | | | |
| Bishop | 596929.9 | | | | | | | | | | | | | |
| Lee | 740578.4 | | | | | | | | | | | | | |
| Parker | 760122.8 | | | | | | | | | | | | | |
| Group2 | 1156945.85 | | | | | | | | | | | | | |
| Pullen | 505968.95 | | | | | | | | | | | | | |
| Watson | 650976.9 | | | | | | | | | | | | | |
| Grand Total | 3254576.95 | | | | | | | | | | | | | |

PivotTable Fields

Choose fields to add to report:

Search

☐ type

☒ Salesperson

☐ Region

☒ Sales

☐ Units

☐ Order #

☐ Month2

☒ Salesperson2

Drag fields between areas below:

Filters

Columns

Rows

Salesperson2

Salesperson

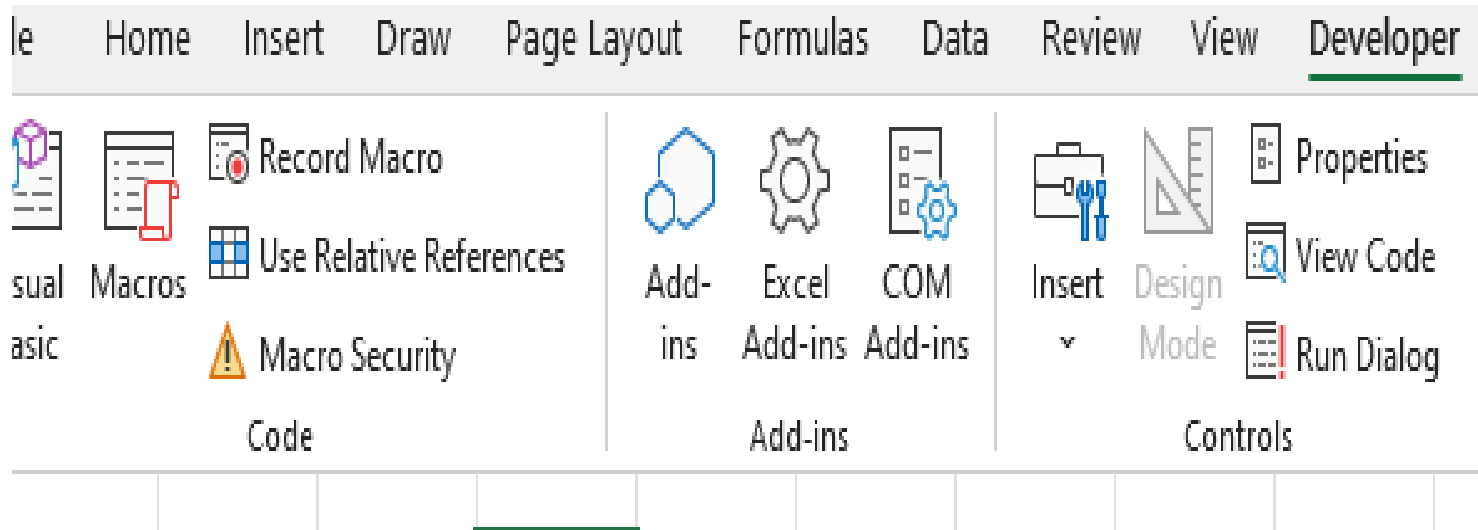
Values

Sum of Sales

Group 1

3. Create a shape object and assign a macro to it that displays in message the current date

- Open Excel → Developer → Record Macro

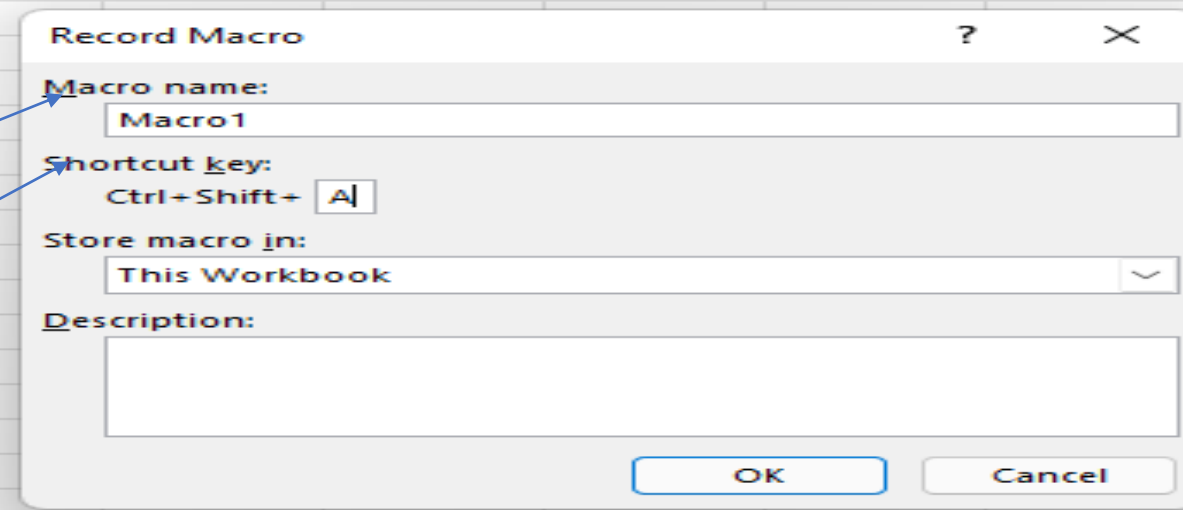


Shape object and assign a macro cont'd

- Open Excel → Developer → Record Macro

Assign
Name

Write
short-
cutkey



The image shows the 'Record Macro' dialog box in Microsoft Excel. The dialog box has a title bar with a question mark and a close button. It contains four fields: 'Macro name:' with the text 'Macro1', 'Shortcut key:' with 'Ctrl+Shift+ A', 'Store macro in:' with a dropdown menu showing 'This Workbook', and 'Description:' with an empty text area. At the bottom are 'OK' and 'Cancel' buttons. Two blue arrows point from the orange text boxes on the left to the 'Macro name' and 'Shortcut key' fields respectively.

| | |
|-----------------|---------------|
| Macro name: | Macro1 |
| Shortcut key: | Ctrl+Shift+ A |
| Store macro in: | This Workbook |
| Description: | |

OK Cancel

Macro Record- Insert formula in the first active worksheet

- Name and time(now()) macro recording → Then inter → Add New sheet

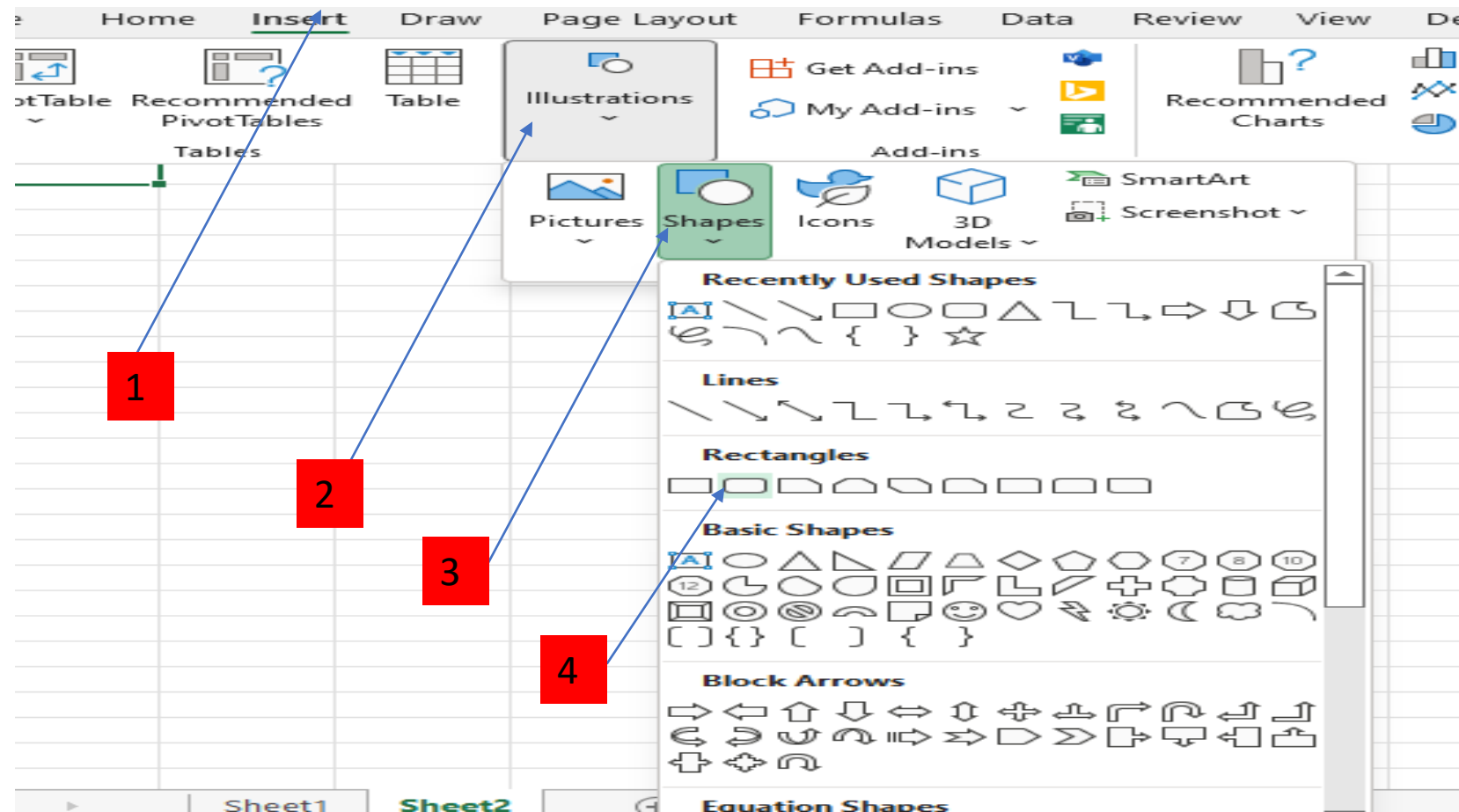
| SUM | ⌵ | ✗ | ✓ | <i>fx</i> | =now() |
|--------|---|---|---|-----------|--------|
| A | B | C | D | | |
| Amare | | | | | |
| =now() | | | | | |
| | | | | | |
| | | | | | |



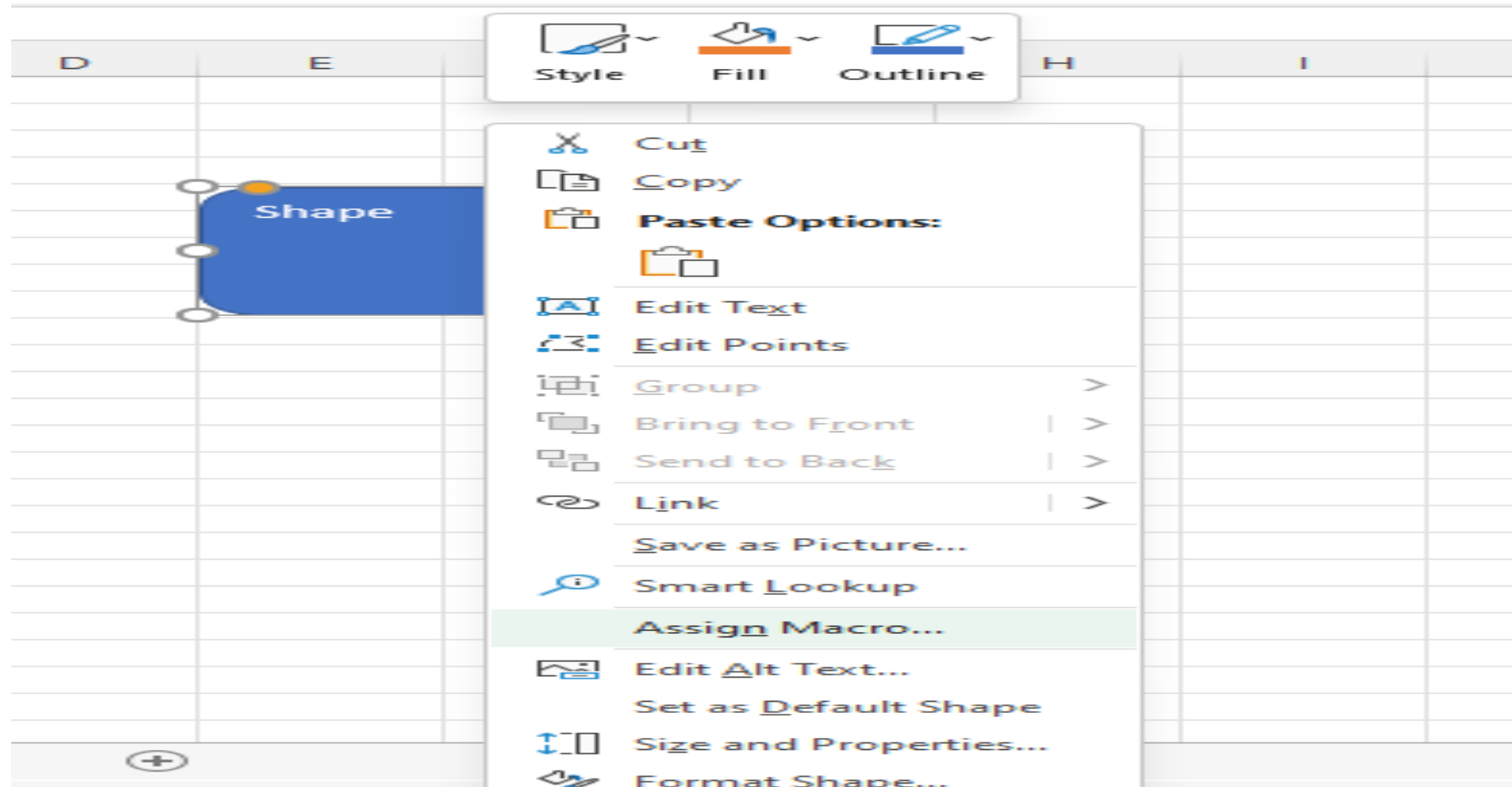
| A | B |
|------------------|---|
| Amare | |
| 12/12/2021 21:48 | |
| | |
| | |

Assigning Shape

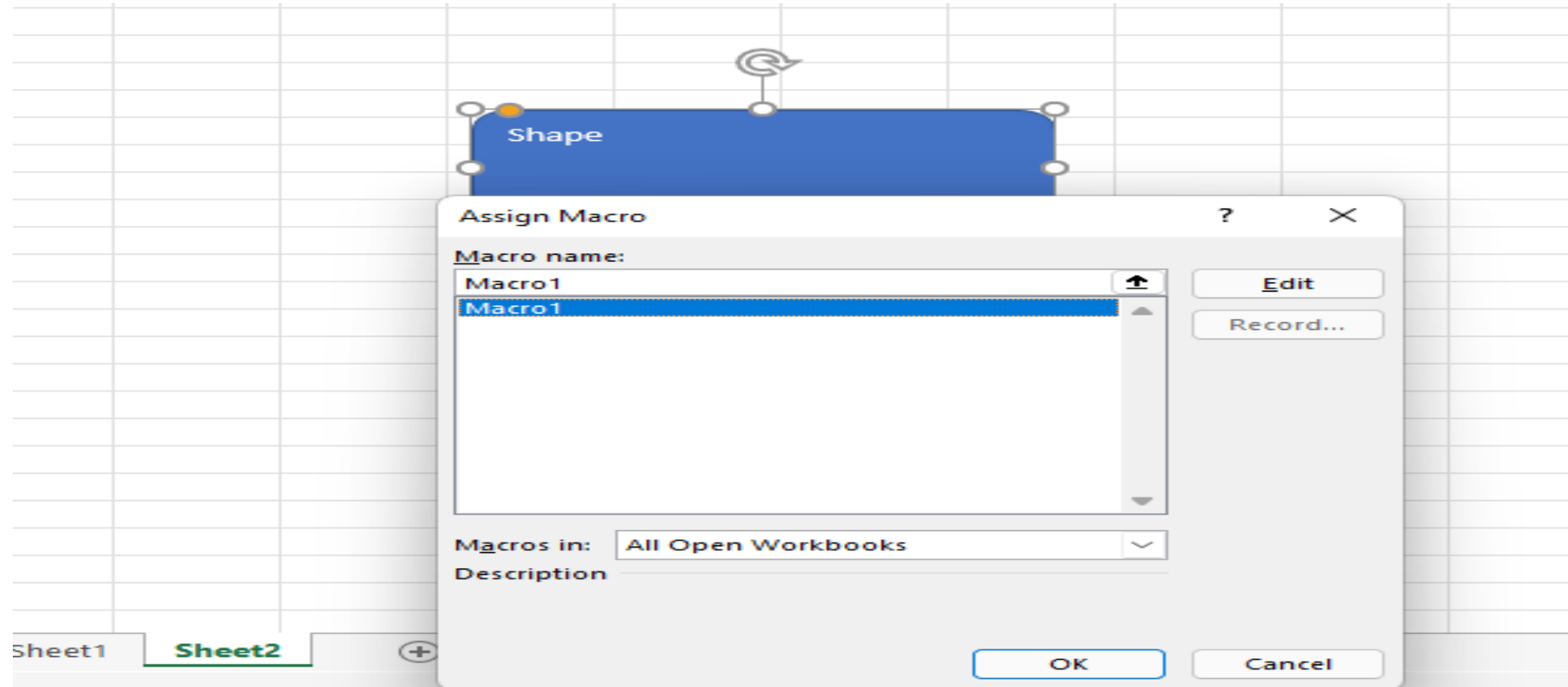
From new sheet Insert Illustrations Shape Rectangular shape



