SQL Query to Excel Table

Experience Report

Project Name: SQL Query to Excel Table

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Context

The IT team at the Business Zone within the Ministry of Employment and Social Solidarity (MESS) needs to design SQL scripts to perform various tasks on the server. For security reasons, these scripts must be sent to the Digital Data Expertise team for evaluation and execution. The transmission of the scripts is done in such a way that each line must be copied and pasted into an Excel/Word table in the first column. In the second column, the expected result is indicated by a 1 or 0. This process is long, repetitive, non-optimal, and increases the chances of errors during copying. These time losses are exacerbated if errors occur and part of the SQL query needs to be redone.

Objective

The objective of this program is to improve the efficiency of the process by reducing the time loss related to copying and pasting the SQL query into the Excel/Word table. Additionally, it reduces the chances of errors. Moreover, the employee's experience is greatly improved. Finally, monetary savings are achieved as the employee can focus on other tasks.

Experience

Prerequisites

The following prerequisites must be met before the experience:

- A SQL query ready to be copied.
- Excel and the provided Excel file already copied.
- Stopwatch.
- Installed application.

Protocols

Manual Section

1. Have the SQL query open on one screen.
2. Have the copied Excel file open on another screen.
3. Start the stopwatch once ready.
4. Copy and paste each piece of the query into the appropriate cell.
5. In the next column, indicate the expected output (1 or 0) if necessary.
6. Stop the stopwatch when the entire query has been copied and all expected outputs have been recorded.
7. Record the stopwatch result.

Note :

- Steps 4 and 5 can be done in any way the user feels most comfortable. The important thing is to follow steps 1, 2, 3, 6, and 7 to obtain valid results.
- The experiment can be repeated several times if the user is not familiar with the manipulations.

Automatic Section

1. Have the SQL query open on one screen.
2. Close the copied Excel file.
3. Open the Sql_vers_tableau_words.exe program.
4. Start the stopwatch.
5. Choose option 1.
6. Enter or preferably copy the full path, including the file name, of your SQL query file.
7. Enter or preferably copy the full path and file name of your copied Excel file.
8. Choose option 2.
9. Open the Excel document.
10. Quickly check the table's integrity. Ensure the SQL query has been adequately copied.
11. Stop the stopwatch.
12. Record the result.

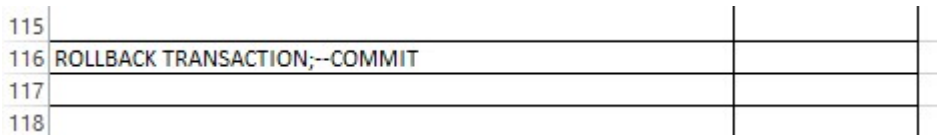
Note :

- The experiment can be repeated several times if the user is not familiar with the manipulations.
- See the user guide for more details on using the `Sql_vers_tableau_words.exe`.

Results

Additional Information:

- The Excel file has a total of 116 cells, implying that the SQL query is 114 cells long. 116 - 2 = 114.



Results Table

Table 1: Result after 1 attempt

Number of cells	Manual Time (minutes)	Program Time (minutes)
116	20.00	1.17

Table 2: Number of Cells Copied per Minute Using Manual Method

Method	Number of Cells per Minute
Manual	5.8

Table 3: Estimated Time for Manual and Program Methods Based on Number of Cells

Number of Cells	Manual Time (minutes)	Program Time (minutes)	Time Saved Delta (minutes)	Gain
3	0.5	1.17	-0.7	0.4
6	1.0	1.17	-0.1	0.9
10	1.7	1.17	0.6	1.5
20	3.4	1.17	2.3	2.9
40	6.9	1.17	5.7	5.9
50	8.6	1.17	7.5	7.4
75	12.9	1.17	11.8	11.1
100	17.2	1.17	16.1	14.7
116	20.0	1.17	18.8	17.1
200	34.5	1.17	33.3	29.5
500	86.2	1.17	85.0	73.7
1000	172.4	1.17	171.2	147.4

Calculations

- Tableau 2 :

$$Number\ of\ cells\ per\ minute = \frac{Number\ of\ cells}{Manual\ metho\quad time} = \frac{116}{20} = 5.8$$

