

## How to Set up a Budget — Advanced Excel — Part B

A budget is probably the most important spreadsheet you can create. A good budget will keep you focused on your ultimate financial goal and help you avoid spending money needlessly. It also can present an ideal case for taking advantage of some of the more advanced features of Excel.

Our Advanced Budget Project is divided into four parts: The Budget itself, a Ledger for keeping track of expenses, a Pivot Table for analyzing expenses, and a Budget Report for comparing actual expenses with the budgeted amounts. Although the parts build on each other, they can be done independently. You can skip a part if you want. Some advanced users may skip the first part, as it reviews a number of the more basic skills in Excel. Of course, if you are in a hurry, you can skip all the parts and simply use the budget file as a budget template. Just use the worksheets with the suffix “2”.



I hope you enjoy, learn from, and/or take advantage of the material here. If you spot a mistake or notice a possible improvement, please let me know.

— Rich Malloy

## Advanced Budget Part B – The Ledger

Having a budget is a great first step. Now we must follow the budget, or at least try to. This means categorizing and adding up perhaps hundreds of expenses throughout the year. As we shall see later, Excel has special functions that will make categorizing and adding a breeze. But first we have to record all the expense data into a table we call the Ledger.

A Ledger is simply a record of all income and expenses. In this project, we will create a ledger for expenses. Later the fun will begin when we conjure up some special magic in Excel to see if we are on — or off — budget.

### Skills Used:

- Format as Table
- Data Validation with a List
- The SUBTOTAL function
- Slicers

### Procedure:

#### Open the Spreadsheet:

- If it is not open already, open the file: [advbudget.xlsx](#)
- Go to the **Ledger** sheet.

#### Set the Ledger Range as a Formatted Table.

- Click any cell in the ledger range of cells.
- Click: **Home > Format as Table**.
  - A gallery of table formats will appear. Again, note that on some large displays, one row of the gallery will already be displayed. You can then display the whole gallery by clicking the More button at the bottom right of the table format buttons.
- Choose a desired format in the Medium group.
- Click the **Table Tools Design** tab.

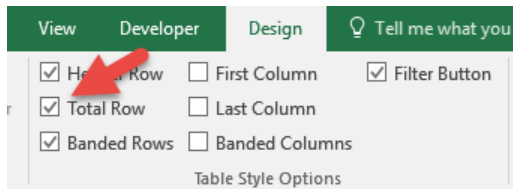
- On the left side of the **Table Tools Design** tab, change the **Table Name** to **ExpLedger**.

### Format the Dates and Dollar Amounts

- Select all the date cells in column **A**.
  - Shortcut: Click the first cell. Then press Ctrl + Shift + ▼ (the down arrow key).
- Right-click one of the cells and choose **Format Cells...**
- In the **Format Cells** dialog box, be sure the **Number** tab is selected.
- Choose the **Date** category and the format: **3/14**.
- Select all the number cells in column **D**.
- Right-click one of the cells and choose **Format Cells...**
- In the **Format Cells** dialog box, be sure the **Number** tab is selected.
- Choose the **Number** category.
- Set the format with 2 decimal places and use the 1000 separator.

### Add a Total Row.

- Click the **Table Tools Design** tab.
- Click the check box for **Total Row**.



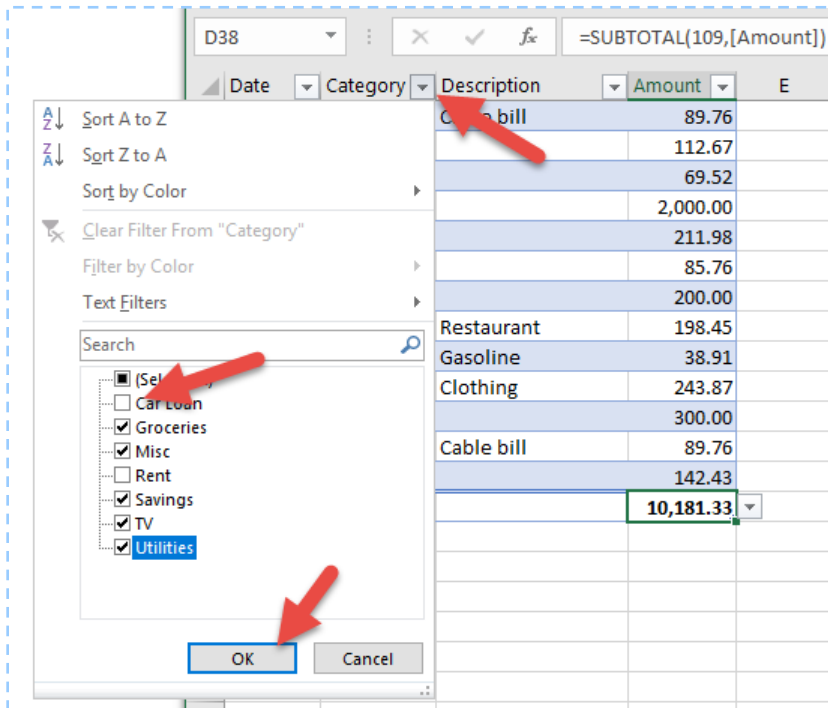
- A cell with a **Sum** formula should appear at the bottom of the **Amount** column.

