ADVANCED SPREADSHEET II- Financial Models and Scenario Analysis

A **spreadsheet** is a computer application used to organize, calculate, analyze and present data in rows and columns. Examples of spreadsheet applications include: Microsoft Excel, Google Sheets, LibreOffice Calc

Financial Models: A **financial model** is a spreadsheet that represents the financial activities of a person, business or organization using numbers, formulas and assumptions.

Financial models help people answer questions such as:

- How much money will the business make?
- How much will it spend?
- What will the profit be?
- How much money is needed to start a business?
- What happens if sales increase or decrease?
- Can the business afford a particular expense?

Components of a Financial Model

A simple financial model may contain the following:

1. Inputs: These are values entered by the user. Examples: Selling price, Number of products sold, Salary, Rent, Cost of materials, Tax rate

2. Assumptions: These are estimated values used to make calculations. For example: The business expects sales to increase by 10% next year.

3. Formulas: Formulas perform calculations automatically. Examples: `=B2*C2`**,** `=SUM(B2:B10)`**,** `=B10-B11`

4. Outputs: These are the results produced by the model. Examples: Total revenue**,** Total expenses**,** Gross profit**,** Net profit**,** Cash balance

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Example of a Simple Financial Model

Imagine a business with the following information:

Item	Amount
Sales	₦800,000
Cost of goods	₦300,000
Rent	₦100,000
Salaries	₦150,000
Transport	₦50,000

Total Expenses: ₦300,000 + ₦100,000 + ₦150,000 + ₦50,000 = **₦600,000**

Profit: Revenue – Expenses ₦800,000 − ₦600,000 = **₦200,000**

In Excel, the spreadsheet could calculate the expenses using: `=SUM(B3:B6)` and profit using: `=B2-B7`

Importance of Financial Models

Financial models are useful because they help users to:

1. **Prepare budgets**
2. **Forecast future income and expenses**
3. **Calculate profit or loss**
4. **Make business decisions**
5. **Analyse financial performance**
6. **Estimate future cash flow**
7. **Compare different business options**
8. **Identify possible financial problems**

Scenario Analysis

Scenario analysis is the process of examining what could happen when important values or assumptions are changed. In simple terms: **"What happens if something changes?"** For example, a business may ask:

- What if sales increase by 20%?
- What if sales decrease by 20%?
- What if the cost of materials increases?
- What if the selling price is reduced?
- What if the number of customers doubles?

Types of Scenarios

Three common scenarios are:

A. Best-Case Scenario

This represents a situation where things go very well.

For example:

- Sales increase
- Costs remain low
- More customers buy products

B. Worst-Case Scenario

This represents a difficult situation.

For example:

- Sales decrease
- Costs increase
- Fewer customers buy products

C. Most-Likely Scenario

This represents the situation that is considered most realistic.
