

How to convert easily raw data to an AutoCAD drawing through script

(A detailed paper.)

The aim of this project is to get easily an AutoCAD drawing from raw data.

Example 1.

Let's get in AutoCAD the curve $y=\sin(x)$ in range $[-2\pi, 2\pi]$, as a spline.

The steps of this project are the followings:

- s.1 The first step is to get the raw data. In a spreadsheet you calculate the function $y=\sin(x)$, as shown in Figure 1. (Note that in the 1st column is the x value and in the 2nd the y value.) The step of x is up to your decision. In our example we take step $0.1 \text{ rad} \cong 2.9^\circ$.

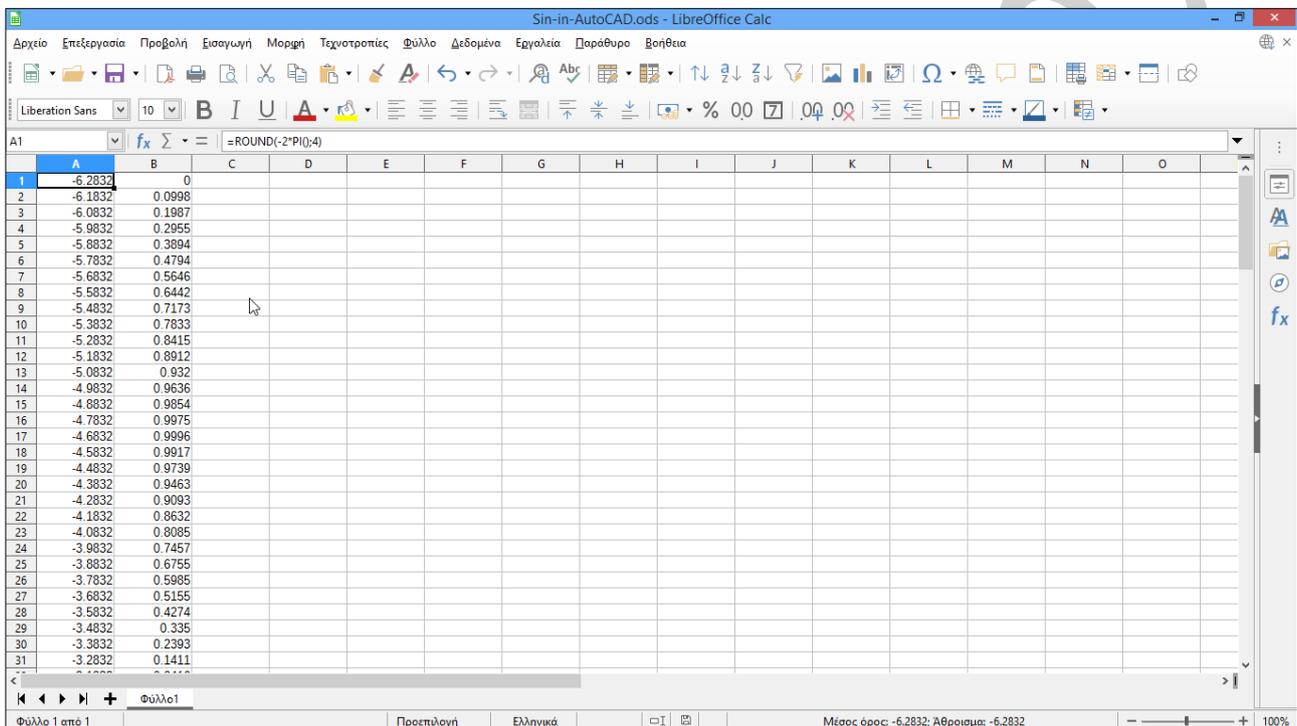


Figure 1: Preparing the raw data.

- s.2 Save the data as csv (comma separated value) file, as shown in Figure 2, e.x. "sin-in-AutoCAD.csv".
- s.3 Locate the file you have saved and rename it with extension cvs and rename it changing the extension to scr. A dialog box appears for confirmation of the change. The final name of the file is "sin-in-AutoCAD.scr".
- s.4 Open the file "sin-in-AutoCAD.scr" with notepad. The initial form of the file is shown in Figure 3.
- s.5 In the start of the file type the **spline** command and press once ↵ without extra spaces, as shown in Figure 4. Note that in AutoCAD the space is equivalent to Enter.
- s.6 Press the keys **Ctrl+End** to go at the end of the file. In this point press three times the ↵, as shown in Figure 5.
- s.7 Open AutoCAD. Type the command **script** and press ↵.
- s.8 In the next dialog box locate the file "sin-in-AutoCAD.scr", as shown in Figure 6, and click on **Open** button.
- s.9 The curve of the function $y=\sin(x)$ is drawn, but it is not entire visible.
- s.10 Type the command **z** and press ↵, in order to execute the **zoom** command.
- s.11 Type **e** and press ↵, in order to execute the **extents** option. The final result is shown in Figure 7.