Edit the shape and assign Macro. Double click on the shape to run the Macro

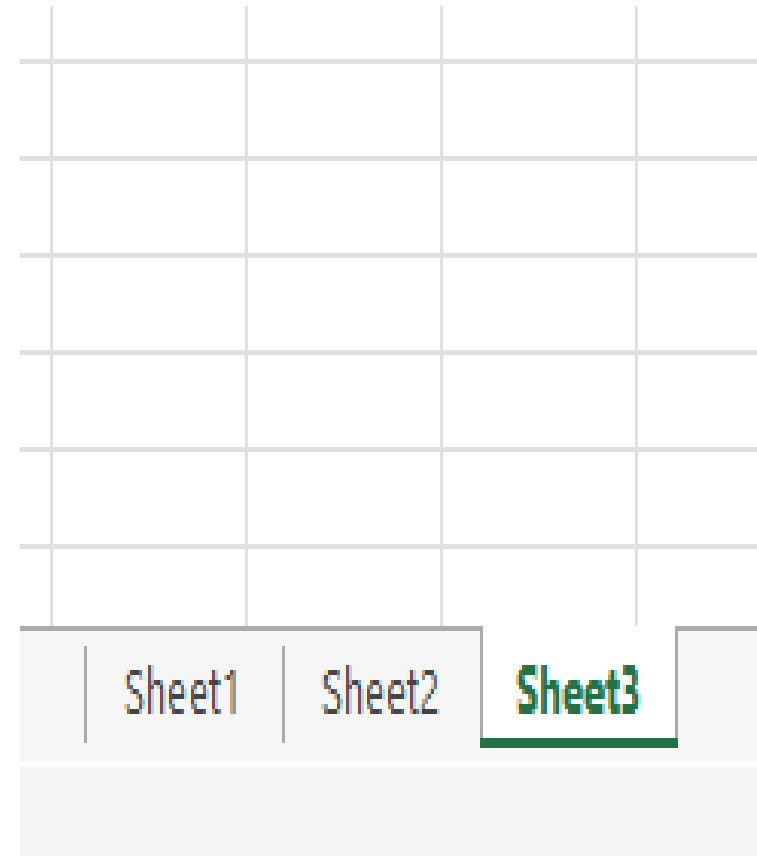
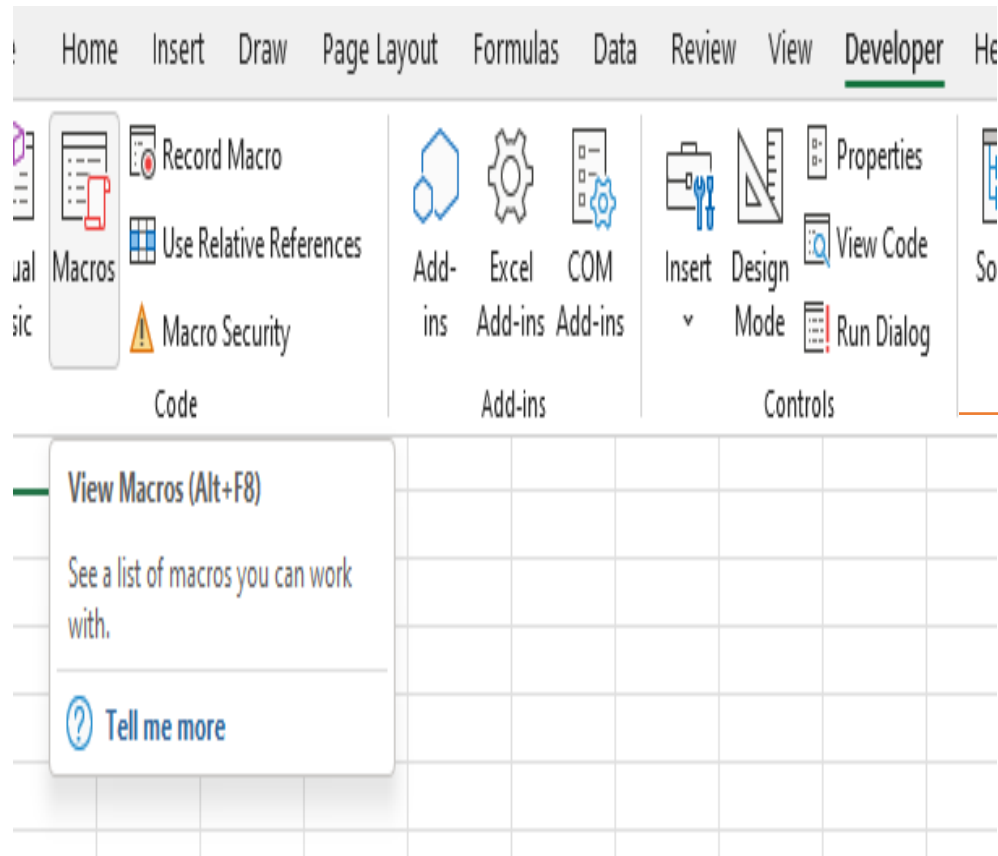


Assign Macro



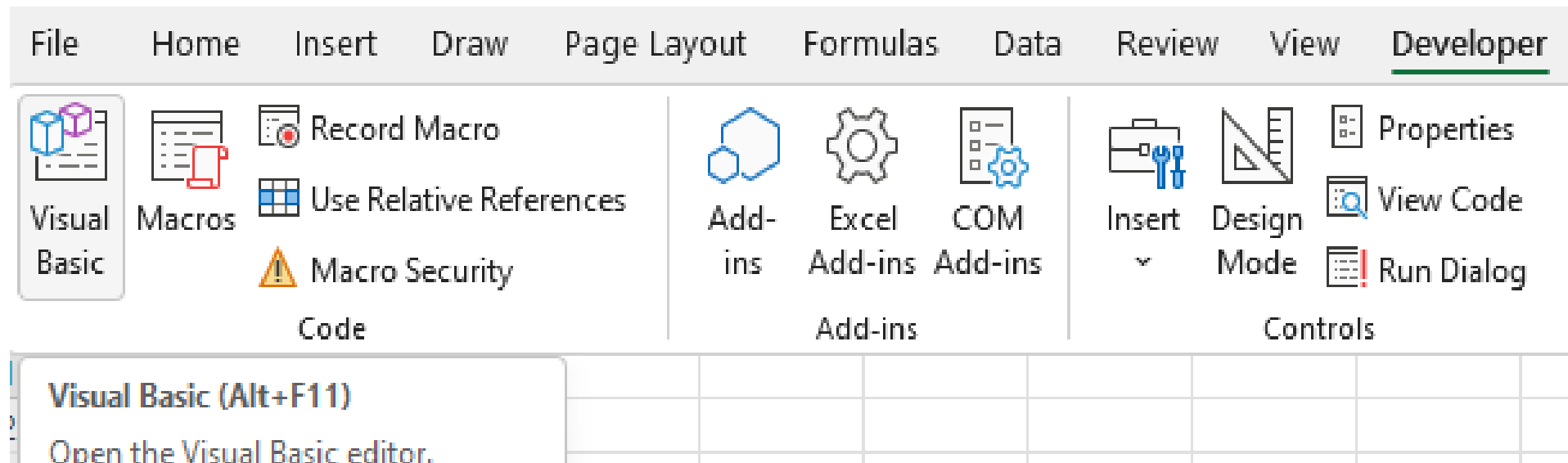
Run Macro: Developer

Click on → Macros

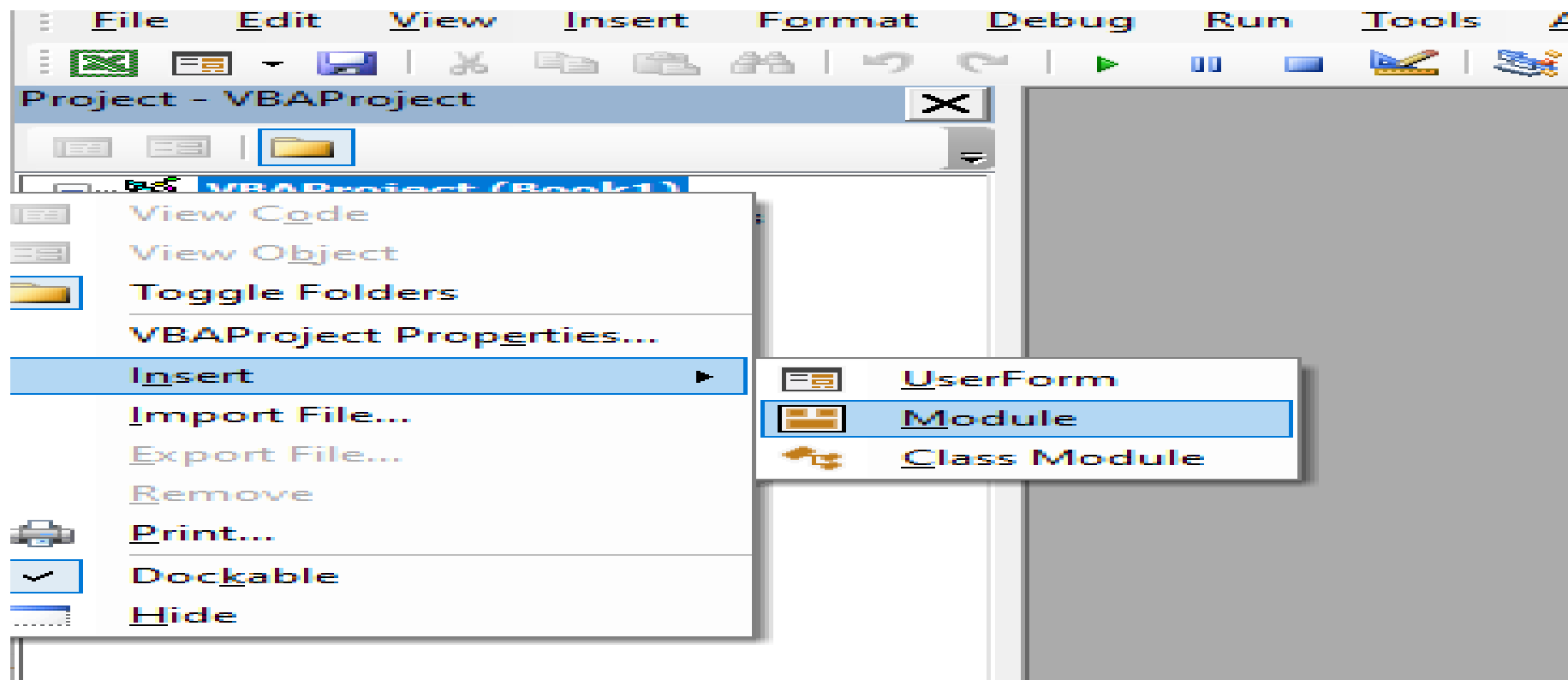


Visual Basic to insert module

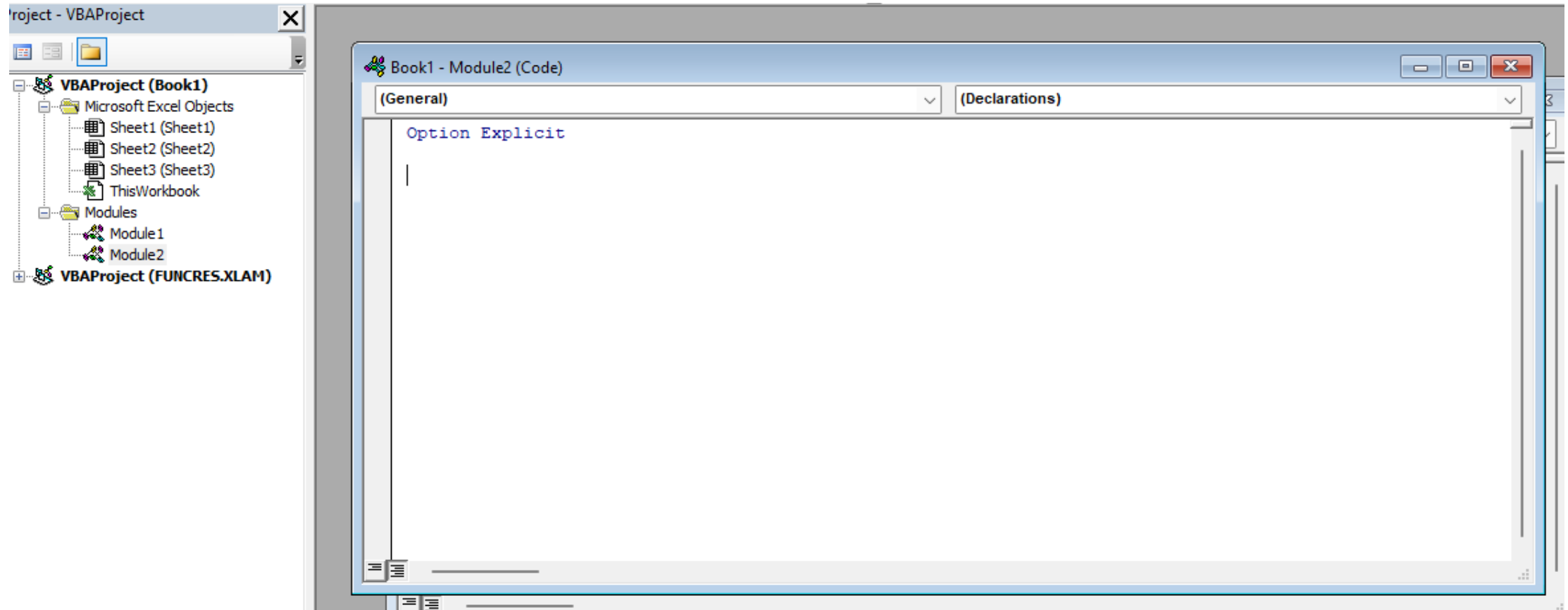
- After macros run, Developer → visual basic to record on VBA Project



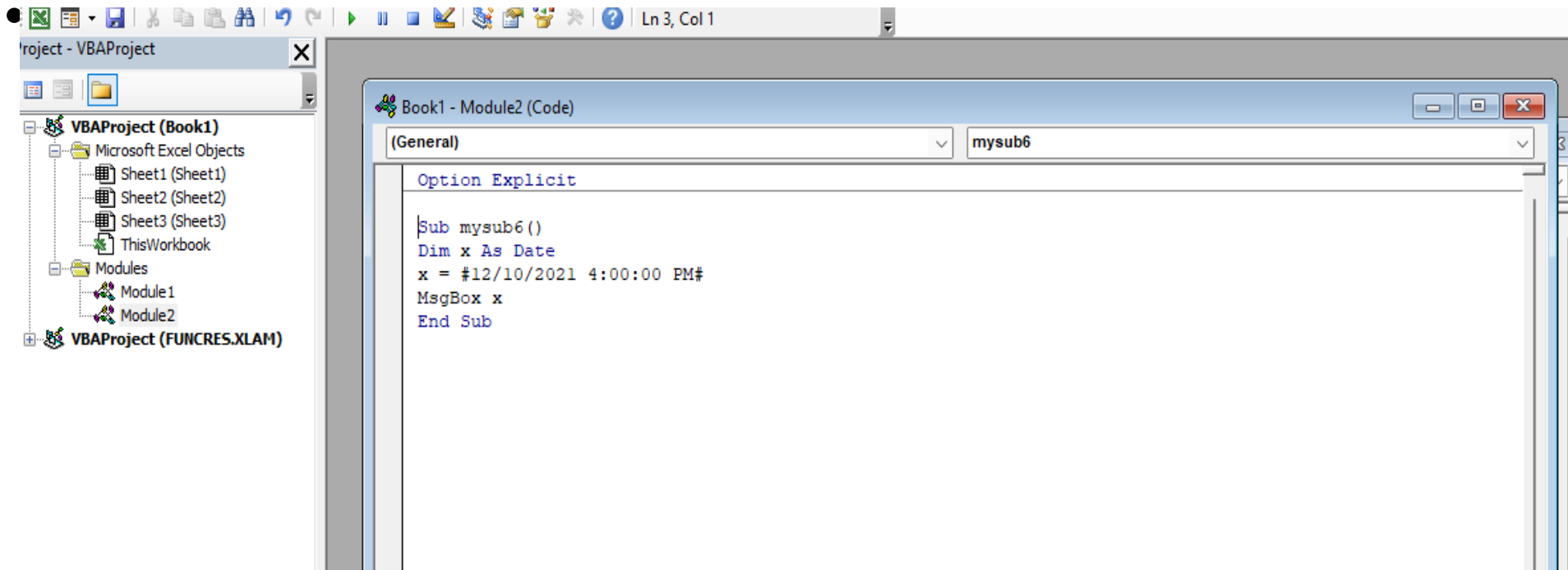
.



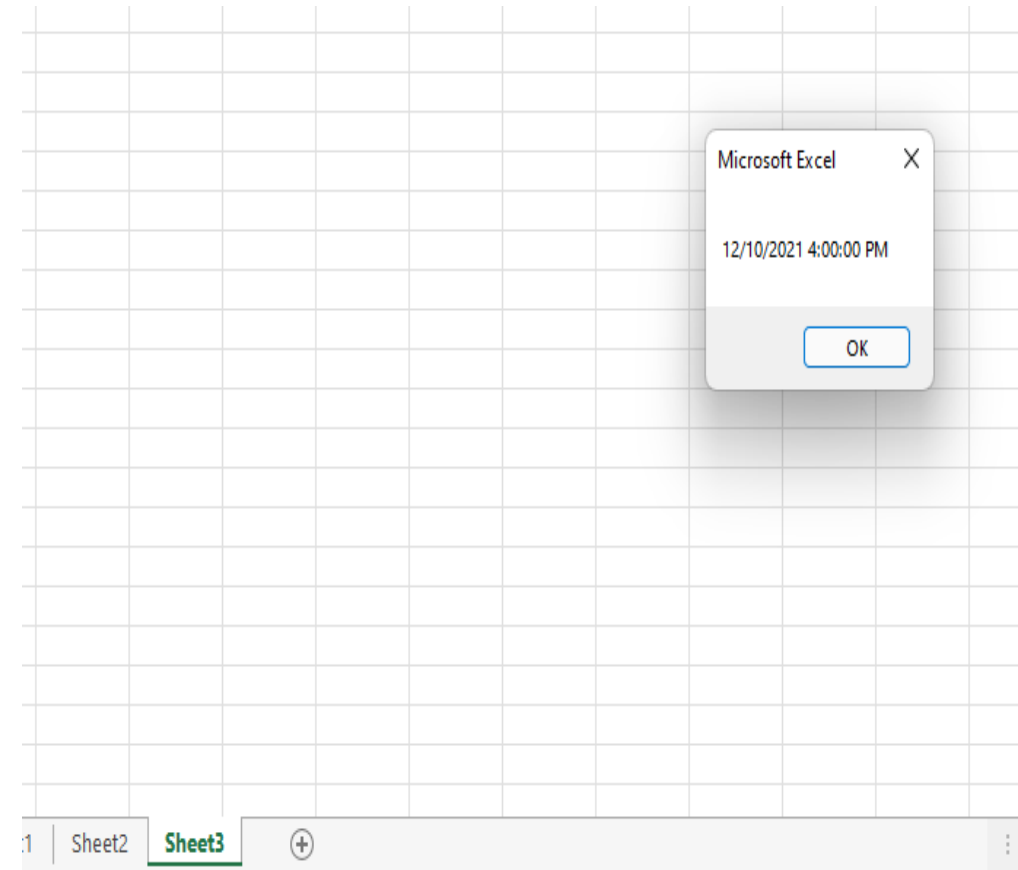
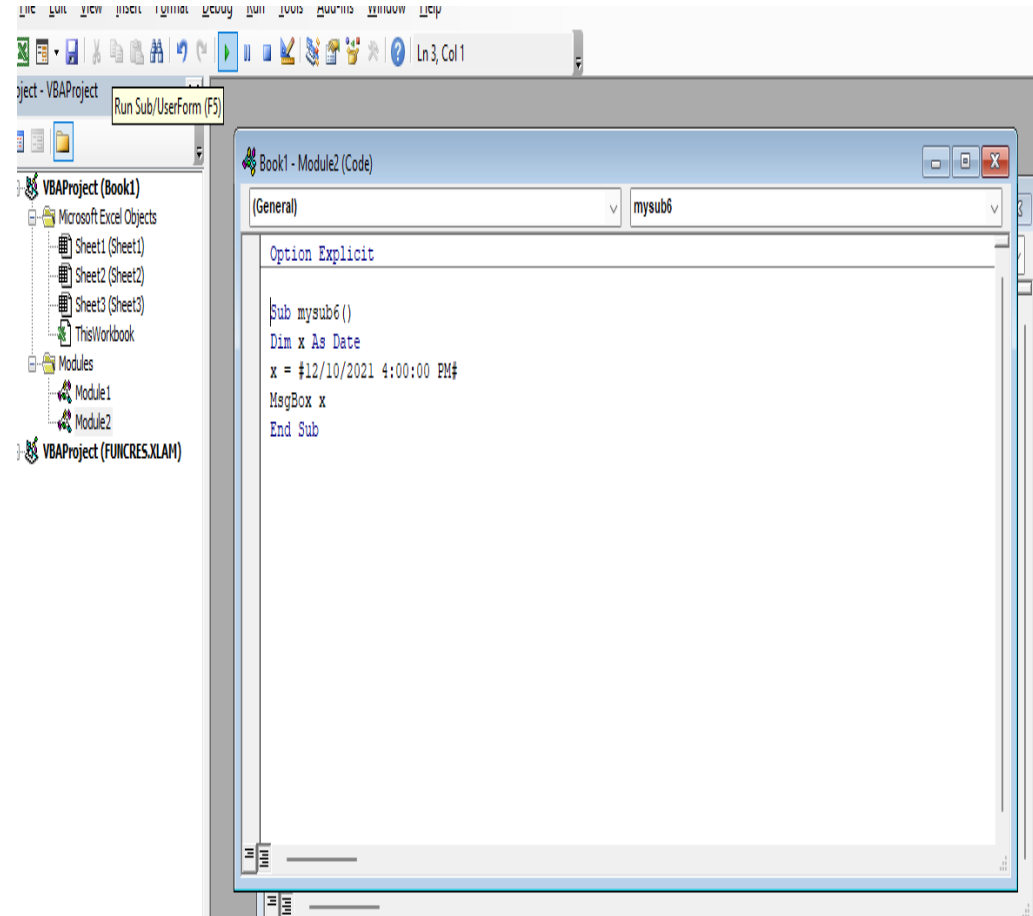
VBA Project Module procedure



