Pivot Tables in Google Sheets

Start your lab

1. When you are ready, click **Start Lab**.

   The Lab Details pane appears with the temporary credentials that you must use to sign into Gmail for this lab.

   If you need to pay for the lab, a pop-up opens for you to select your payment method.

2. Click **Open Google Sheets**.

   The lab spins up resources, and then opens another tab that shows the Sign in page.

   Tip: Open the tabs in separate windows, side-by-side.

3. If necessary, copy the **Username** below and paste it into the **Sign in** dialog:

   ```
   student-01-84d600a94535@qwiklabs.net
   ```

4. Click **Next**.

5. Copy the **Password** below and paste it into the **Welcome** dialog:

   ```
   OYU4Hq4r9a3a
   ```

6. Click **Next**.

7. Accept all terms and conditions as prompted.

Google Sheets opens and you are signed in to your Student Google Account.

Task 1. Customize a sheet

In this task, you customize a sheet by applying formatting to cells, rows, and columns.

Import a spreadsheet

1. Click On the Rise Bakery Web Traffic to download a spreadsheet.
   The spreadsheet includes data for the 25 cities with the highest number of visitors to the food blog for On The Rise Bakery. Note that this is an Excel spreadsheet, not a Google Sheets file.

2. In the left panel of the lab instructions, right-click **Open Google Sheets**, and then click **Open link in incognito window** to sign into your student account.

3. In the top left, under **Start a new spreadsheet**, click **+** to open a blank spreadsheet in a new browser tab.

4. At the top, click **File** > **Import**.

   The **Import file** dialog opens.

5. Click the **Upload** tab.

6. To upload the file, drag the file from step 1 into the upload window or select the file from your device.

7. In the **Import location** dropdown, select **Replace spreadsheet**, and then click **Import data**.

8. At the top, change the filename from **Untitled spreadsheet** to **On the Rise Bakery Web Traffic**

Text wrapping

Wrapping text lets you show the full contents of a cell without increasing the width of the column.

1. Click the gray **column B** label to select all items in the column.

2. In the toolbar, click **Text wrapping**, and then click **Wrap** (|↵|).

3. To increase the size of a column, mouse over the gray column label until a blue line appears, and then drag your cursor to the right.

Create a new line

Sometimes data must be displayed on separate lines within a single cell. You can create a new line in a cell regardless of whether you're already using text wrapping.

1. In cell C21, place your cursor before the word **East**.

2. To insert a line break, press CTRL+ENTER on your keyboard.

Align text vertically

The vertical align tool lets you choose whether you want your text to be aligned to the top, bottom, or middle of the cell.

1. To select all rows in columns A-F, click the gray column A label, and then drag your cursor to the right.

2. To vertically align the text in the center of each row, click the vertical align icon (⭳) and then click the middle icon (⭻).

Task 2. Create a summary table

In this task, you create a customized table for On the Rise Bakery.

Use the ROUND function

1. In cell G1, type **Number of Visitors (Rounded)**

2. In cell G2, type **=ROUND(F2, 3)**

   The ROUND function rounds a number to a specific number of decimal places. Since F2 does not contain any decimals, the values of F2 and G2 are equal.

3. In cell G2, change the formula to **=ROUND(F2, -3)**

   When the number of decimal places becomes a negative number, the result is rounded by numbers to the left of the decimal point. Specifying -3 rounds to the nearest thousand.

4. To apply formula to the rest of the column, select cell G2 and then double-click the small blue box in the lower-right corner of the cell.

   Alternatively, you can click the small blue box in the cell, and then drag your cursor down.

Merge cells

1. In cell A29, type **Descriptive Statistics**

   Notice that the word **Statistics** spills over into cell B29.

2. Select cells A29 and B29.

3. At the top, click **Format** > **Merge cells** > **Merge horizontally**.

   You can also use the Merge cells icon ( ) in the toolbar.

Change the appearance of cells

1. Copy the following list, click cell A30, and then paste the list.

- **Average (Mean)**
- **Median**
- **Mode**
- **Range**
- **Standard Deviation**

Notice that each item from the list was pasted into its own cell and the bullet points were not pasted.

2. Select cells A29:B34, and then at the top, click **Format > Alternating colors**.

   The Alternating colors feature changes the colors of every other row in the chart. To change the color of an individual cell or group of cells, you can use the color fill () tool in the toolbar.

3. While cells A29:B34 are still selected, click the Borders icon () in the toolbar, and then click the Outer borders icon () to add a border.

   The border editing options let you format anything from a specific edge of a cell to an entire spreadsheet including the line style and line color.

Task 3. Calculate descriptive statistics

In this task, you perform calculations by using basic arithmetic operations and statistics functions.

Define a named range

Named ranges in Google Sheets let you more easily reference ranges and create cleaner formulas.

1. At the top, click **Data > Named ranges**.

   A panel will open on the right.

2. At the top of the panel, click **+ Add a range**.

3. Change the name from **NamedRange1** to **data**, type data range as **'Blog Visitors'!F2:F26**, and then click **Done**.