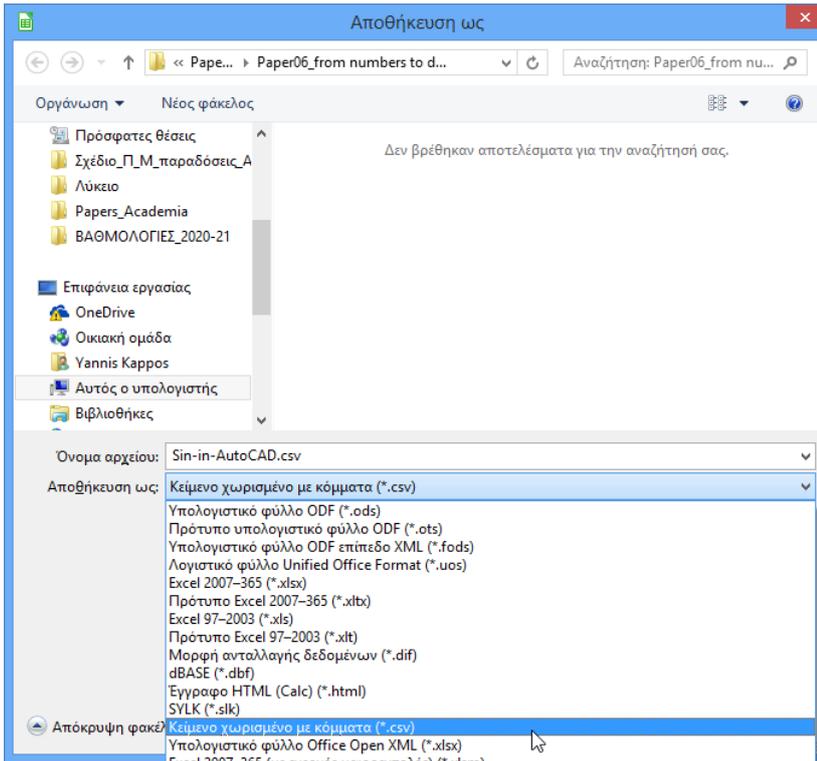


Figure 2: Preparing the raw data.

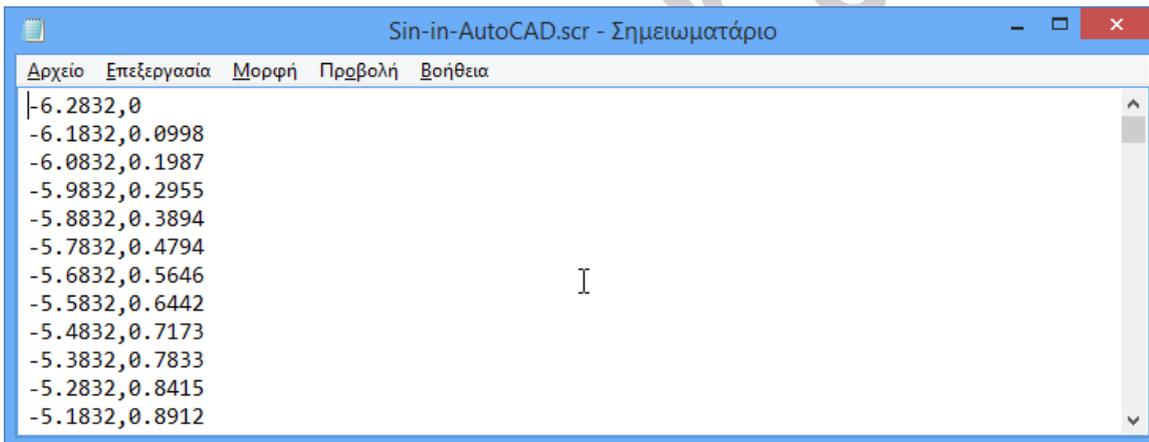


Figure 3: Manipulating the raw data.