- Tableau 3 :

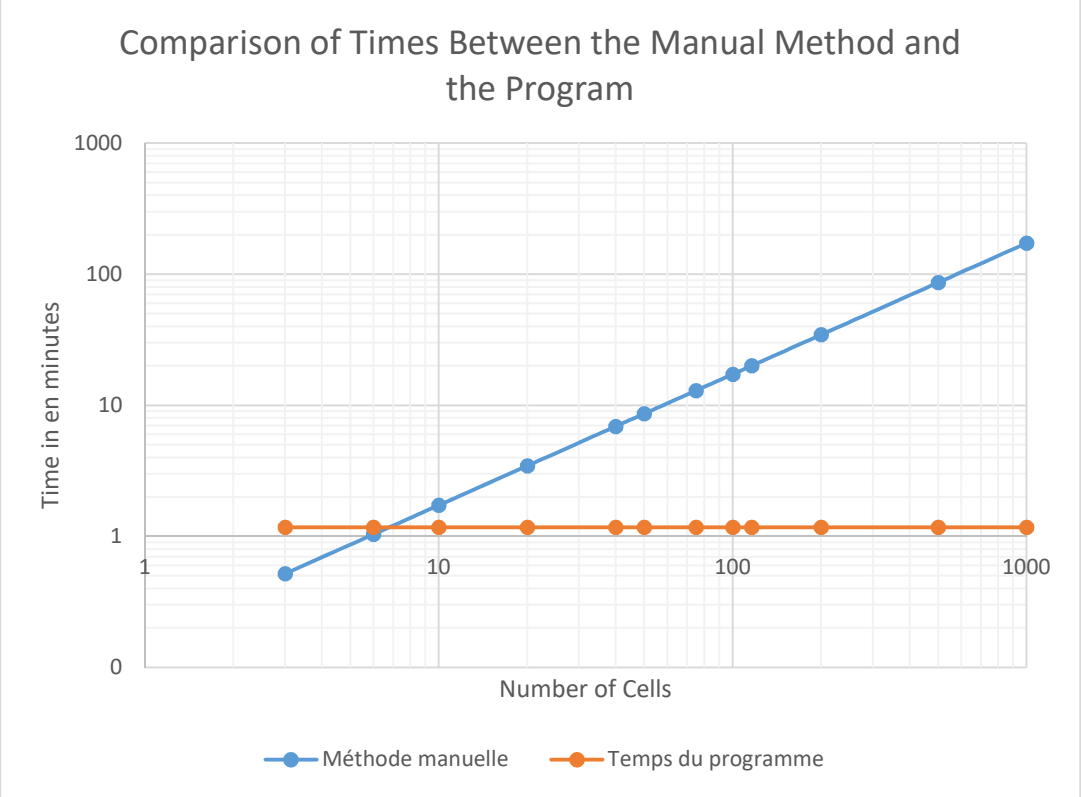
$$Manual\ time\ = \frac{Number\ of\ cells}{Number\ of\ cells\ per\ minute} = \frac{3}{5.8} = 0.5$$

