Quick Setup Guide

for the

MYSTRAN General Purpose Finite Element Structural Analysis Computer Program

(Open Source Version)

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1 QUICK SETUP GUIDE

The MYSTRAN program is a *stand-alone executable, with no external dependencies*. Because of this, it is straightforward to set up and run. However, for convenience, some additional options are presented in this guide: three options are presented. The first is the simplest and is sufficient for many users. The second and third options are more flexible.

Section 2 of the "User Manual" for MYSTRAN combines this guide with some additional discussion about the run information that is provided in the CMD window.

OPTION 1 – SIMPLEST

Conditions:
- MYSTRAN.exe and the input file (*filename.dat* or *filename.bdf*) are in the same directory.
- The input file (deck) has a DAT or BDF extension (typical).
- A command prompt is set to the directory where MYSTRAN.exe and the input file exist.

Run:
Command line:
mystran *filename*

Output:
The output files will be in the directory where MYSTRAN.exe and input file are located.

NOTE 1: MYSTRAN may also be run with a file extension, as follows:
mystran *filename.ext*

NOTE 2: For Windows Powershell, use the following command:
./mystran *filename*

NOTE 3: MYSTRAN may also be called via a double click. It will then request the input filename.

OPTION 2 – MORE FLEXIBLE

Conditions:
- MYSTRAN.exe may be in a different path than the input file.
- The command prompt can be set to any directory.

Run:

Command line:

"C:\Anypath1\mystran.exe" "C:\Anypath2*filename*"

Output:

The output files will be in the same directory as the input file.

NOTE 1: This approach can be used in a batch file, say run.bat, with the following line:

"C:\Anypath1\mystran.exe" "C:\Anypath2*filename*"

The advantage is you can double click a batch to start it, add lines for multiple runs, and use variables.

NOTE 2: This approach can be used in a batch file, say run.bat, with the following line:

"C:\Anypath1\mystran.exe" %1

In this case, the wild card %1 is used as follows:

-The command line is **run filename** (batch file is in the same dir as filename)

-The command line is **run "C:\Anypath1\filename"** (batch file is a different dir as filename)

NOTE 3: Quote marks are only required if the path contains a space.

OPTION 3 – MOST FLEXIBLE: ENVIRONMENT VARIABLES AND INI FILE

Section 2 has the details of this option but a few words about it here are in order. In Windows, the user can set up an environment variable called MYSTRAN_directory which gives the location in which MYSTRAN.exe is located. Then, using the MYSTRAN initialization file (MYSTRAN.INI), options such as changing the default extension (from the default dat) to something like bdf could be done. The INI file can also be used to accomplish several other tasks as described in Section 2.

Conditions:
MYSTRAN.exe and the input file can be anywhere. No bat file is needed.

Run:
Command line (file extension not needed if it is dat or is set to something else like bdf in the INI file):
mystran filename

Note that if the input is not in the same folder as the one in which the MYSTRAN command was executed then *filename* must contain the full path as well

Output:
The output will be in the same folder as the input.

2   MODIFYING THE QUICK START SETUP

The quick start setup described in Section 1 was the easiest, but perhaps not the most convenient, way to run MYSTRAN. This section discusses moving the MYSTRAN.EXE program to some other directory. It also discusses the MYSTRAN initialization file which can be used to change from some of the default values built into MYSTRAN.
Changing directories where MYSTRAN executable resides
Windows version

The MYSTRAN executable can figure out what folder it is in through use of a Windows environment variable. In Windows 10 open Settings and, under "Find a setting" type "environment variables" and click on "Edit environment variables for your account" and create a new environment variable called "MYSTRAN_directory" and give it a value of the folder where you have put the MYSTRAN.EXE program. You can then run MYSTRAN from a command window by changing to the directory where your input file (e.g. dat file) is located and typing MYSTRAN followed by the input file name (e.g. EXAMPLE1). If you do not give the input file name, MYSTRAN will prompt you for the name.

2.1 Linux version

If it is desired to have more flexibility in choosing the directory where the executable resides (i.e. not in the same directory where the input dat file exists), the following must be done (let *mystran_folder* be the folder where you want the files mystran.exe and MYSTRAN.INI to be):

In the user's ".bashrc" file add the following 4 lines (the file set_MYSTRAN_directory.sh, below, was one of the files in the tar file downloaded from the MYSTRAN web site. File set_MYSTRAN_directory.sh is to be put into *mystran_folder* along with mystran.exe and MYSTRAN.INI
:
Run script to set MYSTRAN_directory
source *mystran_folder*/set_MYSTRAN_directory.sh

# Environment variables
MYSTRAN_directory=*mystran_folder*

In the user's ".bash_profile" file add a line to include the directory where the mystran.exe and MYSTRAN.INI files reside (i.e. *mystran _folder*):

PATH=$PATH:*mystran _folder*

The MYSTRAN initialization file

When MYSTRAN starts, it looks for an initialization file (MYSTRAN.INI) in the same directory that the MYSTRAN.EXE executable file is located. If this file does not exist, default values enumerated below will be used. The initialization file is a text file that is used to:

Change the directory where MYSTRAN looks for the input files. The output files are put into this directory also. The default is that these files must be in the directory where the input dat file resides. Note, this is only needed if you did not create the environment variable "MYSTRAN directory" discussed in paragraph 4.1.2, and you are not in the directory of the dat file when you type MYSTRAN in the command window

Change the default extension for input files. The default is dat

Set the level of detail of subroutine begin/end times that is written to the log file. The default is no log file is produced.

Save Lij files. The default is that no Lij files will be saved.

If any of these are to be changed from their default values, a MYSTRAN.INI file must be created. If there is no MYSTRAN.INI file, the default values discussed below will be used. MYSTRAN.INI is a text file containing commands, discussed below, that can change the default values.

Any line in the initialization file that begins with a $ or that is a blank line is ignored.

Changing directories where the input and output files reside

Note: this is only needed if you did not create the environment variable "MYSTRAN_directory" discussed in paragraph 4.1.2.

The default for where MYSTRAN looks for the input file and where it puts the output files is the directory where you currently are when you run MYSTRAN. This can be changed with the DEF DIR command in the MYSTRAN.INI file. Say, for example, you want the input and output files to be in C:\RUNS\\PROJECT1 but you do not want to have to change to that directory to run MYSTRAN. The MYSTRAN.INI text file in order to accomplish this would contain the line:

DEF DIR C:\RUNS\PROJECT1

where DEF DIR must be in columns 1 through 7 of the line in MYSTRAN.INI and the default directory, C:\RUNS\PROJECT1 (where you want the input and output files) must begin no sooner than column 9 of that line. With this default directory defined, you only need to enter, at the command prompt when you execute MYSTRAN, the file name itself (EXAMPLE1 for the example problem). MYSTRAN will go to the defined default directory and look for the input data file and will put the output files in that directory also.