You can use a named range to replace a range in a formula. For example, instead of typing the formula **=AVERAGE(F2:F26)**, you can type **=AVERAGE(data)** and get the same result. You learn more about calculating averages in the next step.

Calculate mean, median, and mode

1. To calculate the mean population, in cell B30, type **=AVERAGE(data)**

   In Google Sheets, the AVERAGE function is used to calculate the mean.

2. To calculate the median, in cell B31, type **=MEDIAN(data)**

3. To calculate the mode, in cell B32, type **=MODE(data)**

   The MODE function determines the most commonly occurring value in a dataset. Each value in column E only appears once, so there's no mode. As a result, you see an error message instead of a number.

4. In cell B32, change the formula to **=MODE(G2:G26)** to calculate the mode based on rounded data.

   In column G, there's a value that appears more than others, so a mode can be determined.

Calculate range and standard deviation

1. In cell B33, type **=MAX(data) - MIN(data)** to calculate the range.

2. In cell B34, type **=STDEV(data)**

   Standard deviation represents the average distance between the values in a dataset and the mean of the dataset.

Task 4. Work with pivot tables

You can use pivot tables to narrow down a large dataset or see relationships between data points. In this task, you create a pivot table that uses the web traffic data from the food blog.

Create a pivot table

Pivot tables summarize data in your spreadsheet by automatically aggregating, sorting, counting, or averaging the data and displaying the results in a new table.

1. At the top, click **Insert** and then **Pivot table**.

   A dialog will appear.

2. Type **'Blog Visitors'!A1:F26** as the data range.

3. For the **Insert to** option, select **New Sheet**, and then click **Create**.

   A new sheet titled **Pivot Table 1** is created.

4. Click the **Pivot Table 1** sheet, if it's not already open, and then find the **Pivot table editor** in the right panel.

5. Click **Sum of Number of Unique Visitors for each Continent** from the **Suggested** list, and then expand the width of column A.

   A pivot table acts as a sort of query against a source dataset. Depending on the data you choose, Sheets might recommend pivot tables to create.

6. At the top, click **Format > Theme**, and then choose an available theme to change the appearance of your sheet.

Manually create a pivot table

1. At the top, click **Insert** and then **Pivot table**.

A dialog will appear.

2. Type **'Blog Visitors'!A1:F26** as the data range.

3. For the **Insert to** option, select **Existing Sheet**, type **'Pivot Table 1'!A17** in the field, and then click **Create**.

4. In the **Pivot table editor** panel, click **Add** next to **Rows,** and then select **Continent**.

5. To add data to column B, click **Add** next to **Rows**, and then select **City**.

6. To display the counts of locations in each city and the total number of locations per continent, click **Add** next to **Values**, and then select **City**.

The **Values** section of the **Pivot table editor** includes several options to summarize data by. Explore the options, and then answer the following question.

Task 5. Collaborate in Sheets

In this task, you use Google Sheets features designed for collaboration to track a project.

Use checkboxes

You can add checkboxes to cells in a spreadsheet and use them for many purposes like checking off a to-do list.

1. In the lower-left of your spreadsheet, click the Add Sheet icon (+) to add another sheet.

2. Right-click the new sheet name, click **Rename**, and type **To-Do List**

3. In cell A1, type **Description**

4. Copy this list, select cell A2, and right-click to paste:

- **Create Schedule**
- **Create Budget**
- **Design Charts**

Ensure that each item in the list is pasted in its own cell in Column A.

5. Select cells B2:B4, and then at the top, click **Insert** > **Checkbox**.

6. To mark the item complete, click the checkbox in cell B3.

Note: Sheets also lets you use custom cell values with checkboxes. See Add custom checkbox values for more information.

Create action items

1. Copy the **User Email** in the left panel of this lab.

   This email address is the same one you used to log in to Google Workspace at the beginning of the lab.

2. Return to the **To-Do List** sheet, right-click on cell A2, and then select **Comment**.

3. Type **@**, paste your **User Email**, and then type **Deadline: Next Monday**

4. Check the **Assign to you** box, and then click **Assign**.

   You can use comments to assign tasks or action items to yourself or other collaborators.

5. In the upper-right corner of the page, click the Open comment history icon ( ) to view all comments.

   To filter comments, you can click the dropdowns next to **All types** and **All sheets**.

View changes to a file

1. To see who changed a cell and when it was changed, right-click cell A1, and click **Show edit history**.

2. To see an earlier version of your spreadsheet, at the top, click **File > Version history > See version history**.

   The **Version history** should appear in the right panel. You can use the options in this panel to view or revert to earlier versions of a Sheets file.

3. Select the second version in the list, click More actions (⋮), and then click **Name this version**.

4. To add a version name, type **Action Items**, and press ENTER on your keyboard.

5. Click More (⋮) to review the updated menu options, and then answer the following question.

Note: You can also see who has viewed or shared a file by using the Activity dashboard. Read View the activity on your Google Docs, Sheets & Slides for more information.