3/27 TV	Cable bill	89.76
3/14 Groceries		142.43
<b>Total</b>		<b>10,181.33</b>

### Filter the Table by Category and Date.

- Unlike the case with our Budget, the filter buttons in our Ledger actually do serve a purpose.
- Click the filter button for **Category**.
- Clear some of the **Category** check boxes and click **OK**.

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- Note how the **Total** changes.
- Click the filter button for **Category** again.
- Click the check box for **Select All** and click **OK**.

### Add New Entries at the Bottom of the Table.

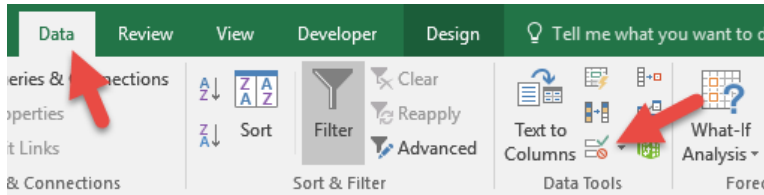
The Total row is handy, but it makes it difficult to add new rows to the bottom of the table. As we spend more money throughout the year, we will unfortunately be adding quite a few more rows to our table. We certainly want to make that process as easy as possible, which means we must remove the Total row. But, we can replace it with something better.

- Click the **Table Tools Design** tab.
- Clear the check box for **Total Row**.
- Click the empty cell under the last date in the table.
- Type the date **4/15** and press **Tab**.
- Note that a new formatted row appears at the bottom of the table.

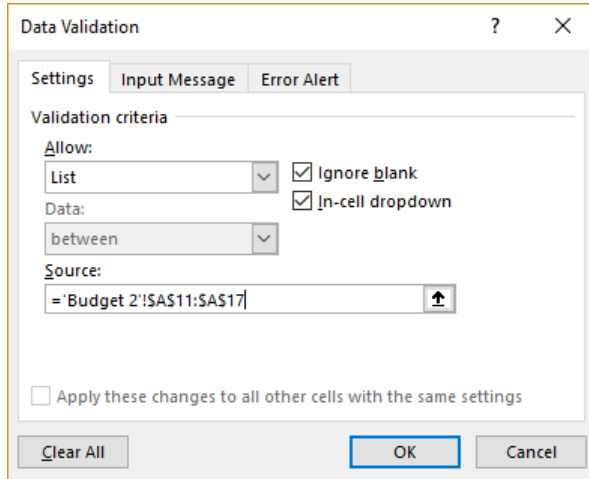
### Use Data Validation to Make it Easy to Add Categories:

Now it is easy to add an expense to your table, but if you accidentally misspell a category, it could cause problems later in our Budget Report. To keep that from happening—and to make it much easier to enter categories—we are going to use a secret Excel tool called Data Validation. With this tool, you can enter a category simply by choosing it from a drop-down list.

- Select all the cells in the **Category** column (excluding the column header at the top).
  - Shortcut: Click the first cell. Then press **Ctrl + Shift + ▼** (the down arrow key).
- In the **Data** tab, click the **Data Validation** button.



- In the **Allow** box, click the list arrow and choose **List**.
- Click in the **Source:** box, and then click the **Budget 2** sheet tab.
- Select the expense category names in column A (excluding the column header at the top and the “Total” at the bottom).



- Click **OK**.
- Click the **Category** cell in the new row you added.
- A drop-down list should appear.
- Click any of the options in the list.

