Databases

ENSIA 2023-2024

Lab sheet 1: Introduction to Database Management and MS Excel

Objective: This lab will help you understand the limitations of using Microsoft Excel for complex databases and introduce you to the advantages of a Database Management System (DBMS).

Task 1: Creating a Database in MS Excel

1. Open a new Excel spreadsheet.
2. In your worksheet Create the following table:

Num_Employee	Num_Project	Start_Affect	End_Affect	Supervisor	Supervisor_Name	Employee_Function
1059	122	07/03/2013	13/11/2014	NULL	NULL	Designer, Manager
1001	122	08/03/2011	28/06/2011	1059	MERABAT	Manager
1022	122	15/06/2011	04/10/2011	1059	MERABAT	Developer
1059	103	12/09/2010	01/11/2010	NULL	NULL	Designer, Manager
1001	208	15/06/2011	12/10/2011	1059	MERABAT	Manager
1059	208	15/06/2011	06/03/2012	NULL	NULL	Designer, Manager
1022	208	01/09/2011	17/12/2011	1059	MERABAT	Developer
1059	133	06/11/2011	19/02/2012	NULL	NULL	Designer, Manager
1053	208	01/09/2011	06/03/2012	1026	Bouras	Administrator
1026	208	19/08/2011	06/03/2012	1059	MERABAT	Analyste, Manager

3. What is the job of employee number “1022” in the project number “122” and “208”? What do you notice? How would you solve this problem?
4. List the employees who work as designers from the employee function table. Discuss the encountered issue? How to solve it ?
5. What is the name of the supervisor of employee number “1053”? What is the name of the supervisor number 1026? What do you notice? What do you propose ?
6. Change the value of ‘Start_Affect’ from ‘07/03/2011’ to ‘march’. What do you observe?

7. Suppose you have sensitive data that you want to protect. Explain how you could use MS Excel to secure this data ? Discuss the limitations of this method in ensuring data security.

Task 2: Data Organization in Separate Sheets

8. Open a new Excel workbook.
9. For each table in the database, create a new sheet in the workbook.
10. Organise the data from Task 1 into the respective sheets, ensuring that each sheet represents a separate table.
11. Create relationships between the tables by referring to the primary and foreign keys.

Task 3: Manual Data Querying

12. Create a new sheet named "Queries" in the workbook.
13. Write down some simple queries that you can perform using Excel functions (e.g., VLOOKUP) to retrieve meaningful information from the data.

    Exp: display the function of employee number 1001.

14. Explain any challenges and limitations you face when querying the data manually.