Coding on visual basic module

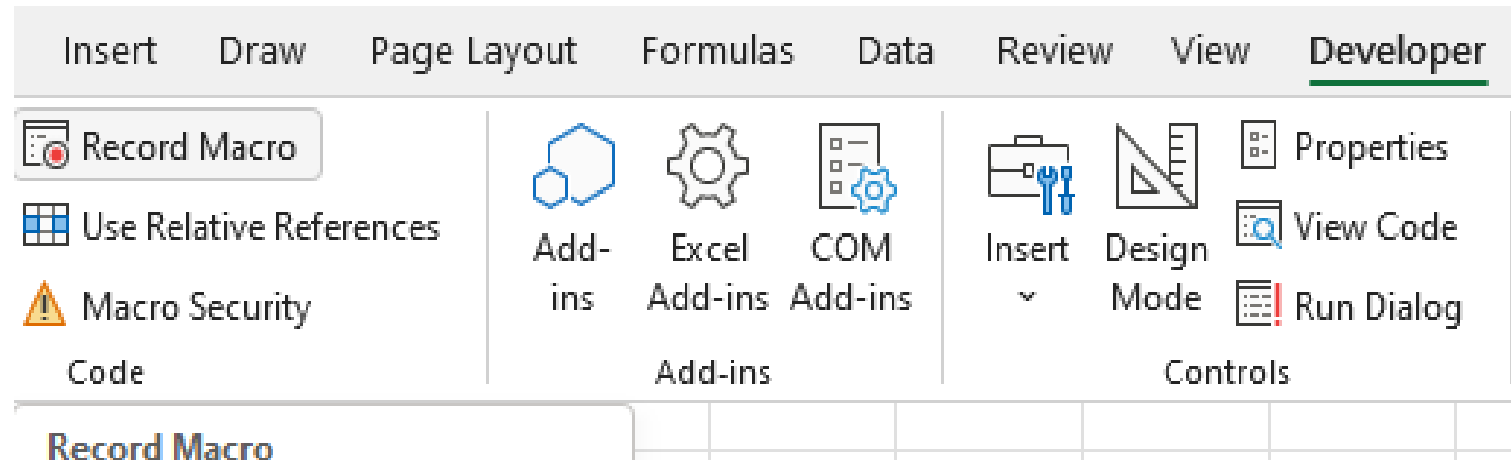


After coding on the module and macro run, the date displayed

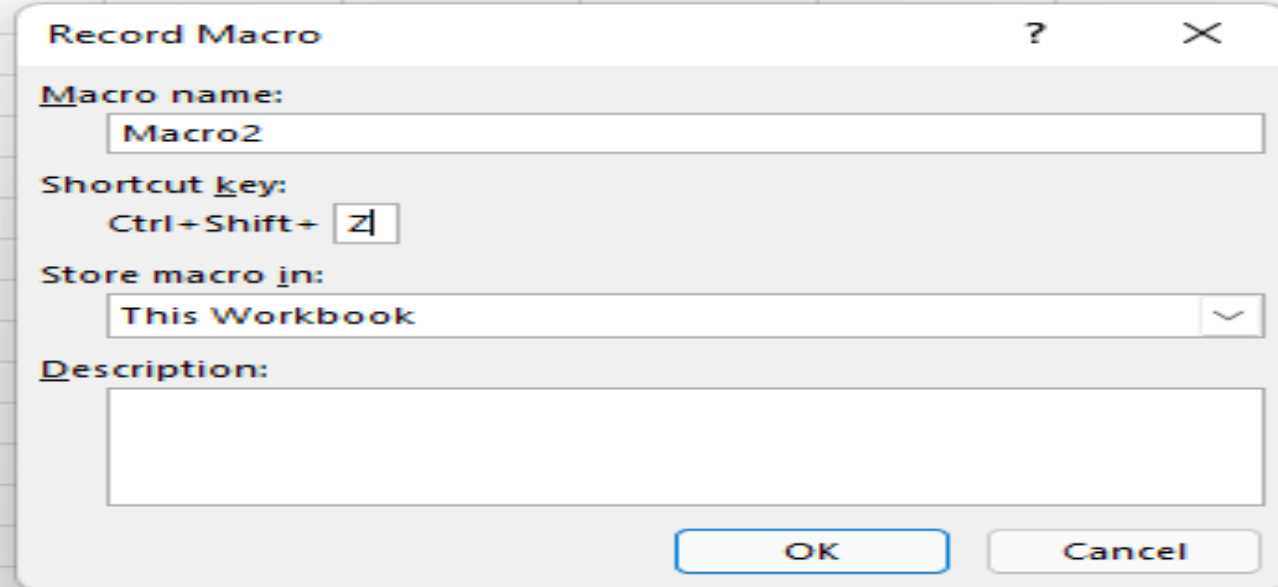


4. Create a procedure that declares variables of type string and integer.

open Active Worksheet **Developer** Record Macro



Macro Name and Shortcut key



The image shows a 'Record Macro' dialog box overlaid on a spreadsheet grid. The dialog box has a title bar with a question mark and a close button. It contains four sections: 'Macro name:' with a text box containing 'Macro2'; 'Shortcut key:' with a text box containing 'Ctrl+Shift+' and a small button with 'Z'; 'Store macro in:' with a dropdown menu showing 'This Workbook'; and 'Description:' with a large empty text area. At the bottom are 'OK' and 'Cancel' buttons.

Record Macro ? X

Macro name:
Macro2

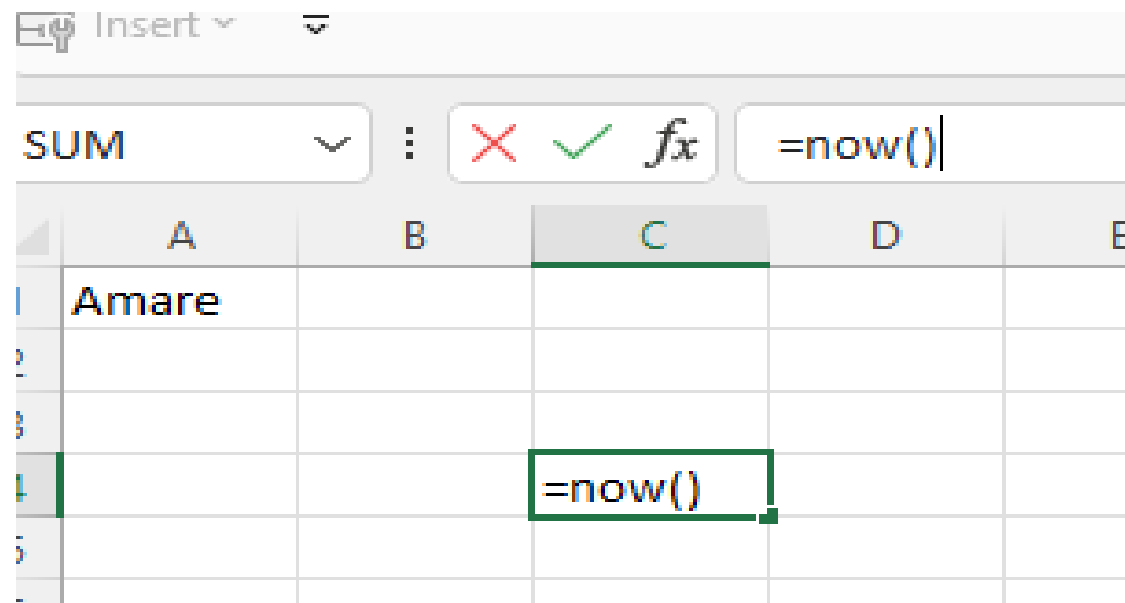
Shortcut key:
Ctrl+Shift+ Z

Store macro in:
This Workbook

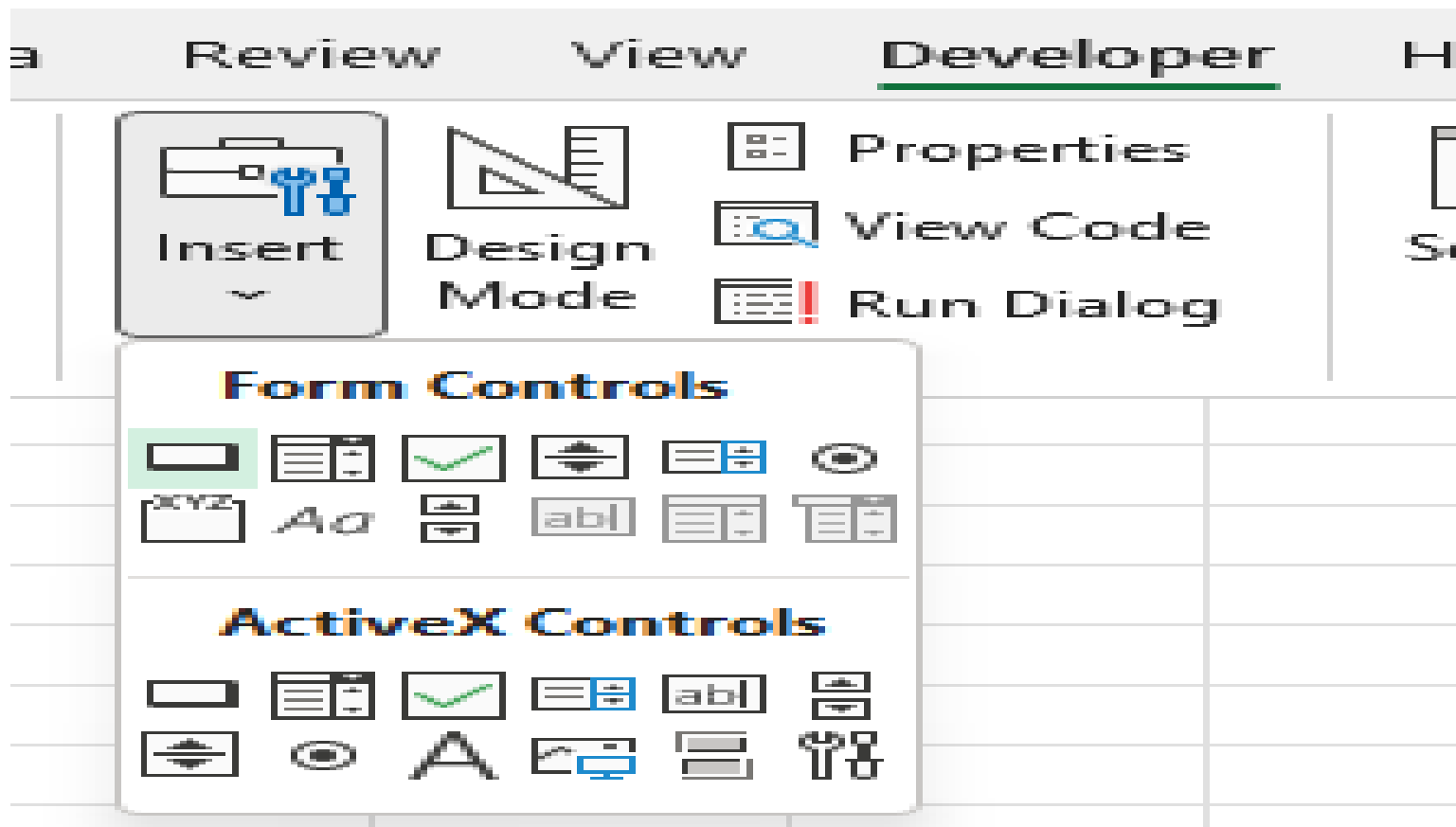
Description:

OK Cancel

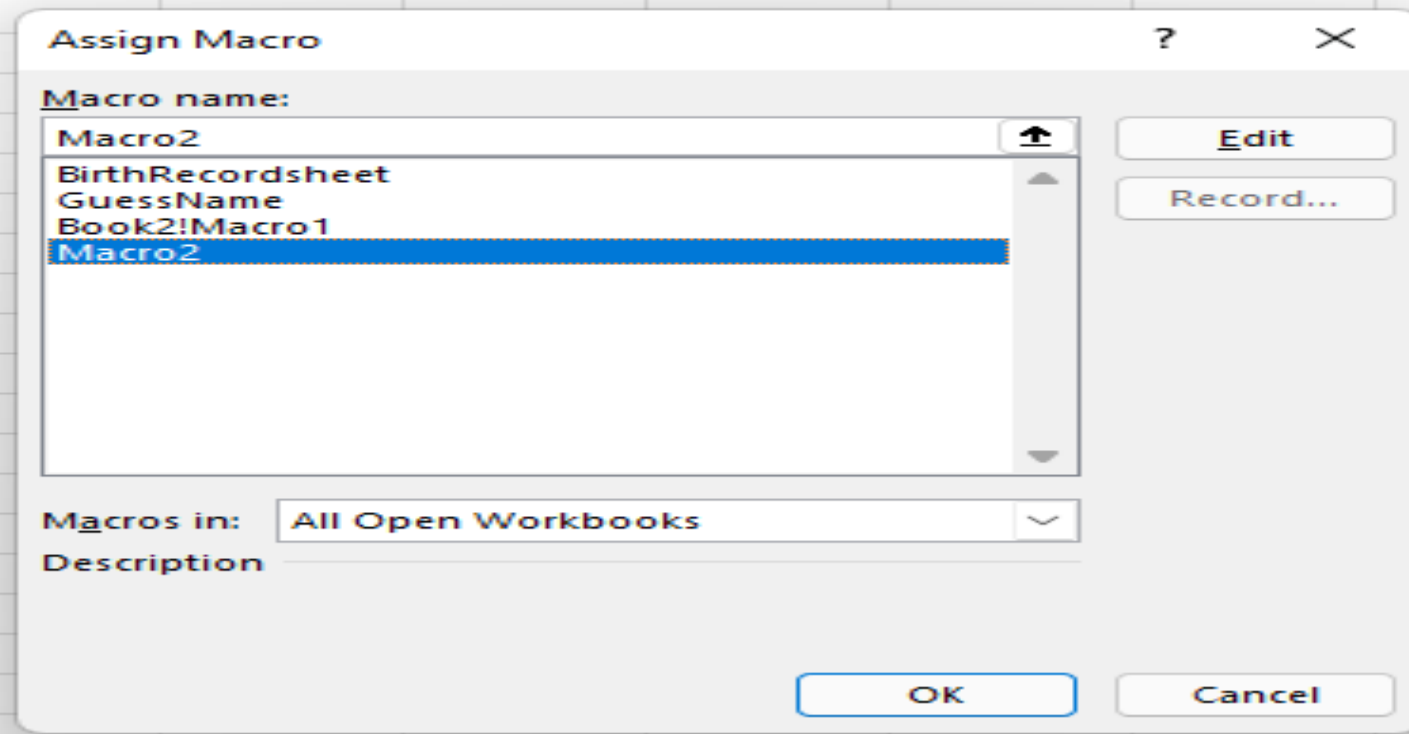
After Recording Macros, stop macro recording and write a formula in new sheet as shown



