Use Functions, Formulas, and Charts in Google Sheets: Challenge Lab

Task 1. Clean and validate data

On the Rise Bakery has a staff directory for its newest location. After signing into Google Drive using the username and password provided for this lab, open the **On the Rise Bakery Business Challenge** file that has been created for you.
On the **Staff Directory** sheet, the first names of several employees are not properly capitalized. In column B, use a function to capitalize only the first letter of employee first names.

You also must verify that column E contains a valid email address for each new employee. With Google Sheets, you can use data validation rules and various functions to verify data.

Perform the following two methods of validating email addresses:

- Identify the appropriate function to validate email addresses, and then use that function in column E.
- Create a data validation rule that validates email addresses.

Step 1: Capitalize First Names in Column B

- In **Column B**, apply this formula:

  `=PROPER(A2)`

  - This assumes `A2` contains the first name.
  - Drag the formula down to apply it to all rows.

Step 2: Identify the Correct Function to Validate Email Addresses

```
ISEMAIL
```

Step 3: Validate Emails in Column E

- In **Column F** (or another column), type:

```
=ISEMAIL(E2)
```

    - Returns `TRUE` for valid emails.
    - Drag down the formula for all rows.

Step 4: Create a Data Validation Rule

- Select the **cells in Column E** (e.g., E2:E).
- Click **Data > Data validation**.
- Under **Criteria**, select **Text > Text is a valid email address**.
- Click **Done**.

Task 2. Organize and find data

You're coordinating orientation for new staff members. To ensure that you don't miss any celebrations, you must organize the **Staff Directory** sheet in order of the birthdays listed in column G.

Due to a change in the availability of a facilitator, the food handling training on October 5 is rescheduled to October 10. Update column I to reflect this change.

At least one manager must be notified of this change. In cell A18, use a function to retrieve the email address of at least one manager from the spreadsheet.

Step 1: Sort by Birthdays (Column G)

- Select the entire **Staff Directory**.
- Click **Data > Sort range by column G (A → Z)**.

Step 2: Update Training Date

- Find all instances of `October 5` in **Column I**.
- Change them to `October 10`.

Step 3: Retrieve a Manager's Email

- Use a formula like this in cell **A18**:

  ```
  =INDEX(E2:E, MATCH("Manager", D2:D, 0))
  ```

  - This assumes `D` is the Role column and `E` is the Email column.

Task 3. Create a chart

Using data in the **Staff Directory** sheet, create a chart that shows the roles of staff members.

Google Slides makes it easy to present slideshows with embedded charts from Google Sheets. Create a new Google Slides presentation with an embedded chart and use **Staff Roles** as the filename.

Step 1: Create a Chart of Staff Roles

- Select the **Role** column (e.g., D2:D).
- Click **Insert > Chart**.
- Choose **Pie chart** (or Column chart) to visualize staff roles.

Step 2: Create Google Slides with Embedded Chart

- In the chart's top-right menu, click the **3-dot icon > Copy chart**.
- Open **Google Slides**.
- Create a new presentation named **Staff Roles**.
- Paste the chart (Ctrl+V or Command+V).
- Choose **Link to spreadsheet** when prompted.

Task 4. Calculate descriptive statistics

On the Rise Bakery needs help with analyzing the **Customer Rating** sheet, which has data from 100 different orders.

Calculate the average, median, range, and standard deviation of data in cells C2:C101 to complete the descriptive statistics table that spans cells E3:F8.

Cell E3 (Average):

```
=AVERAGE(C2:C101)
```

Cell E4 (Median):

```
=MEDIAN(C2:C101)
```

Cell E5 (Range):

```
=MAX(C2:C101) - MIN(C2:C101)
```

Cell E6 (Standard Deviation):

```
=STDEV(C2:C101)
```

Task 5. Create a pivot table

After reviewing the summary table, On the Rise Bakery wants more insight into the customer ratings data. Create a pivot table that displays the *Average Customer Rating for each Item*.

Note: In the **Create pivot table** dialog, select **New Sheet** for the **Insert to** option, and then click **Create**.

Step 1: Insert Pivot Table

- Select the **Customer Rating data** (including headers).
- Go to **Insert > Pivot table > New sheet > Create**.

Step 2: Set Up the Pivot Table

- **Rows:** Add **Item**
- **Values:** Add **Customer Rating**
    - Set it to **Average**