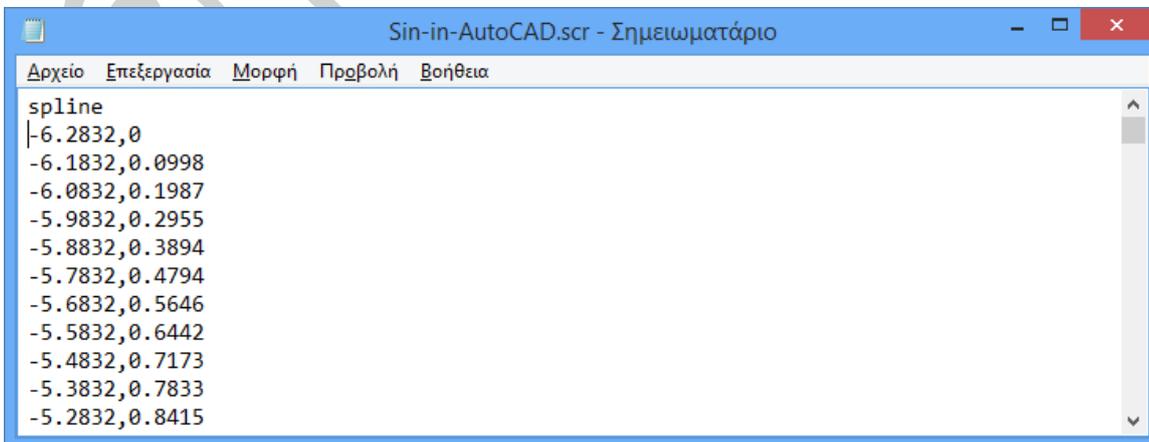


Figure 4: Typing the AutoCAD command.

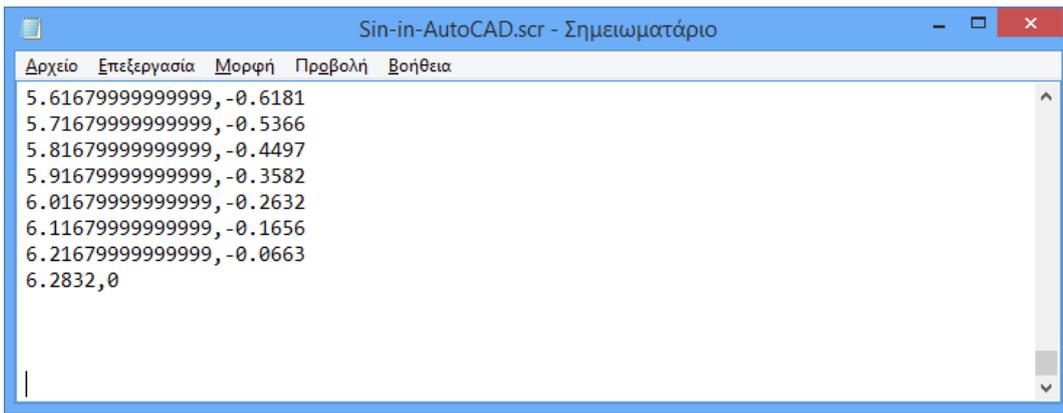


Figure 5: Finishing the file.

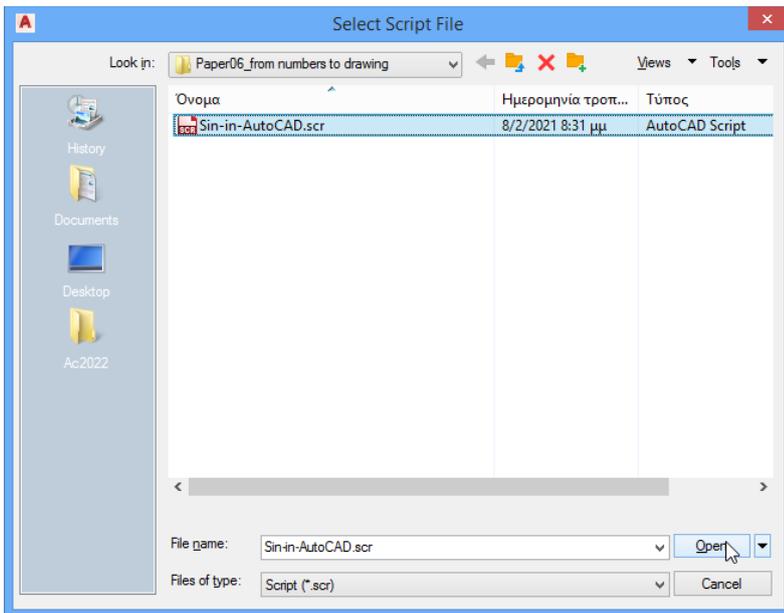


Figure 6: The dialog box of script command.