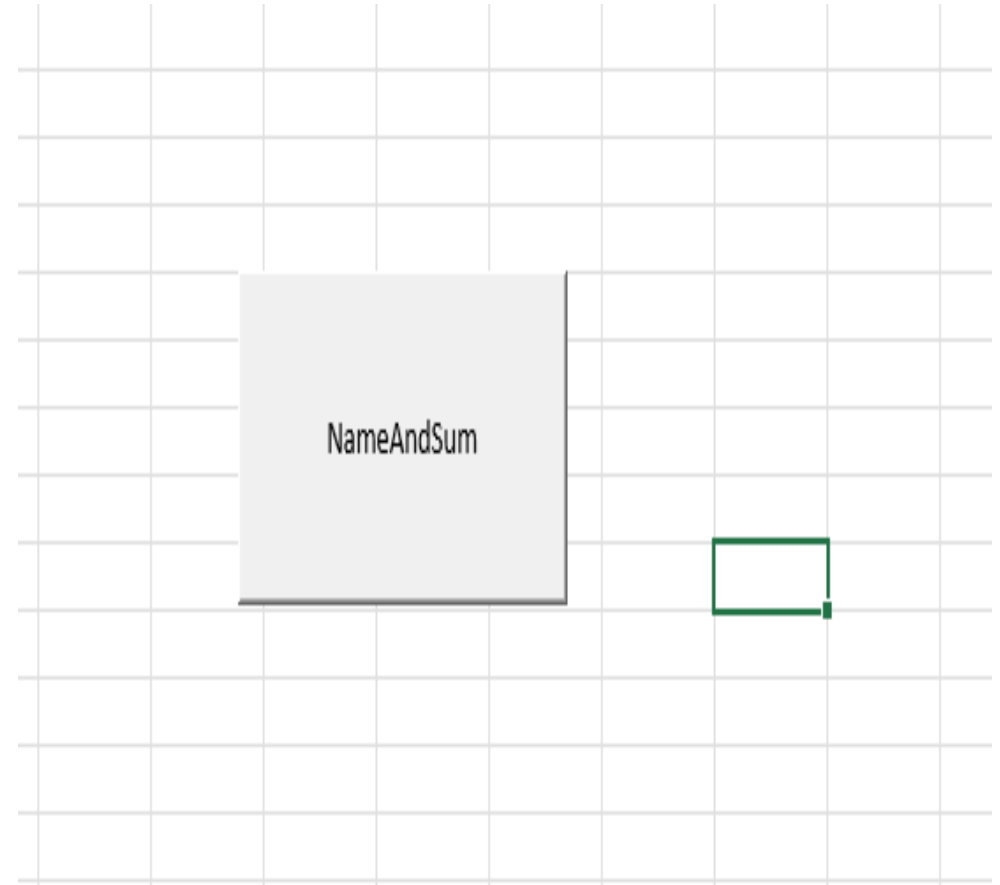
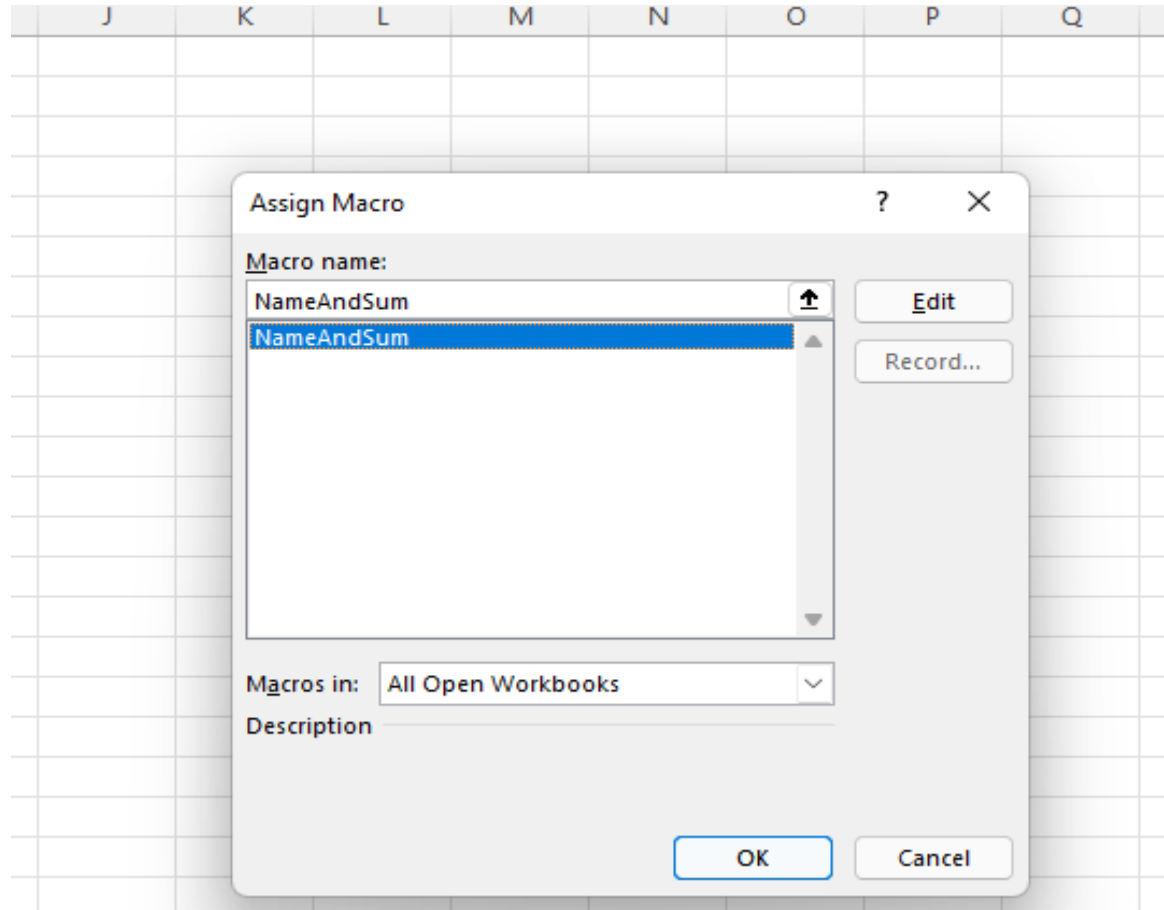
Insert rectangular shape in new worksheet opened to Assign macro



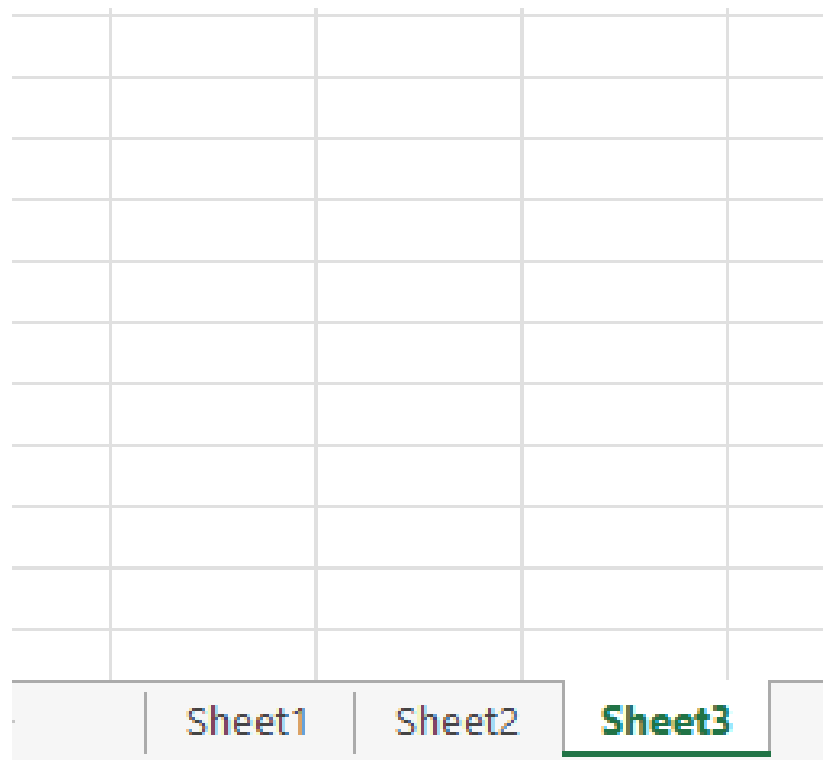
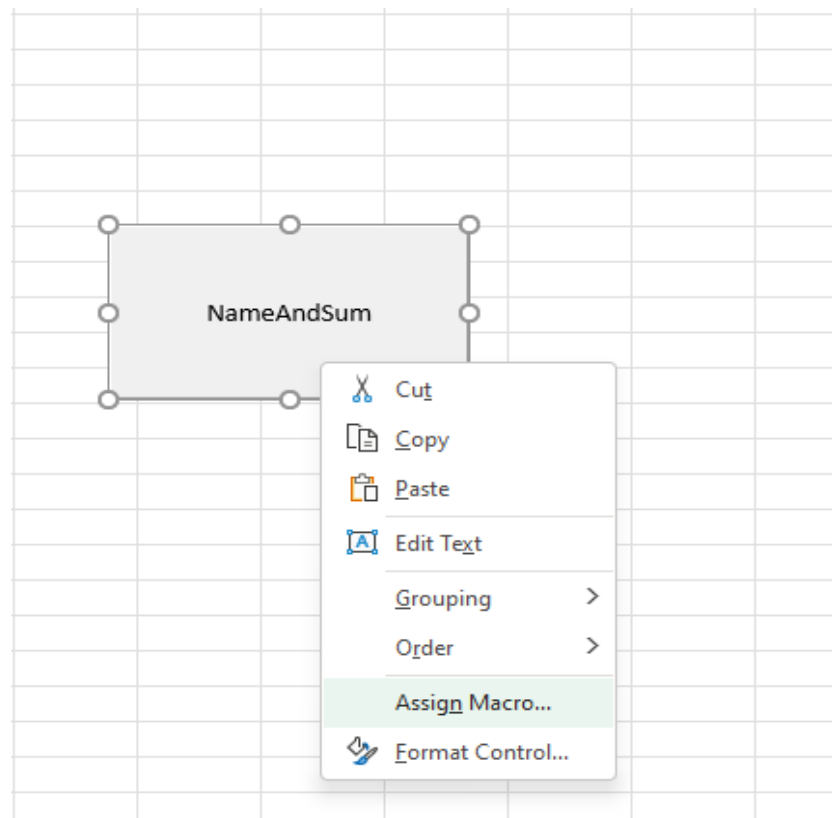
Assign Macro Name



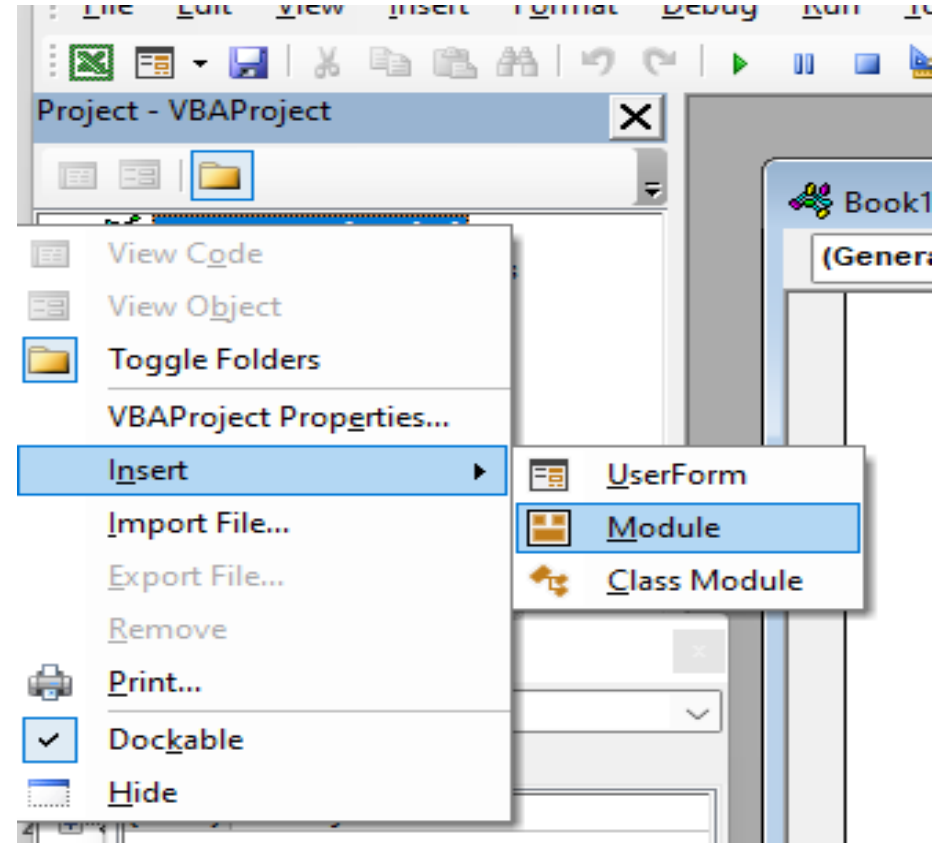
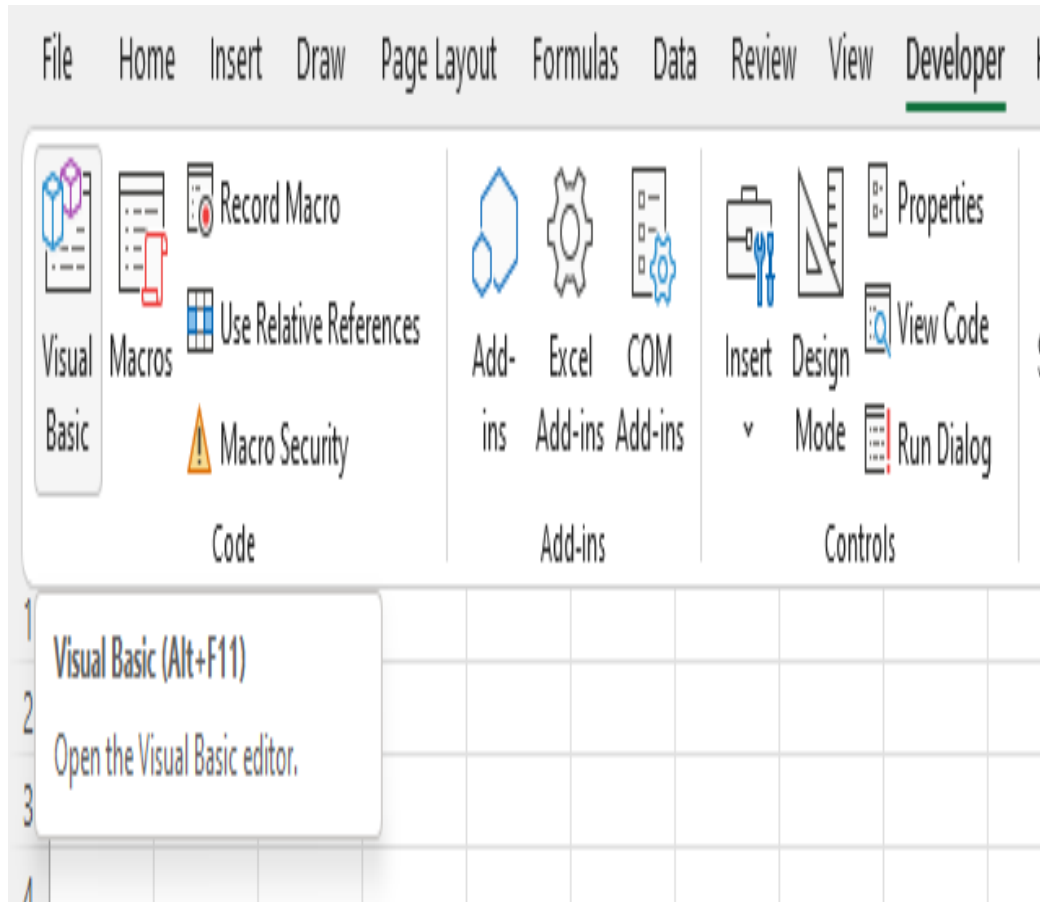
Shape dragging to rename and assign macro



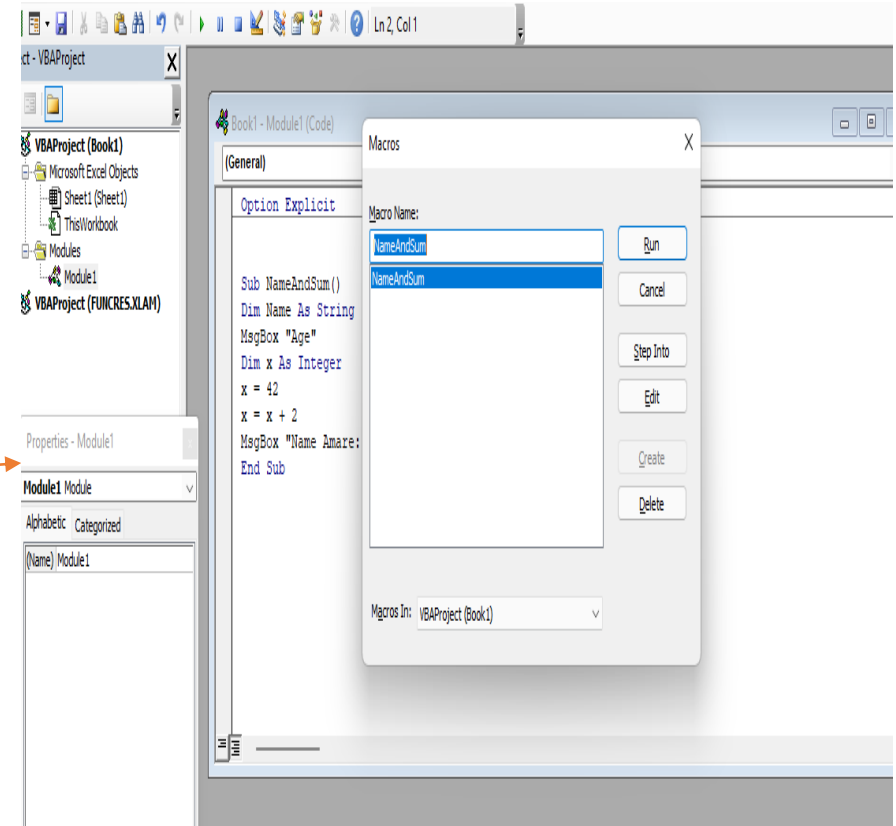
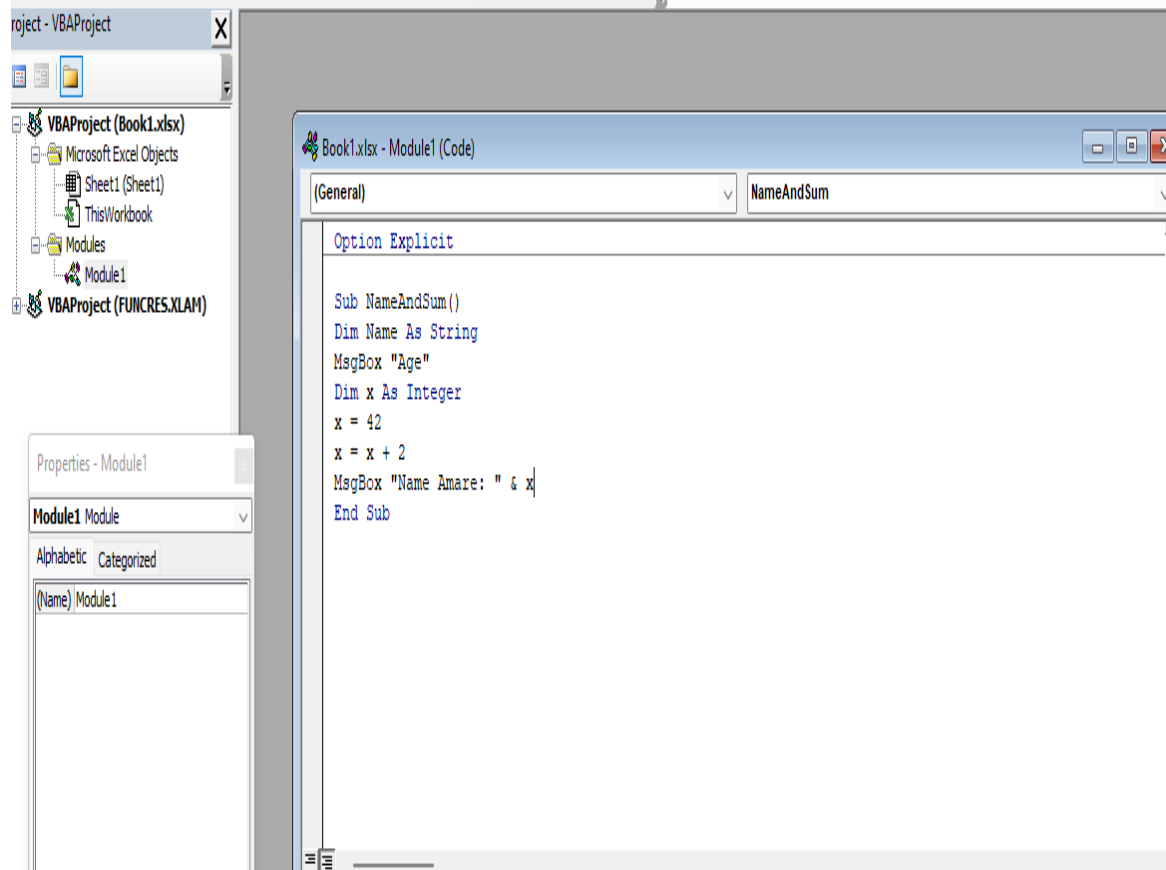
Assign Macro and Double click on rename shape and bring new active worksheet