### Use a Dynamic List with Data Validation:

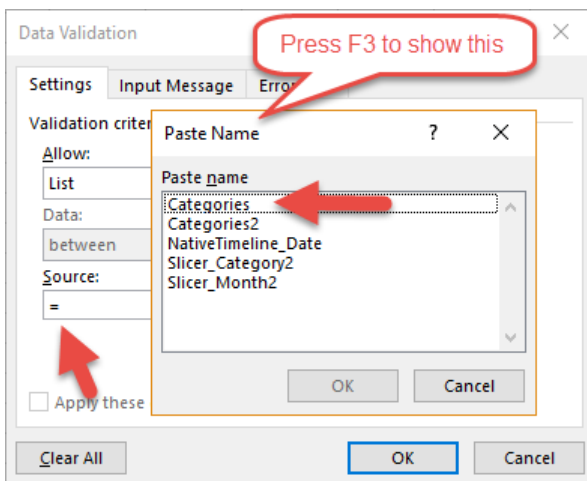
The list we just created with Data Validation is fantastic, but it is static. It simply refers to explicit cell references, A11:A17. If we later add a new category at the bottom of our budget, that new category might be outside this cell range, and then might not automatically appear in our data validation list. But, don't worry. One of the great things about formatted Excel tables is that they are dynamic. We can make use of this by creating a dynamic named range, which we can then use in our data validation list.

- Click the **Budget 2** sheet tab.
- In column **A** select the category names, excluding the column header at the top in the Total label at the bottom.
- In the **Name Box** at the upper left, type **Categories**

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Categories									
A	B	C	D	E	F	G	H	I	
8									
9	<b>Expenses</b>								
10	<b>Category</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr</b>	<b>May</b>	<b>Jun</b>	<b>Total</b>	<b>% of Total</b>
11	Rent	2,000	2,000	2,000	2,000	2,000	2,000	12,000	48.4%
12	Auto Loan	300	300	300	300	300	300	1,800	7.3%
13	Utilities	250	250	250	200	150	150	1,250	5.0%
14	Groceries	900	900	900	1,100	900	900	5,600	22.6%
15	TV	150	150	150	150	150	150	900	3.6%
16	Savings	202	202	202	202	202	230	1,239	5.0%
17	Misc	250	250	400	500	200	400	2,000	8.1%
18	<b>Total</b>	<b>4,052</b>	<b>4,052</b>	<b>4,202</b>	<b>4,452</b>	<b>3,902</b>	<b>4,130</b>	<b>24,789</b>	<b>100.0%</b>
19									

- The name **Categories** now refers to the dynamic range in the Expense Budget table. As new categories are added to the budget, they will automatically be included in the named range **Categories**.
- Click the tab for the **Ledger** sheet.
- Select all the categories in the **Category** column, excluding the column header.
- In the **Data** tab, click the **Data Validation** button.
- In the **Allow** box, click the list arrow and choose **List**.
- Click in the **Source:** box, type = and then press the **F3** key.
- A list of names will appear.



- Click **Categories**.
- Click **OK**.

Now when you click in any of the Category cells, a list arrow will appear at the right. If you click the arrow, you can choose from all the allowable categories.

### Add SUM and SUBTOTAL Formulas above the Table.

Instead of putting a total row at the bottom of our table, it is sometimes better to put the total at the top of our table, where it is easier to see.

- Insert three blank rows at the top of the table.
  - Right-click the row label **3** and choose **Insert**.
  - Press the function key **F4**.

- Press the **F4** key again to repeat the action once more.
- In cell **C4** enter a label: **Grand Total**
- in cell **D4** enter a formula that will sum up all amounts.
  - Formula: **= SUM(ExpLedger[Amount])**
  - Note that as you type the names, Excel will automatically complete the names.
- In cell **C3** enter a label: **Filtered Total**.
- In cell **D3** enter a formula that will add up the displayed amounts.
  - Formula: **= SUBTOTAL(109, ExpenseLedger[Amount])**
  - The code **109** tells Excel to do a conditional **SUM**, adding up only those numbers that are displayed by any filters that happen to be in place. [Click here to see all the possible codes.](#)
- Use the Format Painter button to copy the format from cell D4 to D3.
- Use the filter buttons to filter the table by **Category** and notice how the totals change.

2				
3			Filtered Total	4,181.33
4			Grand Total	10,181.33
5				
6	Date	Category	Description	Amount
8	1/4	Groceries		87.95
9	1/7	Misc	Clothing	67.32
10	1/10	Utilities		221.21

### Add a Column at the Right to Show the Month Name.

To see if we are “on budget” we will need to filter our data not just by Category but also by month. The easiest way to do that is to add another column to our ledger table that will display the month of each expenditure.

- Click the cell to the right of the column header **Amount**.
- Type: **Month**
- Click the cell below the label **Month**.
- Type: **= text(**
- Click the cell containing the date in that same row.
- Enter: **, "mmm")**
- The code **mmm** instructs **Excel** TEXT function to display the three-letter abbreviation of each month.