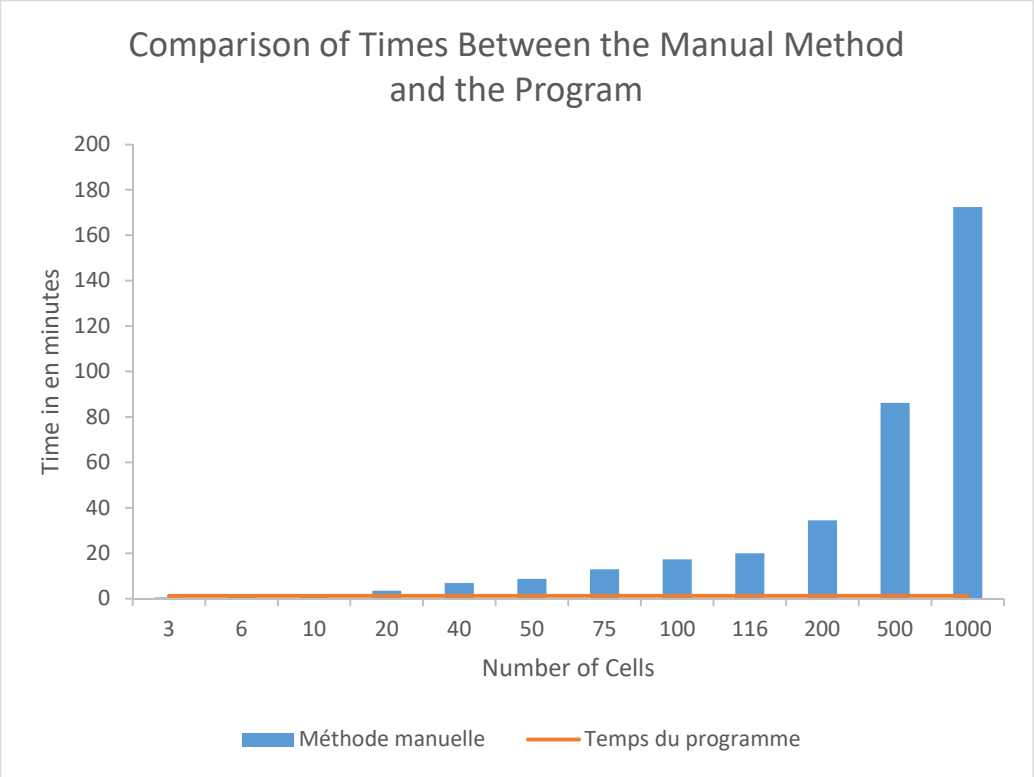
$$Program\ time = constant = 1.17$$

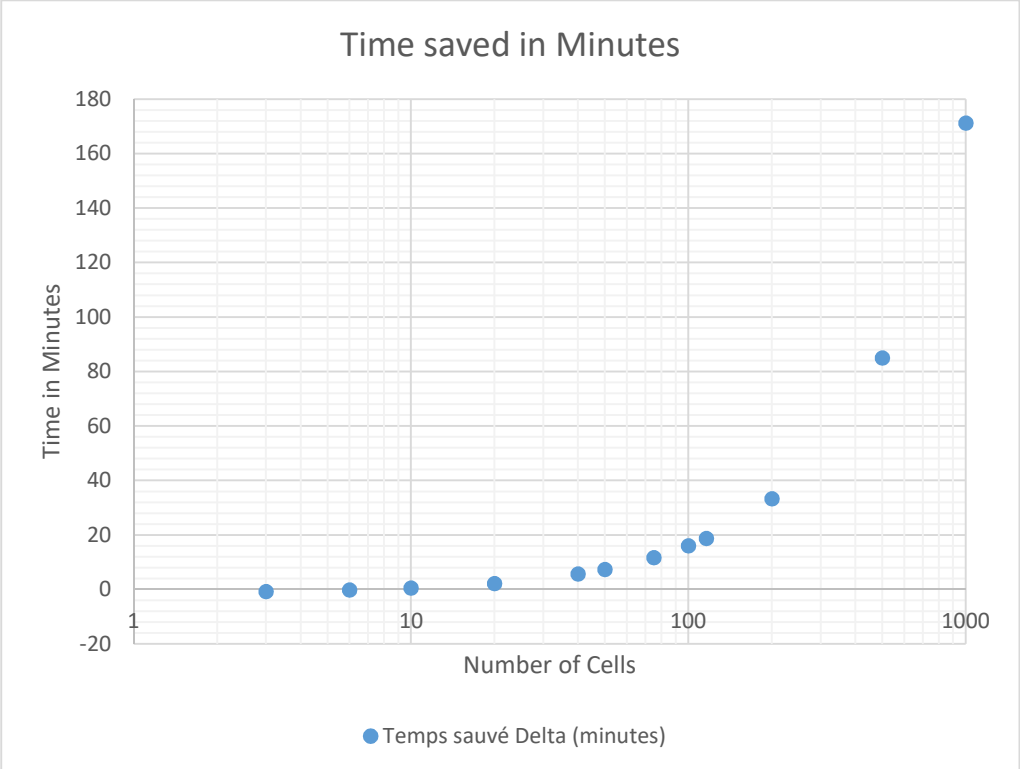
$$Time\ save\ Delta = Manual\ time - \ Program\ time = 0.5 - 1.17 = -0.7$$