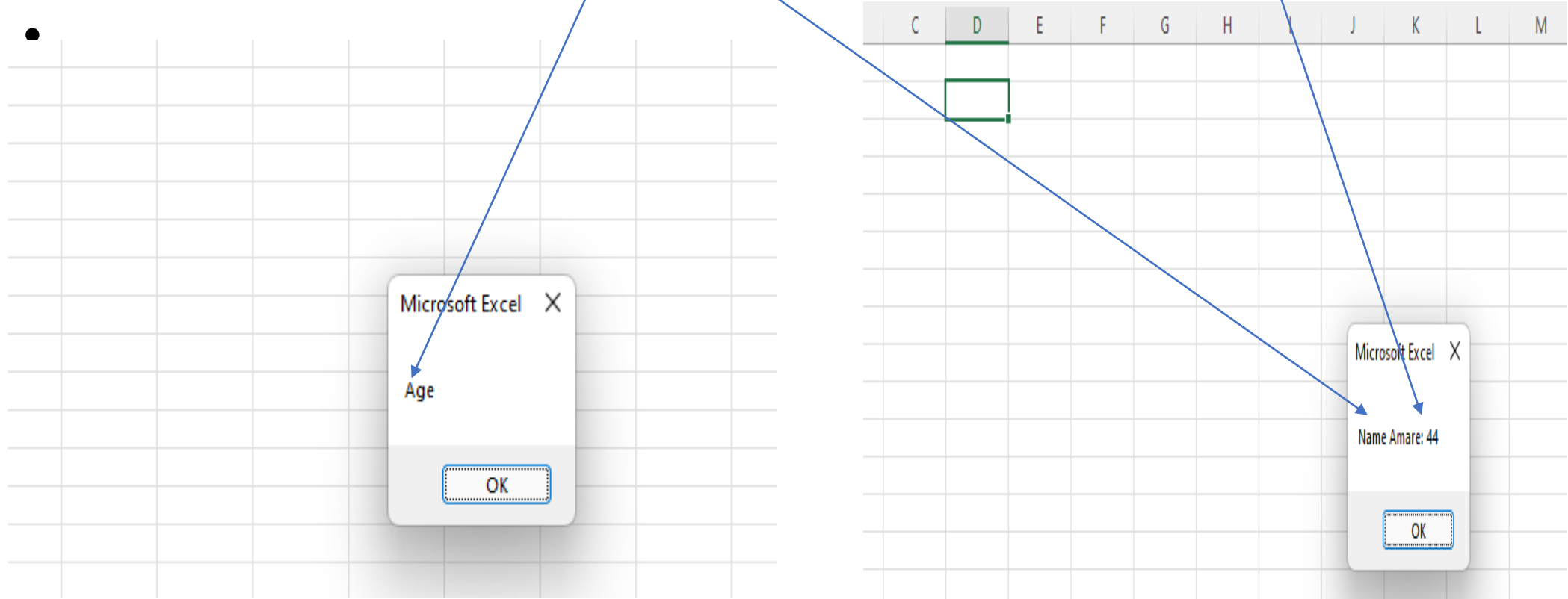
After Macro Run-- Go to Developer --Visual Basic – VBA Project to insert module



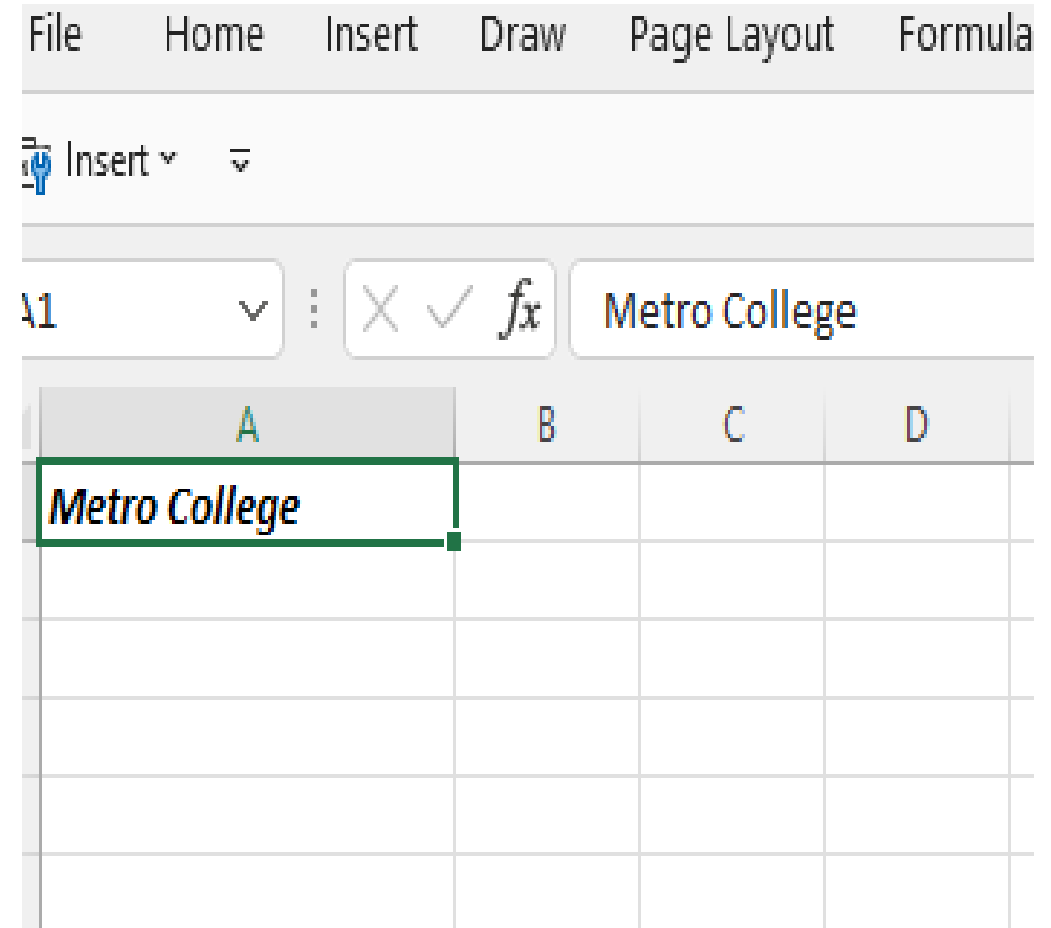
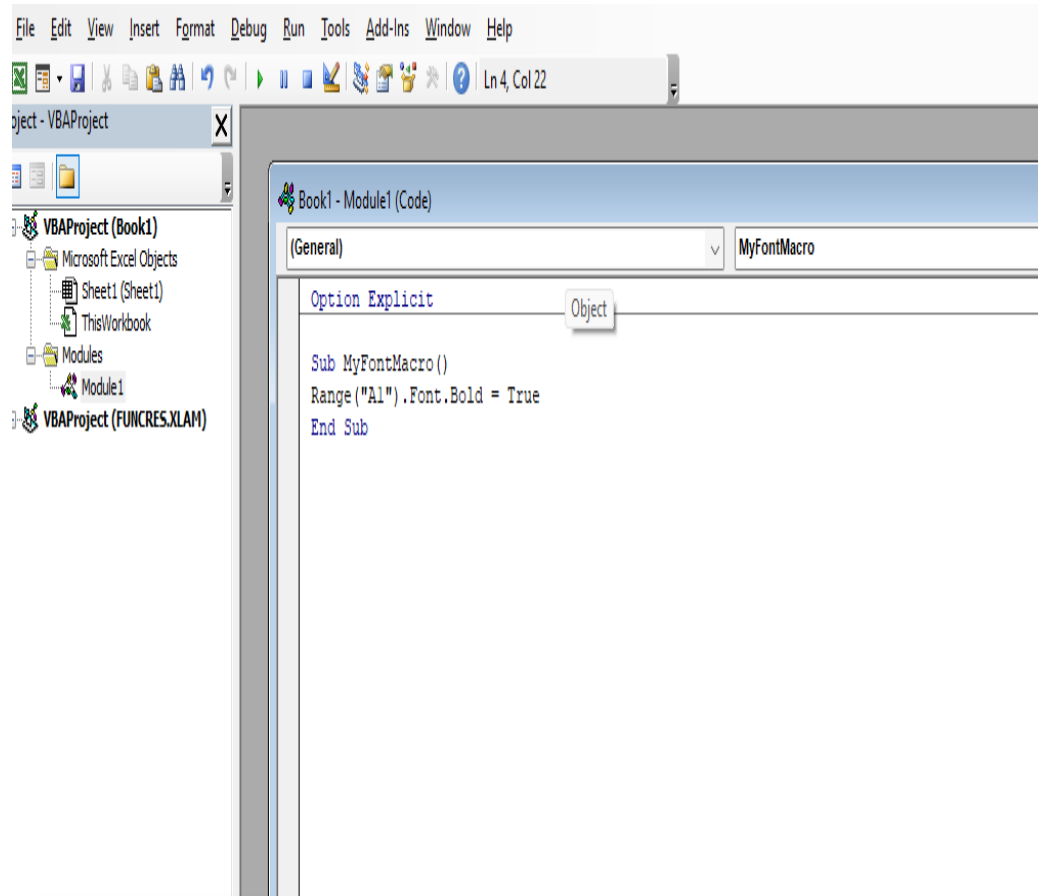
Press the Macro Run Button for the to work on string coding procedure window



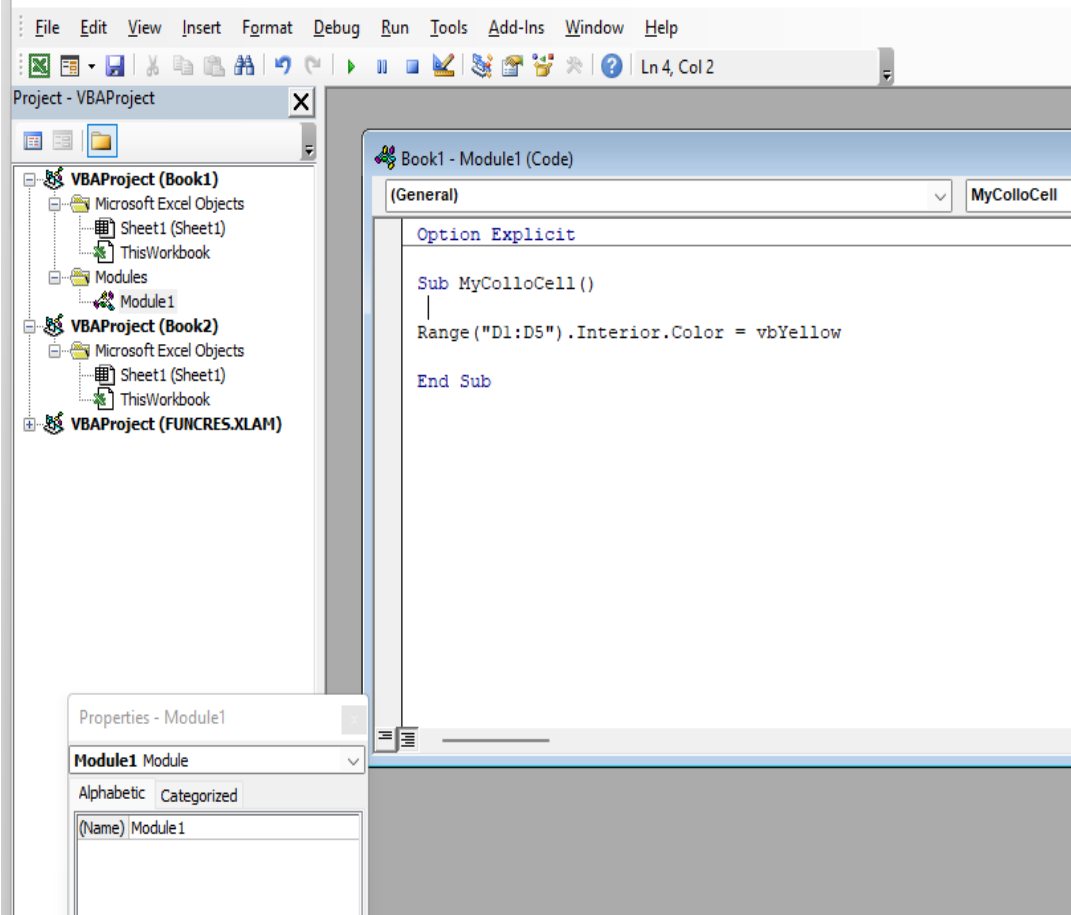
After Run the macro, string and Integer variable appear



5. Create a VBA procedure that changes the font color of table to bold.



6. Create a VBA procedure that adds a yellow explanation column to right of table.(the header of that column is explanation and fill that column by yellow)

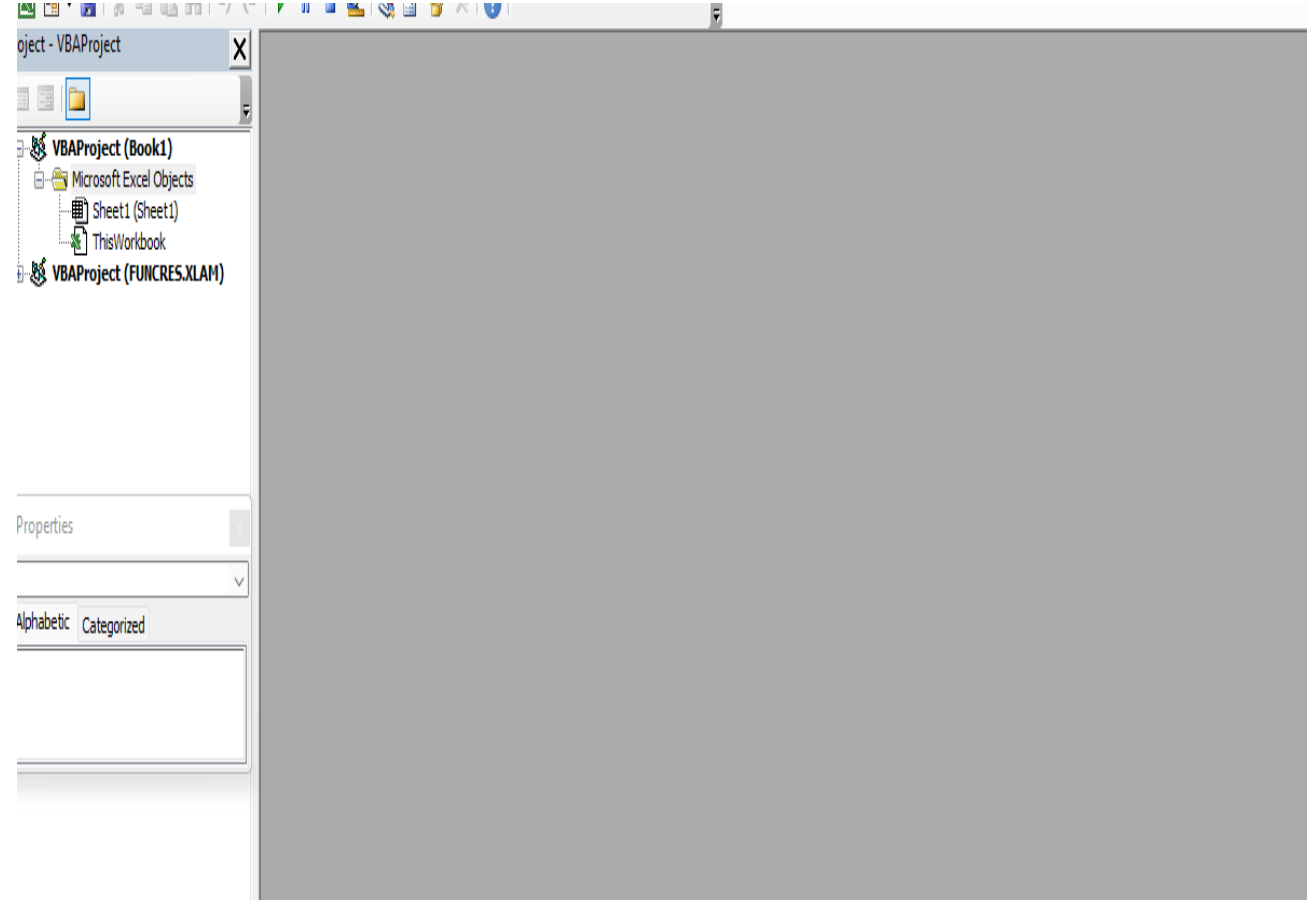
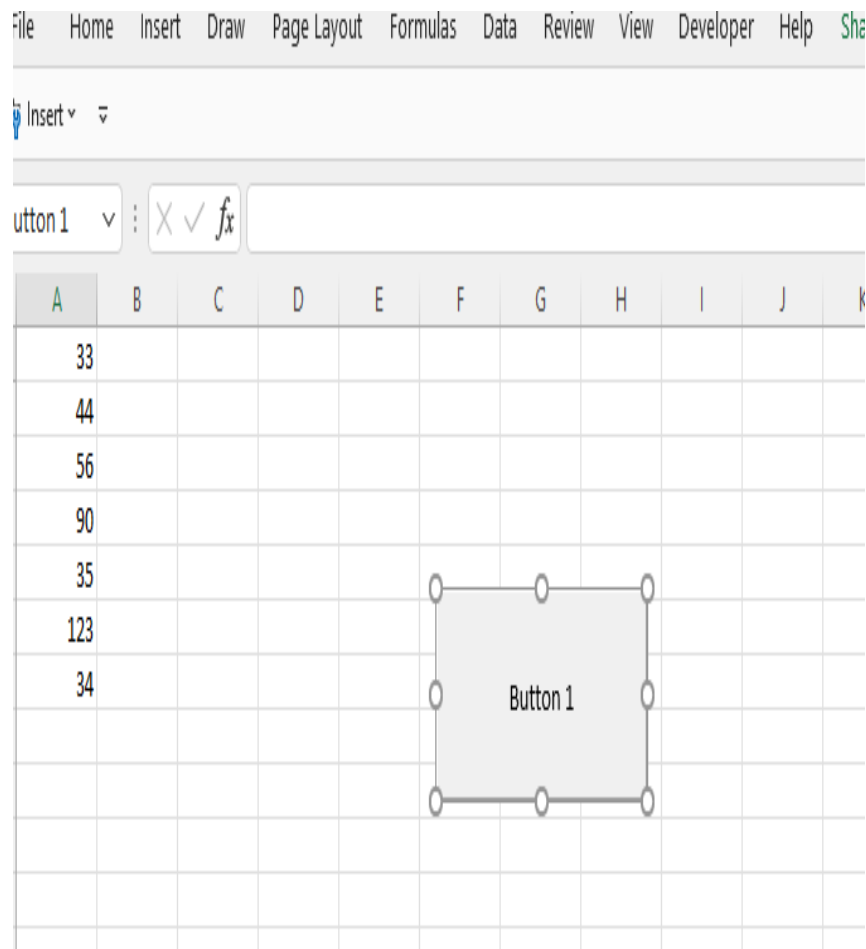


| ID | Room | Course | Semister |
|-----|------|--------|----------|
| 123 | 24 | A2 | 2 |
| 124 | 21 | D4 | 1 |
| 125 | 12 | G1 | 4 |
| 126 | 12 | CC | 5 |