5					
6	Date	Category	Description	Amount	Month
8	1/4	Groceries		87.95	=text([@Date],"mmm")
9	1/7	Misc	Clothing	67.32	
10	1/10	Utilities		221.21	

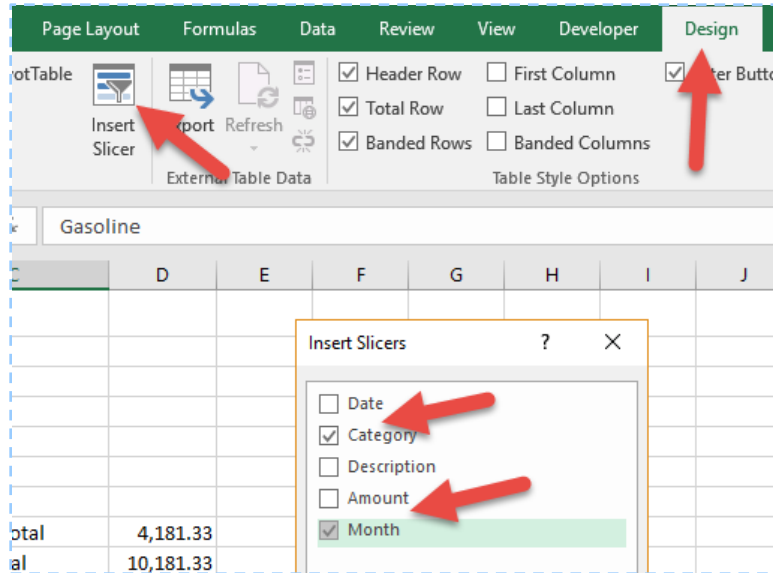
### Add Slicers to Filter the Table.

Filter buttons are nice, but Microsoft has recently provided an amazing feature that makes filtering data immeasurably easier: Slicers.

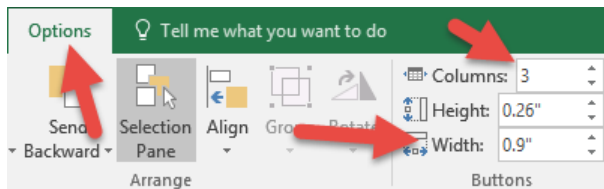
- Right-click the row label **3**.
- Choose: **Insert**
- Use the **F4** key to repeat the above 5 times.
- Add a **Slicer** for **Category** and **Month**.

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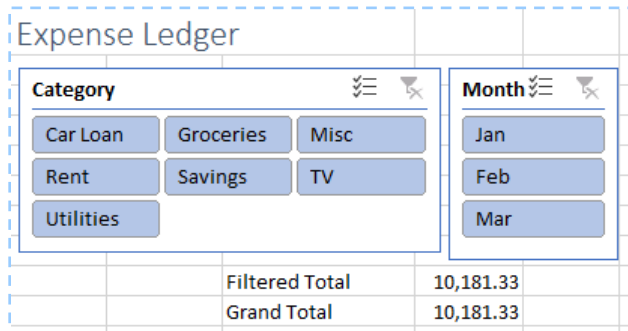
- Click any cell in the Expense Ledger table.
- In the **Table Tools Design** tab, click **Insert Slicer**
- Click the checkboxes for **Category** and **Month**.



- Two rectangles will appear on the spreadsheet.
- Use the sizing handles of the **Month** Slicer to adjust the size so that it is only large enough to display the three buttons in the names of the months.
- Click the **Category** Slicer.
- Click the **Slicer Tools Options** tab.
- Click the **Columns** box and type **3**
- Adjust the width of the buttons to **0.9 inch**.



- Use the sizing handles of the **Category** Slicer to remove any wasted space. Drag the slicers to the empty space above the table.



- Click one of the **Category** buttons and one of the **Month** buttons.
- Note how the display and the total changes. Use the **Control** and **Shift** keys to display more than one **Category** or **Month**.

## Advanced Budget Part B – The Ledger

That's it! Our Ledger is done. It should look pretty much like the ledger on the sheet Ledger 2. Now comes the hard part: recording all our expenditures. But the job will be a lot easier knowing that we are taking advantage of some really powerful Excel features!



**Conclusion:**

If you have followed parts A, B, and D of this project, you have created a simple, yet powerful budget spreadsheet. Part C, the Pivot Table, is optional, but could be useful for analyzing spending habits.

In the process of creating our budget, we've used a number of advanced Excel tools. Be sure to use them in other projects, as they can save you quite a bit of time.