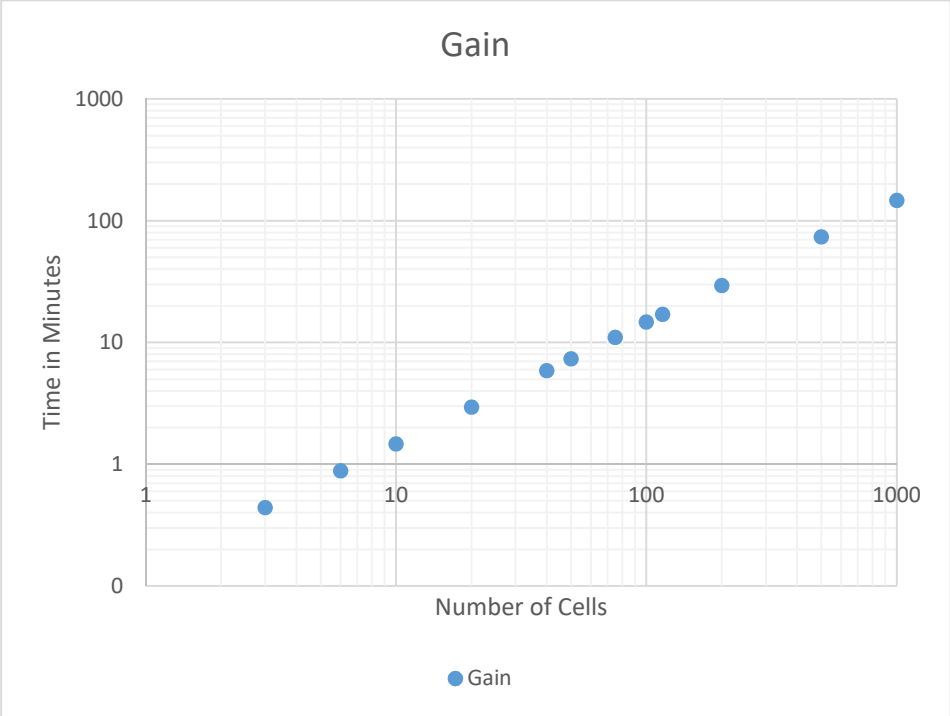
$$Gain = \frac{Manual\ time}{Program\ time} = \frac{0.5}{1.17} = 0.4$$

Graphical Results




Comparison of Times Between the Manual Method and the Program
Time in en minutes
200
180
160
140
120
100
80
60
40
20
0
3
6
10
20
40
50
75
100
116
200
500
1000
Number of Cells
Méthode manuelle
Temps du programme


Time saved in Minutes
Time in Minutes
180
160
140
120
100
80
60
40
20
0
-20
1
10
100
1000
Number of Cells
Temps sauvé Delta (minutes)



Interpretation des Results

- It is possible to see that performing the manual method is faster when the number of cells is low.
- The program can be considered as having a constant time.
- The program becomes exponentially faster as the number of cells increases.
- A negative delta indicates that the manual method is faster than the program. In other words, using the program results in a time loss. Conversely, a positive delta indicates that time is saved by using the program.
- The delta is directly and proportionally related to the time saved (or lost if negative). For instance, if delta indicates 100 minutes, those are 100 minutes saved.
- The Gain represents the gain factor (it can be considered as an acceleration factor). A value > 1 indicates time is saved by using the program. A value < 1 indicates time is lost using the program. Finally, a value of 1 indicates that both methods are equivalent.

Conclusion

The objective of this program is to improve the efficiency of the process by reducing the time loss related to copying and pasting the SQL query into the Excel/Word table. Additionally, it reduces the chances of errors. Moreover, the employee's experience is greatly improved. Finally, monetary savings are achieved as the employee can focus on other tasks.

The results of the experience confirm that the program meets the objectives.