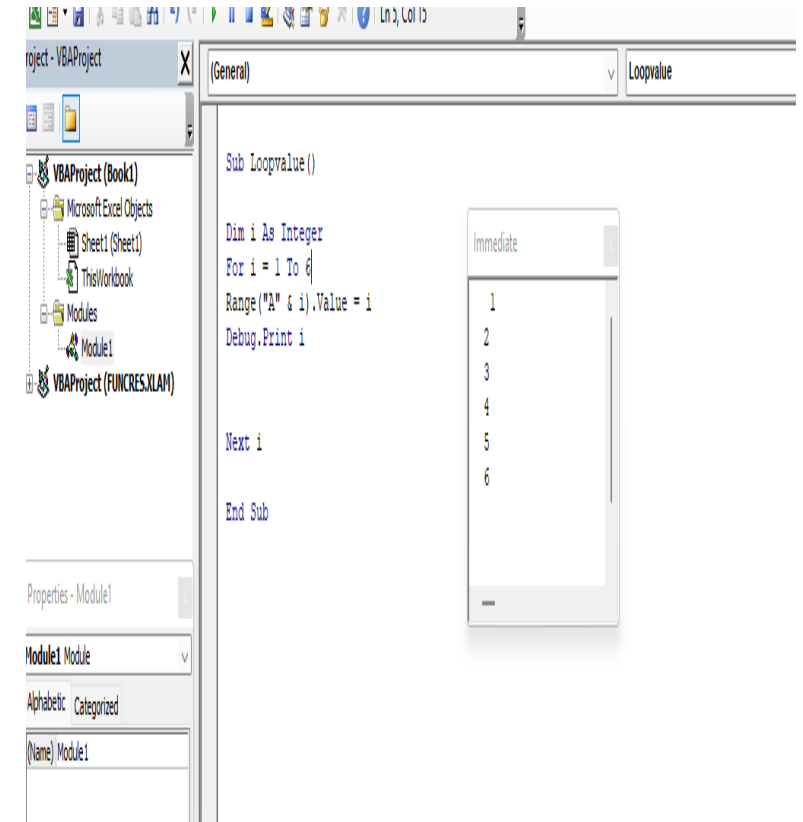
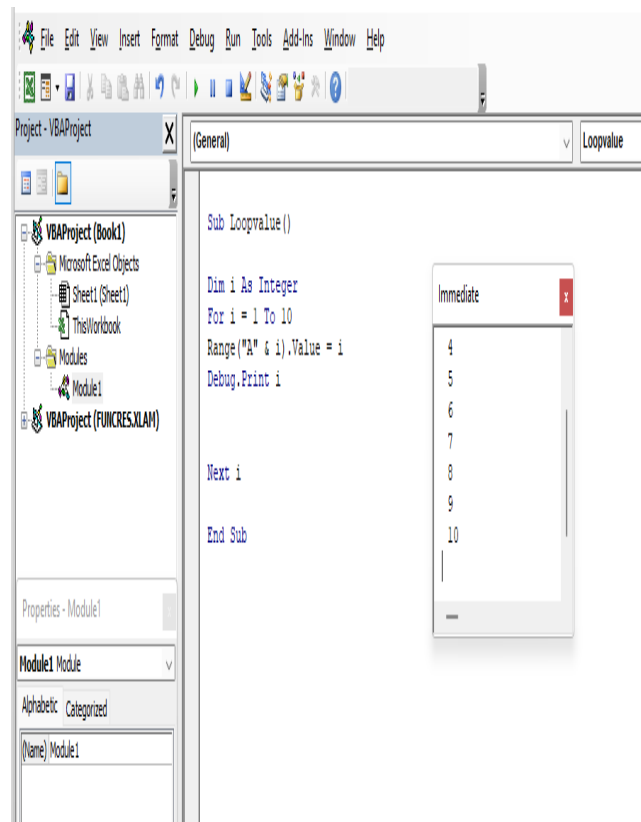
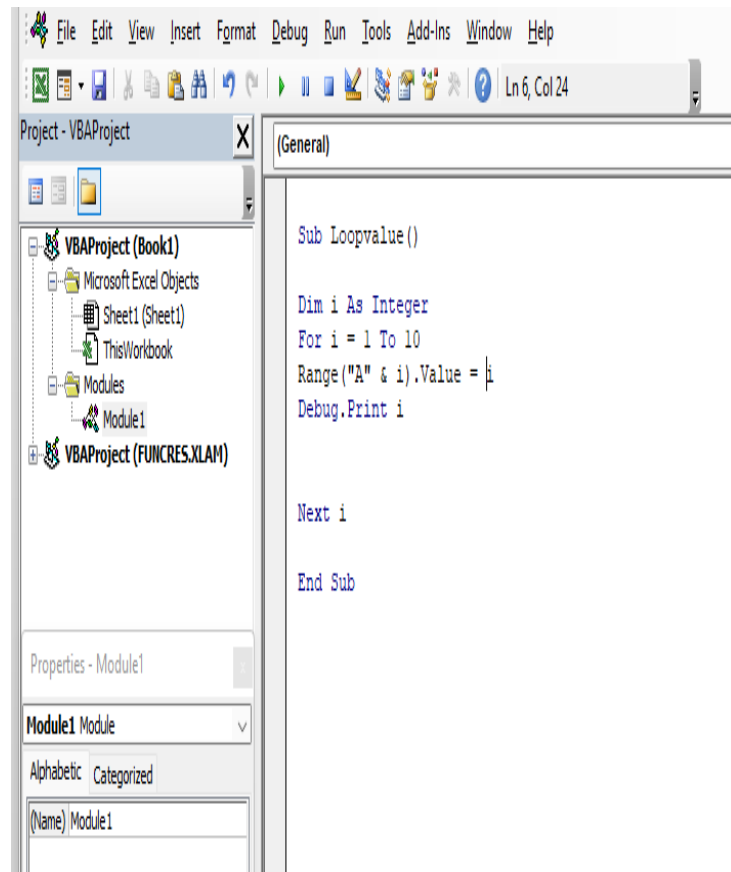
7. Create a VBA procedure that uses loop

- loops are a programming concept that allows a program to repeat itself. They help to refactor your code, reducing the number of specifically-coded actions that are written to help improve the speed and efficiency of your applications.
- Loops are flexible tools, giving you the option to repeat a certain action (such as changing cell values) a set number of times. A loop could also be combined with other statements, such as For and If, that help to determine how often, and for how long, a script should run.

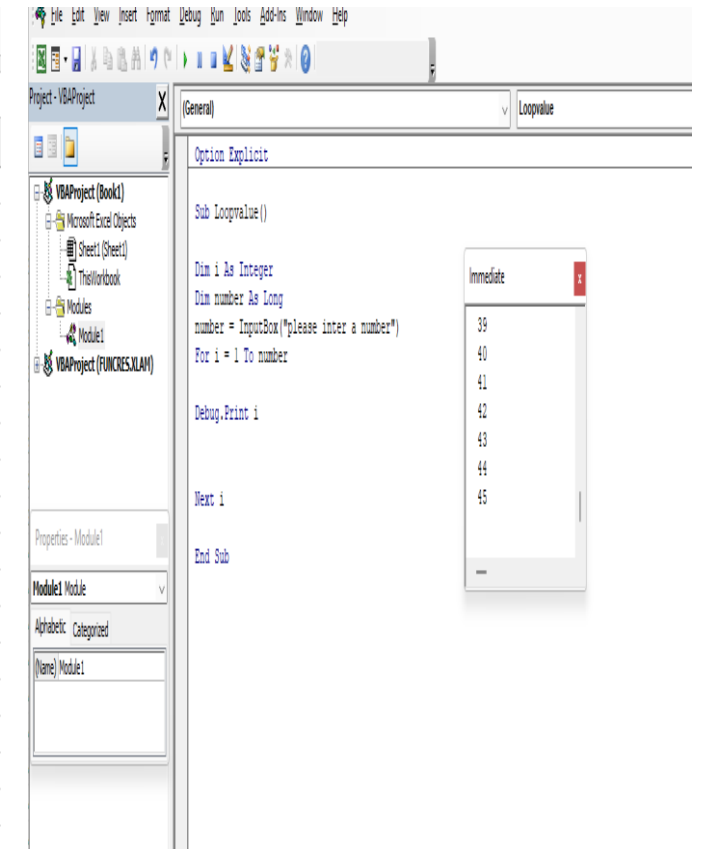
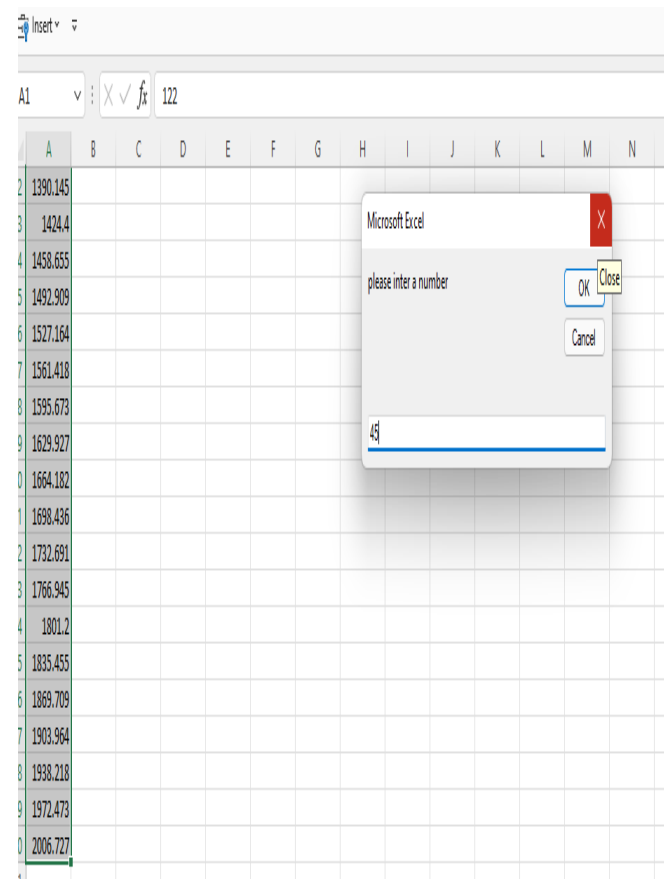
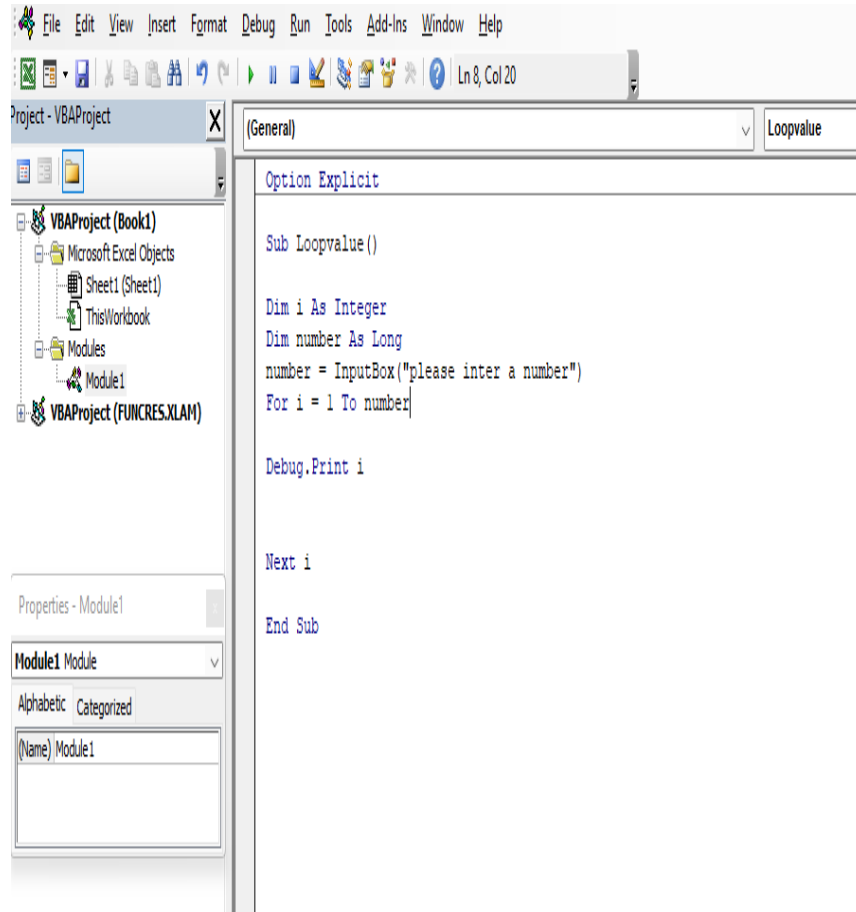
assigning macro loop and opening VBE to Insert module for procedure



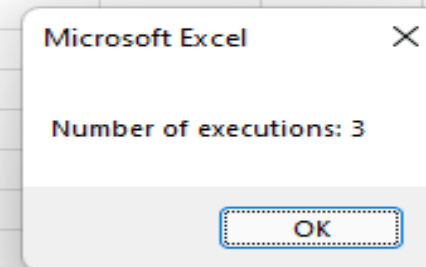
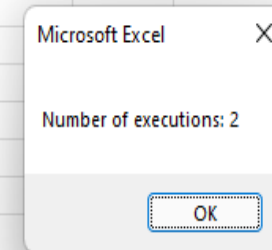
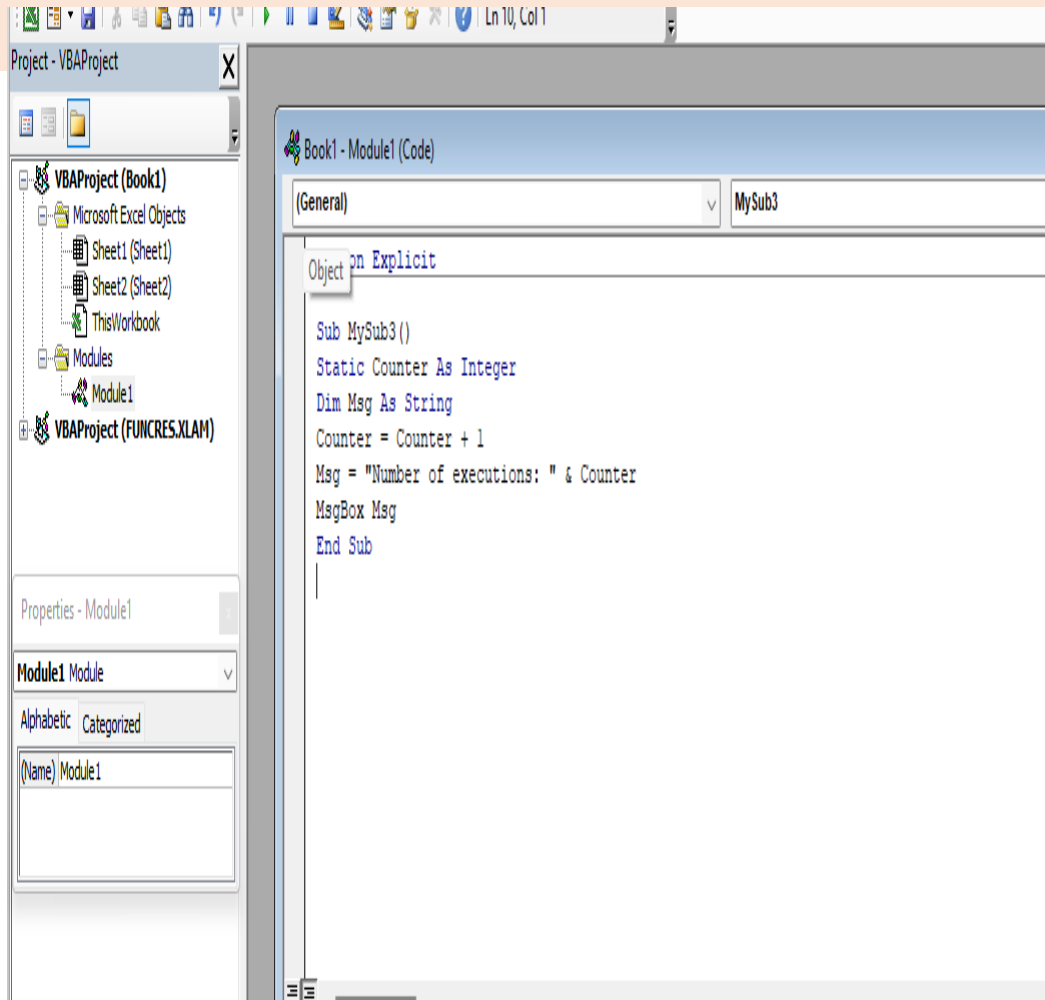
Loop procedure Coding for 1 to 10 small and long ranges loop