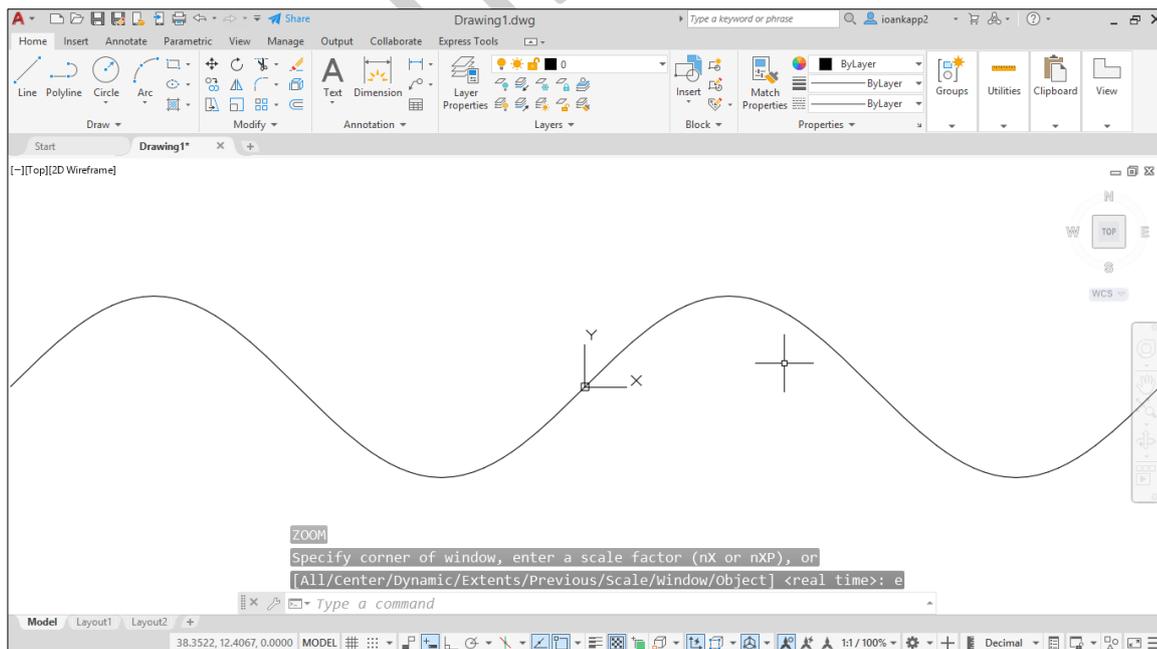


Figure 7: The final result.

Example 2.

A simpler example is to draw a land from the coordinates of its corners. Let's get the example of my book "[The Art of Applied AutoCAD for Surveyors, Architects and Civil Engineers](#)", which gives the coordinates of its vertices. The way in the book is completely different from this concept. The data of the land (as they are given in the book) are shown in Figure 8.

