Unit 2: Electronic Spreadsheet (Advanced)
Chapter 4: Analyze Data Using Scenarios and Goal Seek

1. Consolidating Data

Purpose: Consolidation is used to combine data from multiple sheets or ranges into a single summary.

Steps:

1. Open the spreadsheet.
2. Select the cell where the consolidated data should appear.
3. Go to **Data** > **Consolidate**.
4. In the **Function** list, choose a function like **Sum**, **Average**, etc.
5. Click **Add** to select ranges from different sheets or areas.
6. Select **Row Labels** and **Column Labels** if needed.
7. Click **OK** to consolidate.

2. Group and Outline

Purpose: Helps in organizing data by grouping rows or columns to show or hide detail.

Steps:

1. Select the rows or columns you want to group.
2. Go to **Data** > **Group and Outline** > **Group**.
3. Use the plus (+) or minus (−) symbols to expand/collapse the grouped section.
4. To remove a group, go to **Data** > **Group and Outline** > **Ungroup**.

3. Subtotal

Purpose: Automatically inserts subtotal values in a dataset based on changes in a column.

Steps:

1. Ensure your data is sorted based on the column you want to subtotal.
2. Select the dataset.
3. Go to **Data** > **Subtotals**.
4. In the dialog box:
    - Select the column to group by (e.g., Region).
    - Choose the function (e.g., Sum, Count).
    - Select the column(s) for which you want subtotals.
5. Click **OK**.

3.1 Subtotal Outline

When subtotals are added, Calc creates an **outline** structure:

- Level 1: Grand Totals
- Level 2: Subtotals
- Level 3: All details

You can use the **outline symbols (1, 2, 3)** on the left to collapse or expand data levels.

4. What-If Scenarios

Purpose: Scenarios allow users to create and switch between different sets of input values to see how they affect results.

Steps to Create a Scenario:

1. Select the cells with values you want to change.
2. Go to **Tools** > **Scenarios**.
3. Enter a **name** for the scenario.
4. (Optional) Add comments or choose display settings.
5. Click **OK**.
6. Repeat the process to create multiple scenarios.

To Switch Between Scenarios:

1. Go to **Insert** > **Names** > **Manage**.
2. Select the scenario and click **Show**.

5. What-If Analysis

Used to explore outcomes based on changing inputs

5.1 Multiple Operations

Purpose: Run calculations using different inputs for one or more variables.

Steps (One-variable data table):

1. Set up the formula using the variable.
2. Below or beside the formula, list different values.
3. Select the range including the formula and values.
4. Go to **Data** > **Multiple Operations**.
5. Enter the cell reference for the formula in **Row** or **Column Input Cell**.
6. Click **OK**.

5.2 Goal Seek

Purpose: Automatically finds the input value needed to achieve a specific result.

Steps:

1. Go to **Tools** > **Goal Seek**.
2. In the dialog:
    - **Formula Cell:** Cell containing the result/formula.
    - **Target Value:** Desired value.
    - **Variable Cell:** Input cell that should be changed.
3. Click **OK**.
4. Calc shows the result and asks if you want to keep it.

5.3 Solver

Purpose: Solver is a more advanced tool than Goal Seek. It can handle multiple variables and constraints.

Steps:

1. Go to **Tools** > **Solver**.
2. Set:
    - **Target Cell** (the objective).
    - **Optimize Result To:** Minimum, Maximum, or a specific value.
    - **By Changing Cells** (input variables).
3. Add **Constraints** if needed (e.g., Cell A1 ≤ 100).
4. Click **Solve**.
5. Choose to keep or discard the solution.

Note: Solver might require enabling or installing the **Solver Add-In** in **Tools** > **Extension Manager**.

5.4 Difference Between Goal Seek and Solver

Feature	Goal Seek	Solver
Input Variables	Only one	Multiple
Output Target	Specific value	Min/Max or specific value
Constraints	Not supported	Fully supports constraints
Use Case	Simple reverse calculations	Complex optimization problems
Example	Find interest rate for a target	Optimize profit with cost constraints