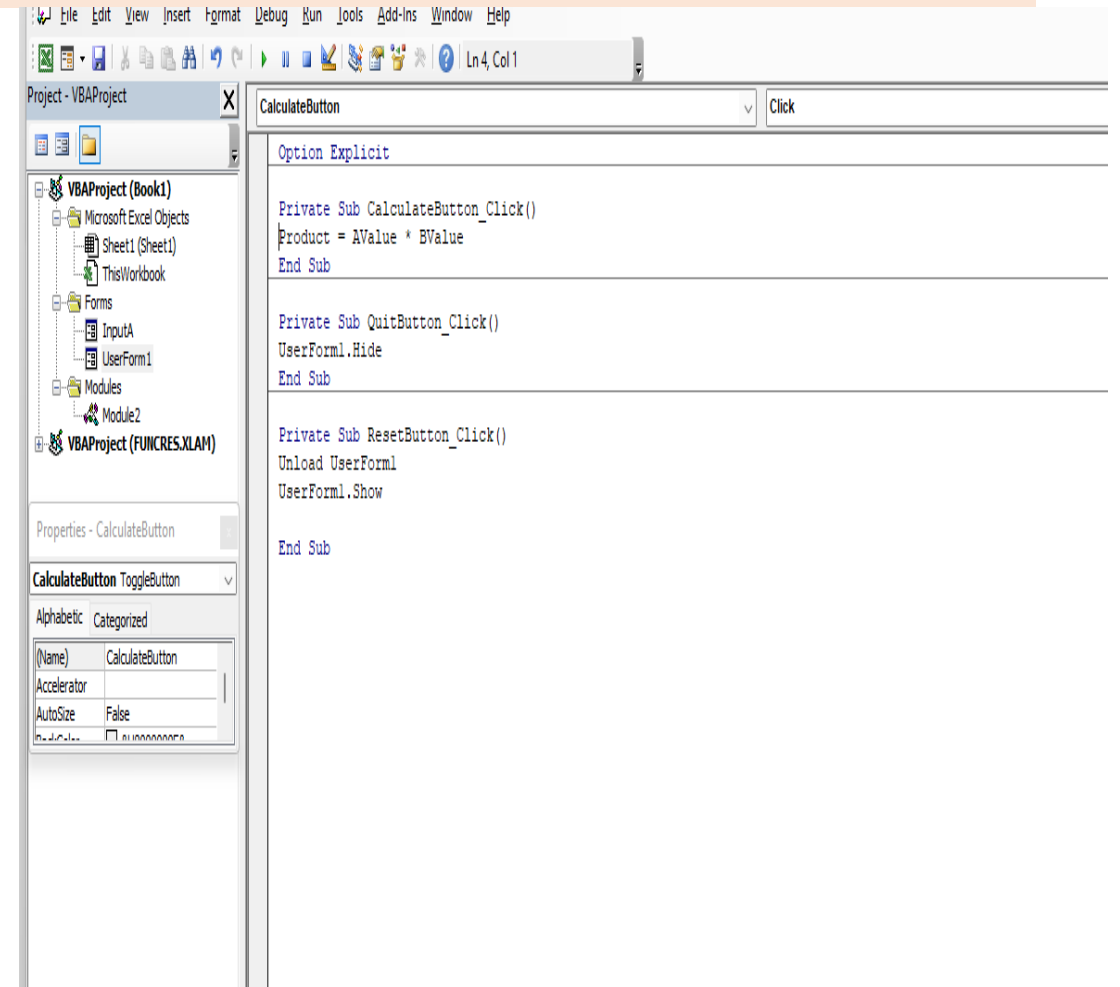
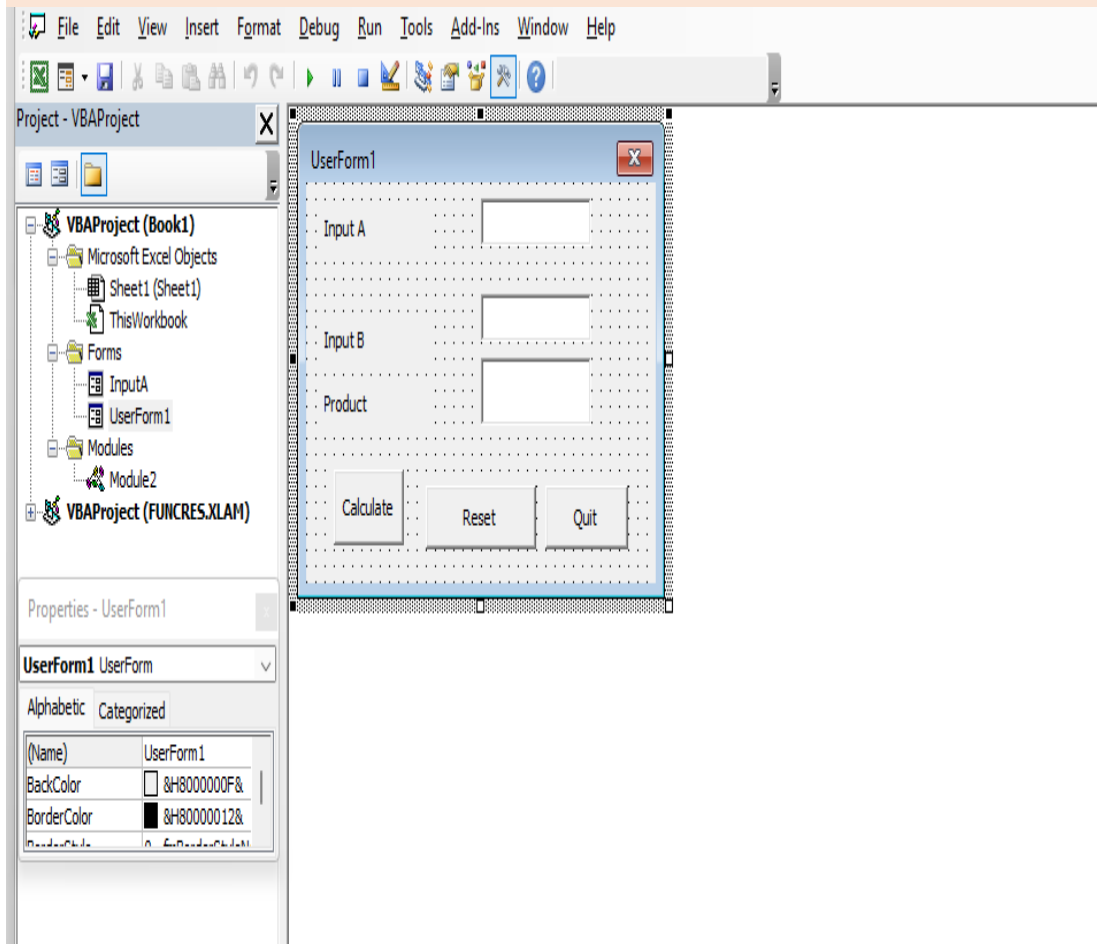
Lookup coding module for long integers



8. Create a message box that displays number of executions of one procedure



9. Create a user Form that has two text boxes and a button to calculate sum and show it in a message box.



Two text boxes and a button to calculate sum Cont'd

The image displays two sequential screenshots of a VBA UserForm titled "UserForm1".

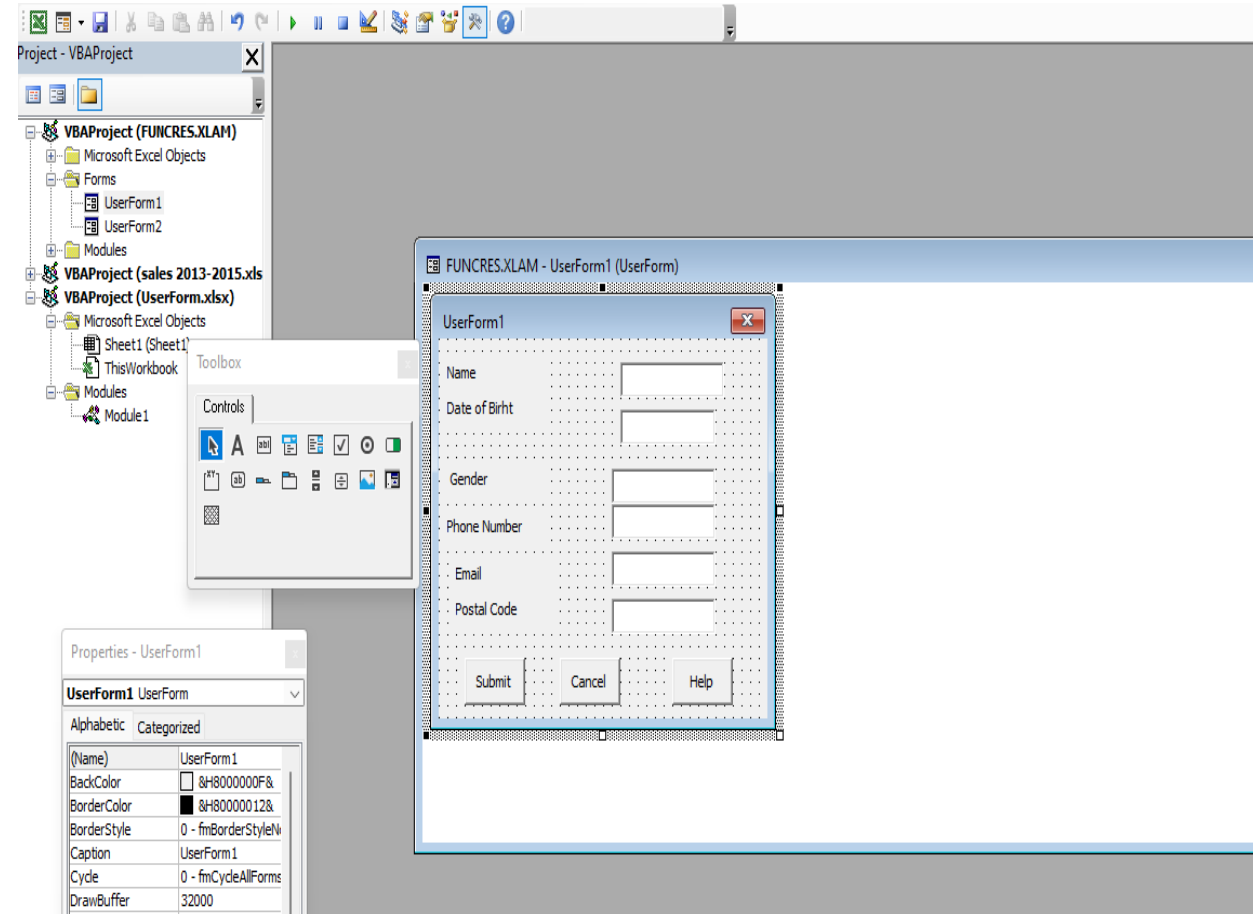
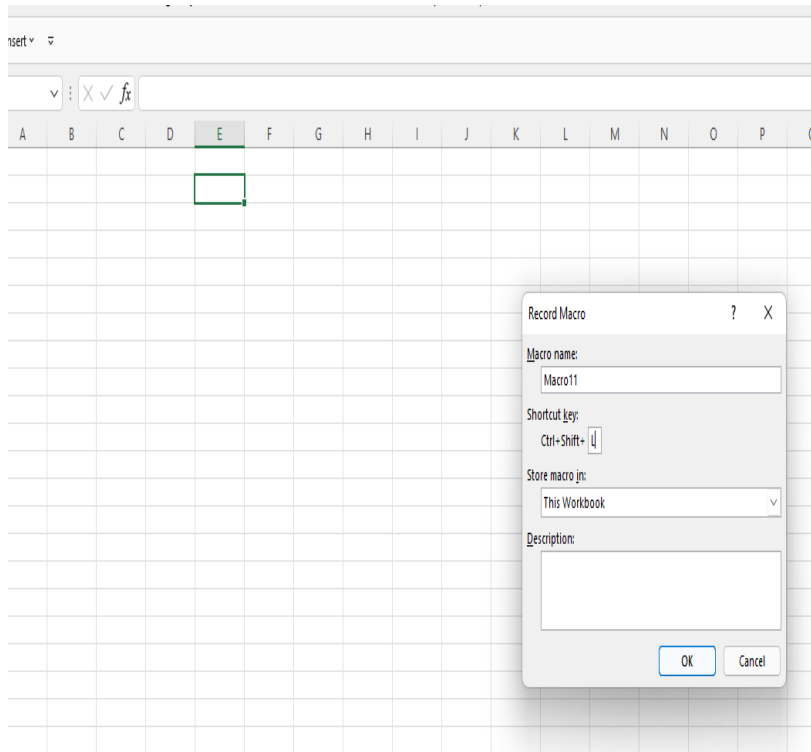
Left Screenshot (Initial State):

- Input A:** Contains the value "3".
- Input B:** Contains the value "3".
- Product:** The text box is empty.
- Buttons:** "Calculate", "Reset", and "Quit" are visible at the bottom.
- Background:** A spreadsheet grid is visible with a "Go" button on the left.

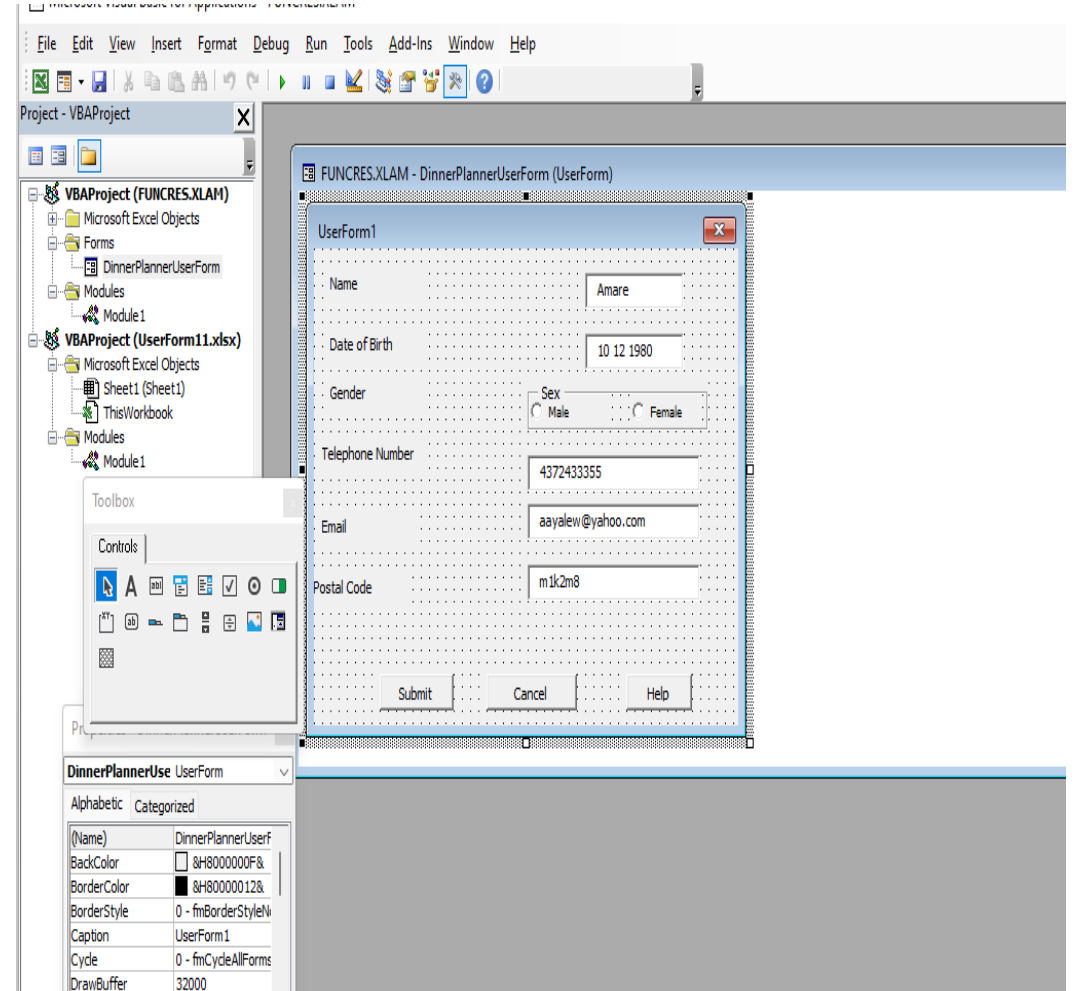
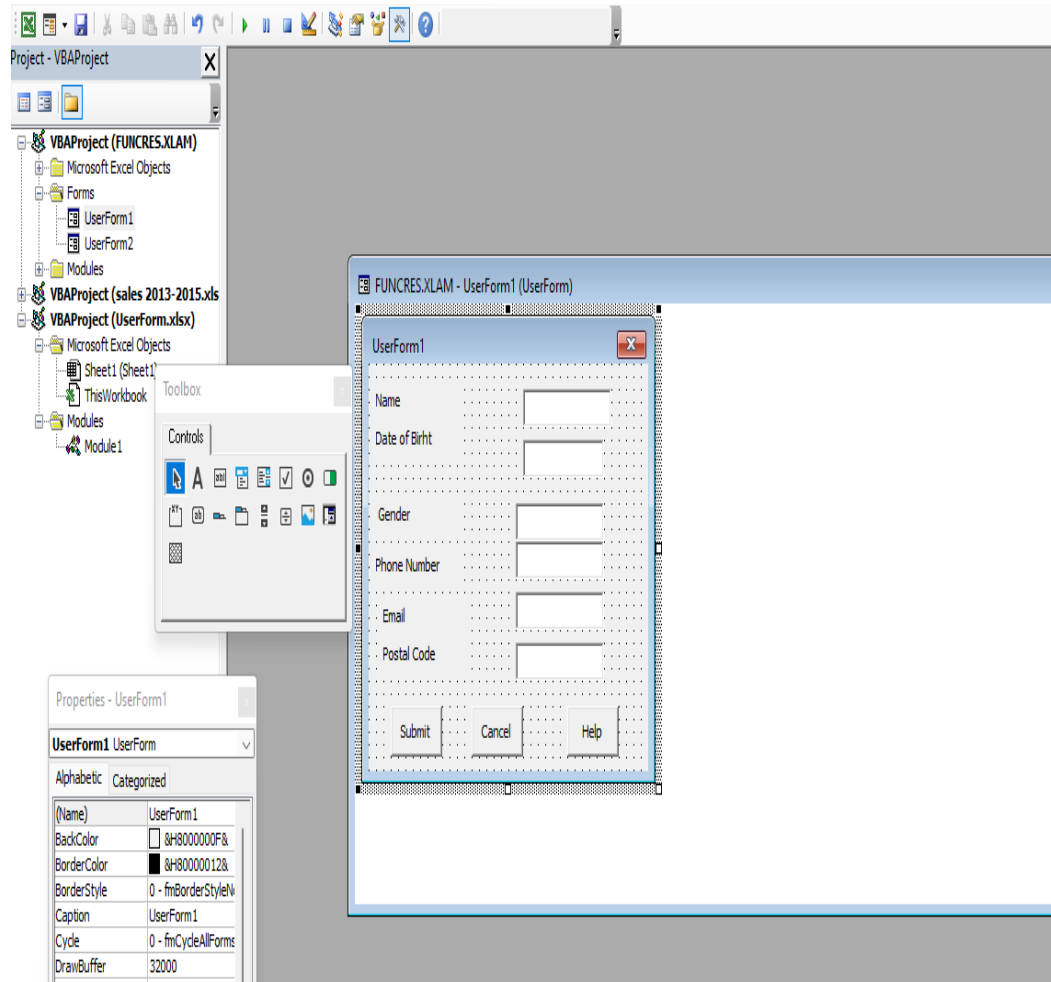
Right Screenshot (After Calculation):

- Input A:** Contains the value "3".
- Input B:** Contains the value "4".
- Product:** Contains the calculated value "12".
- Buttons:** "Calculate", "Reset", and "Quit" are visible at the bottom.
- Background:** The same spreadsheet grid is visible with the "Go" button.