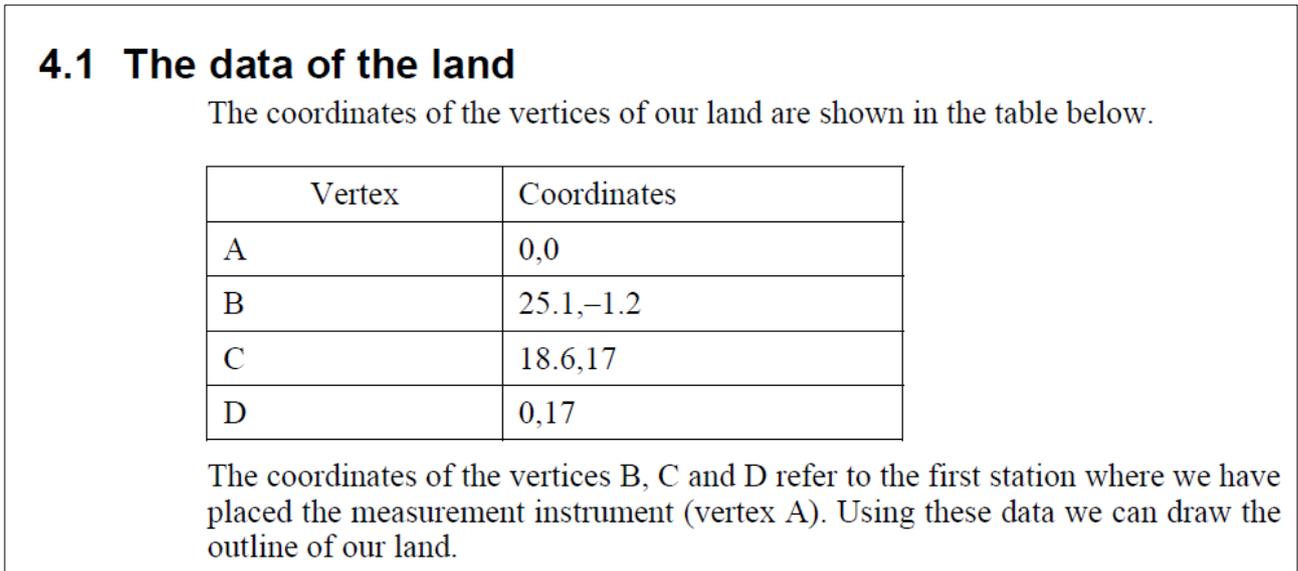


Figure 8: The raw data of the land (as they are given in the book).

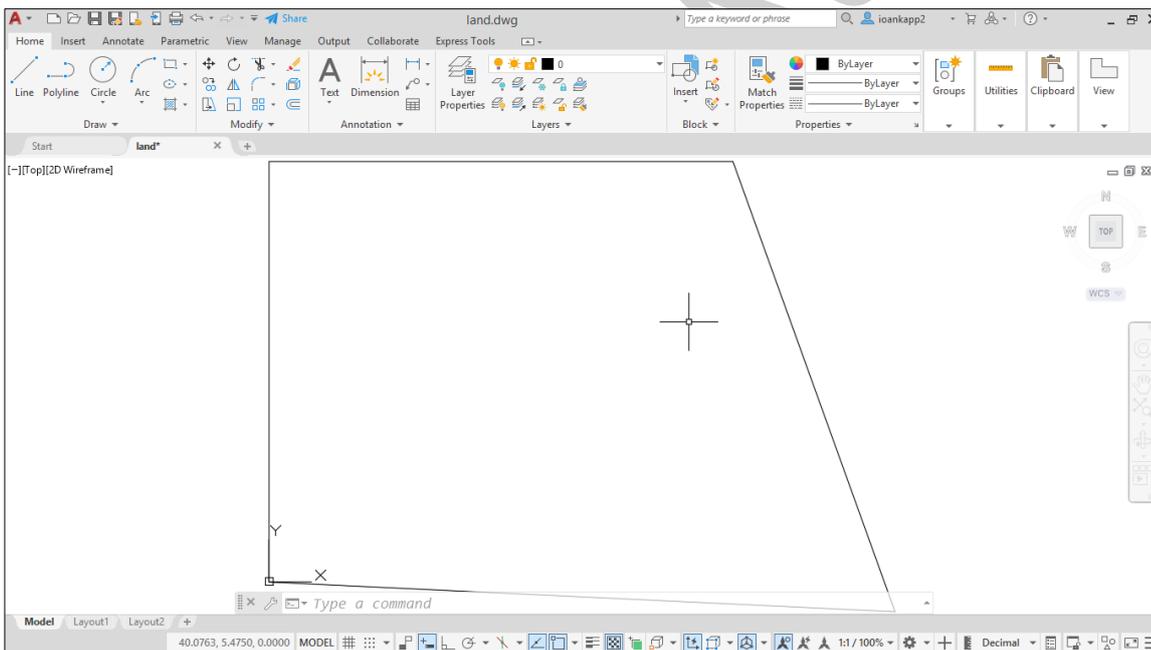


Figure 9: The final drawing of the land.

We are going to write a script in order this land will be drawn almost automatically, as shown in Figure 9. The steps are the following:

- s.1 Run the **notepad** and type the next text, which is a series of commands and options.
- s.2 Type **line** and press **↵**.
- s.3 Type **0,0** and press **↵**.
- s.4 Type **25.1,-1.2** and press **↵**.
- s.5 Type **18.6,17** and press **↵**.
- s.6 Type **0,17** and press **↵**.

- s.7 Type **c** and press ↵.
- s.8 Type **zoom** and press ↵.
- s.9 Type **e** and press ↵.
- s.10 Open AutoCAD. Type the command **script** and press ↵.
- s.11 In the next dialog box locate the file “land.scr”, and click on the **Open** button. The final result is shown in Figure 9.

As you understand you can make many “scripts” with script command. You must know all the commands of AutoCAD as they are executed from the command line, and not from ribbon or from the palettes.

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