

Module 4 Assignment – Case Studies for Different Student Profiles

Case Study 1: Teacher (Fairly Easy) – Organizing & Presenting Educational Resources

Scenario: Managing Digital Lesson Plans

You are a **history teacher** preparing a unit on **World War II**. You have gathered **various digital materials** (articles, PowerPoint slides, videos, and worksheets) from multiple sources. However, your files are **scattered and unorganized**, making it difficult to **retrieve resources efficiently**.

Your task is to **organize your digital resources and create a clear lesson presentation**.

Assignment Tasks:

1. Organize Your Digital Files

- Set up a **folder structure** on Google Drive (or a similar platform).
- Rename files using **clear, descriptive naming conventions**.
- Assign appropriate **tags/labels** for easier retrieval.

2. Select the Best Tools for File Management & Collaboration

- Choose **one cloud storage platform** (Google Drive, OneDrive, Dropbox) and justify your choice.
- Explain how **sharing settings and version control** help with collaboration.

3. Create a Short Presentation on a Key Topic

- Design a **4-slide PowerPoint or Google Slides** summarizing an aspect of WWII.
- Apply **best practices for slide design** (minimal text, visuals, storytelling).

4. Explain Your Organization Strategy

- How does this **structured approach improve workflow**?
- What **challenges** did you face in organizing your materials?

What students learn:

Practical file organization and digital storage strategies.

How to create an effective digital lesson plan.

Applying best practices for presentation design.

Case Study 2: Nursing Student (Moderate Difficulty) – Processing & Presenting Medical Data

Scenario: Analyzing COVID-19 Patient Recovery Data

You are a **nursing student** assisting in a **hospital research** project tracking **COVID-19 patient recovery rates**. Your professor asks you to find a **publicly available dataset** and use it to **analyze recovery trends, patient demographics, and treatment effectiveness**.

Assignment Tasks:

1. Find and Download a Public COVID-19 Patient Recovery Dataset

- Locate a **publicly available, anonymized dataset** from government health organizations or platforms like Kaggle.
- Verify that the dataset includes relevant information (**age, recovery time, pre-existing conditions, treatment type**).

2. Organize & Process the Data in Excel or Google Sheets

- Sort data by **age group, treatment type, and recovery time**.
- Use **filters** to refine results.
- Apply basic **formulas (AVERAGE, COUNTIF, IF statements)** to calculate trends.

3. Create a Data Visualization

- Choose the most appropriate **chart type (bar, line, pie, scatter plot)** to represent trends.
- Ensure **labels, axes, and colors** improve readability.

4. Summarize Findings in a Short Presentation

- Design **3-4 slides** explaining key insights from the dataset.
- Ensure slides **follow best practices** (structured flow, clear visuals, minimal text).

5. Discuss the Implications of Your Findings

- What **patterns** did you observe?
- How might this information help **hospital decision-making**?

What students learn:

Finding and working with real-world medical datasets.

Practical data management and processing.

Data visualization using Excel or Google Sheets.

Creating a clear, professional medical report.

Case Study 3: Cybersecurity Student (Advanced Difficulty) – Investigating a Data Breach

Scenario: Analyzing a Security Breach Dataset

A **major financial institution** has suffered a **cybersecurity breach**, and your role as a **cybersecurity analyst** is to **analyze publicly available breach datasets** to identify trends, threats, and vulnerabilities in login attempts and security logs.

Assignment Tasks:

1. Find and Download a Public Cybersecurity Breach Dataset

- Locate a **publicly available dataset on Kaggle, cybersecurity research repositories, or government data portals**.
- Ensure the dataset **contains login timestamps, failed login attempts, IP addresses, and access logs**.

2. Organize & Process the Security Data

- Use **Excel, Google Sheets, or SQL** to filter data for **unusual login activity**.
- Apply formulas to **calculate login success/failure rates by region**.
- Use **conditional formatting** to highlight suspicious logins.

3. Visualize Security Threat Patterns

- Create a **bar or heatmap chart** showing **failed login attempts by country/IP range**.
- Identify **peak attack times** using **line graphs**.

4. Prepare a Security Breach Report (Short Presentation)

- Design **4-5 slides** outlining:
 - **Key findings from data**
 - **Potential risks**
 - **Recommended cybersecurity actions**

5. Explain the Importance of Data Organization in Cybersecurity

- How does **structured data** help detect threats faster?
- What **data management tools** (SQL, Excel, security dashboards) help professionals analyze cybersecurity incidents?

What students learn:

Finding and using real-world cybersecurity breach datasets.

Organizing and managing digital security data.

Using data analysis for cybersecurity investigations.

Creating professional cybersecurity reports.

Final Deliverables & Student Expectations

Students select one case study based on their field of study.

Submit a **1-2 page report** including:

- **Step-by-step data processing & organization.**
- **Data visualization screenshots or examples.**
- **A structured presentation of findings.**