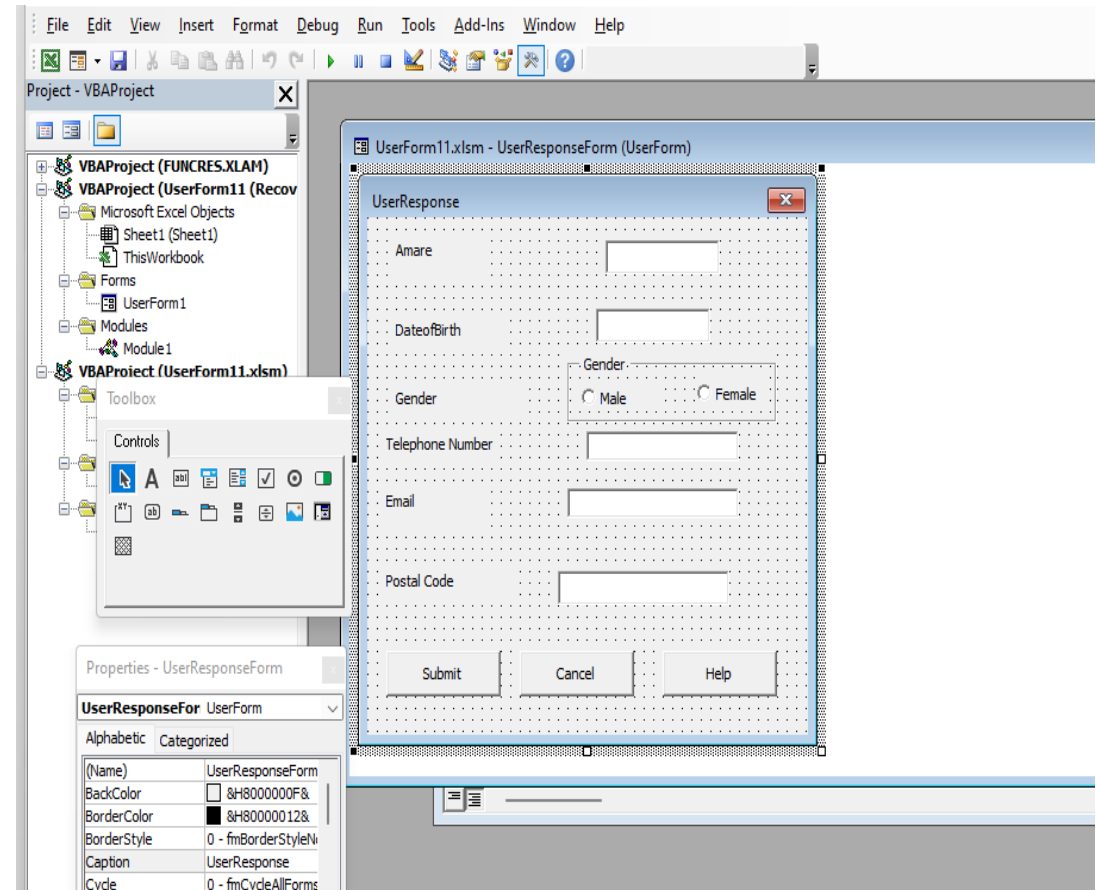
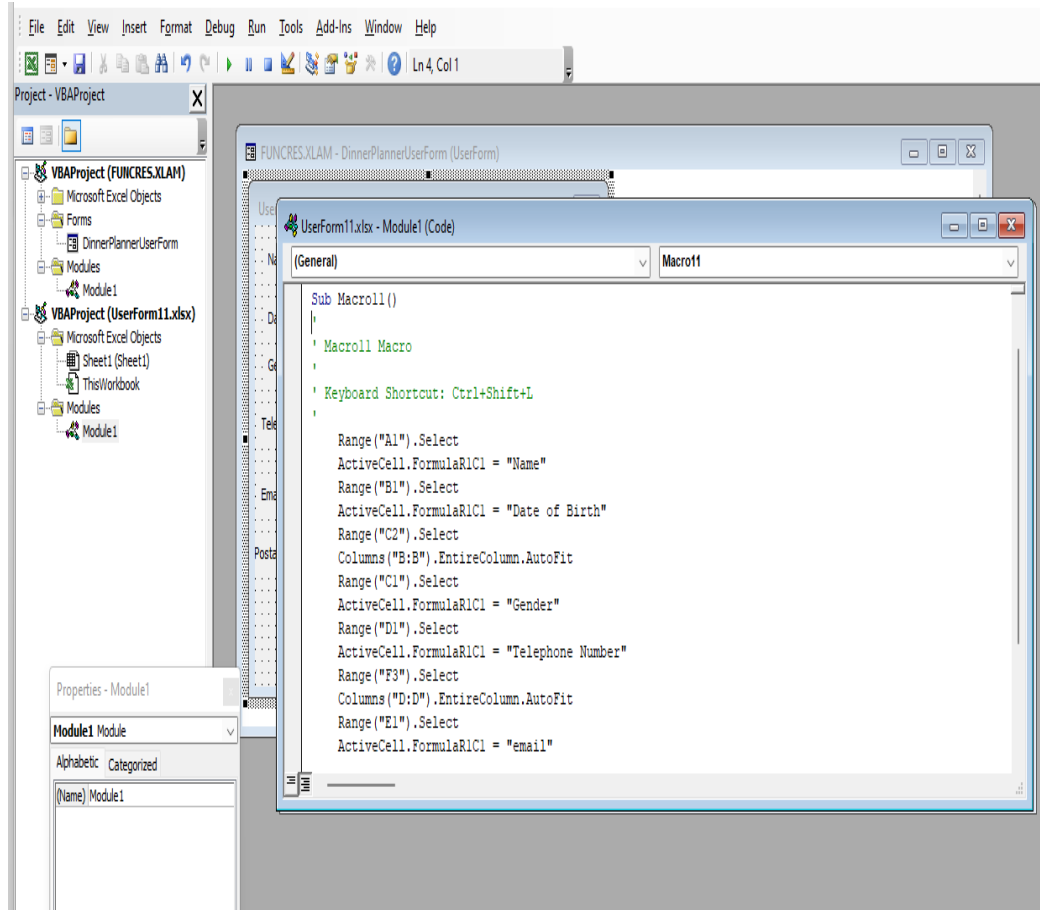
10. create a User Form in Excel VBA to get name , date of birth , gender, telephone number, email , and postal code from the user and store the value provided by the user in the worksheet



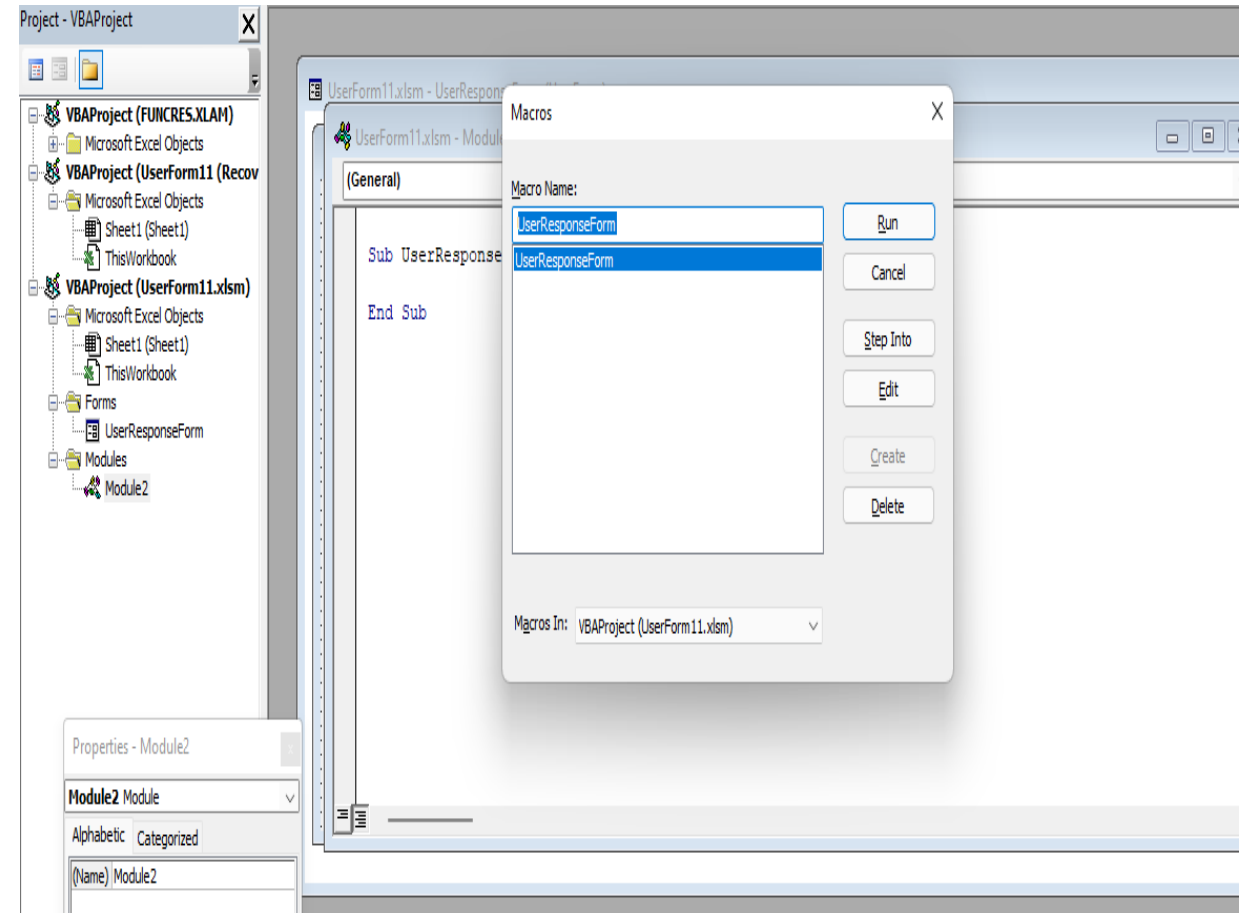
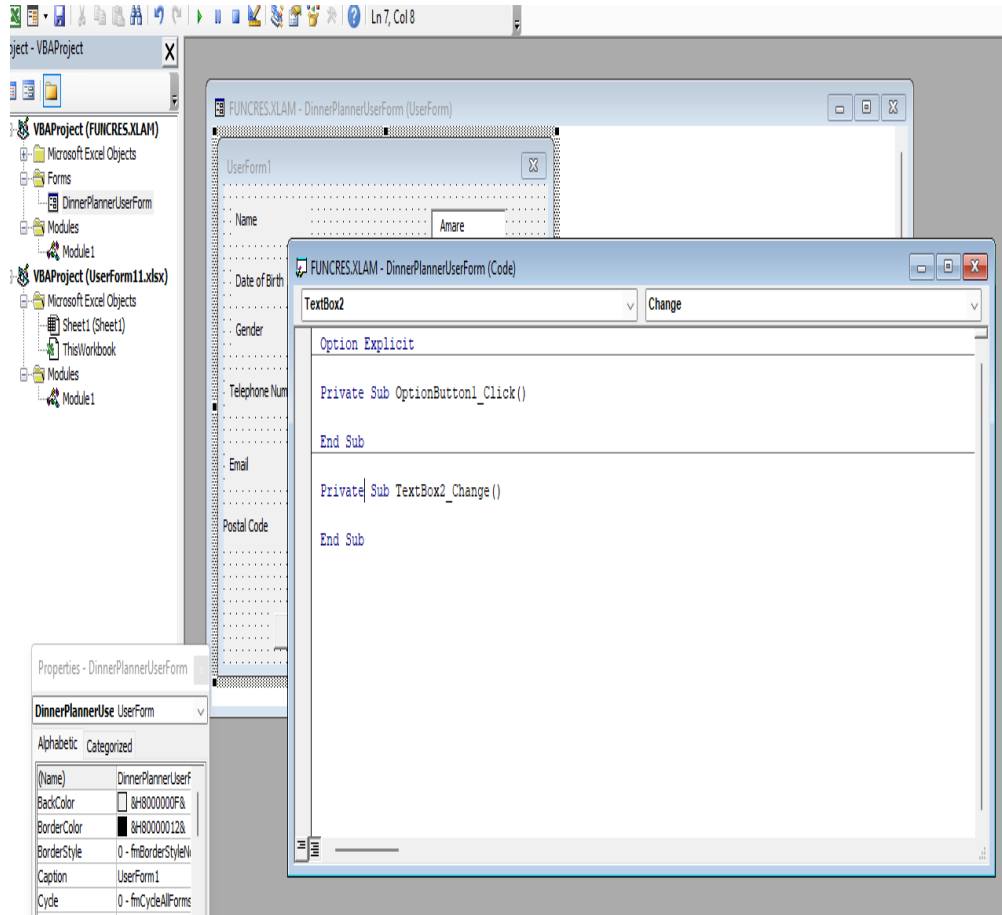
Cont'd



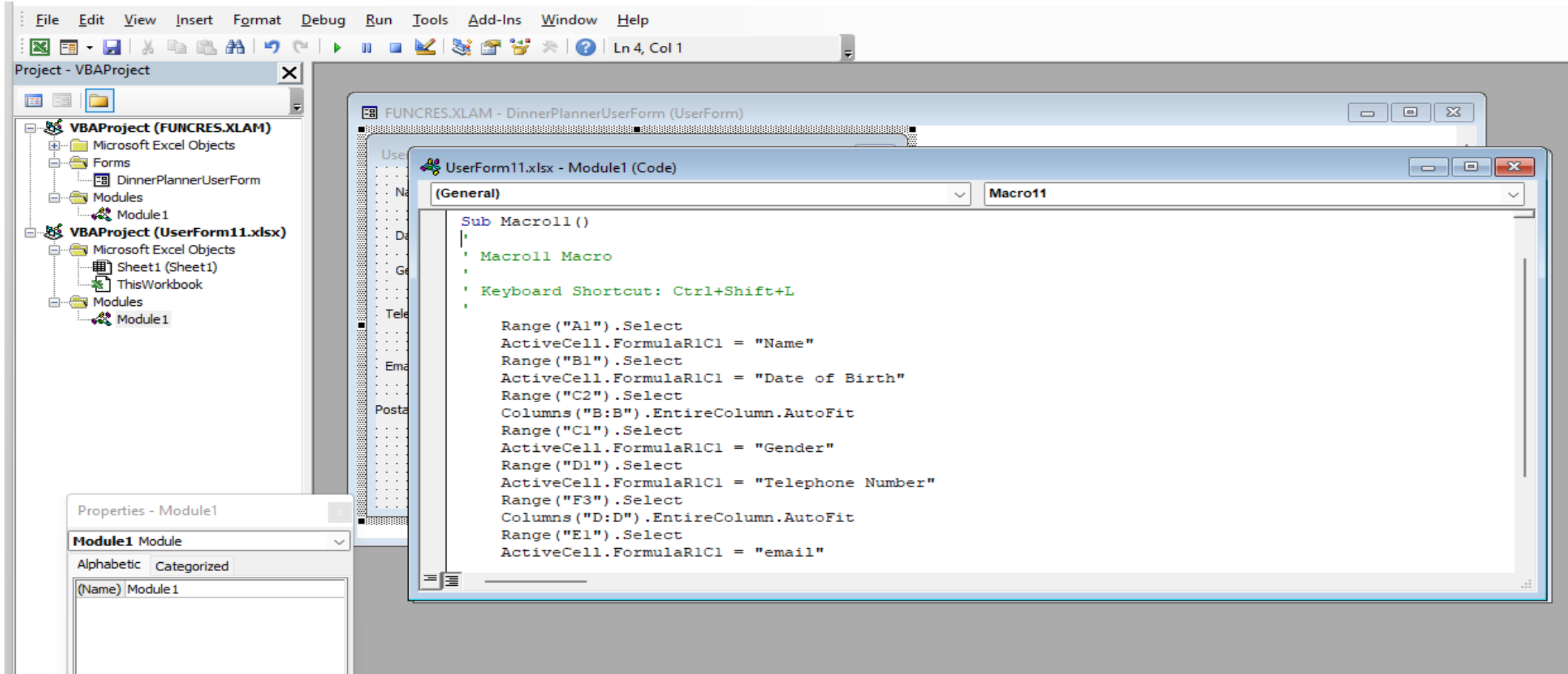
Cont'd



Dialog Box on the module form Macro



Code for initiation



Conclusion

1. The company have been sold the greatest sales in 2015 and Parker was sold more products followed by Lee.
2. The company sales increased by 4.67% in 2015 in relation with 2014 sales. In each year(2013 & 2015) April is the good sales season and customers had some preference for some products.
3. The company have been more sales in the central region in both 2013 and 2015 years and has much more sales difference than other regions.
4. Ice-cream is the maximum sold product by the company in 2013 and 2015

Recommendations

- The company must promote all the products available for West, south and North sales regions to reach out more customers by differentiating products to customers to build its commutative advantage
- Training salespersons North, West and South sales regions to address new customers and retain royal customers by developing customer driven product features.
- Declaring the best salesperson of the year to acknowledge for employees with maximum sales for the year.
- Maximize the supply of seasonal products to customers by analyzing product attributes before shifting to other competitors.