

Documentation for the get extents script in MATLAB

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Description

The get extents utility was written in MATLAB and was designed to retrieve the maximum and minimum values of elements in a three-column matrix. Inputs to the script include a single multi-columned and comma-, space-, or character-delimited ASCII text file. The script returns the extents of the matrix as six variables named “maximum_x”, “minimum_x”, “maximum_y”, “minimum_y”, “maximum_z”, “minimum_z”

Operating steps

Notes

** The header in the input file must be deleted prior to running the get extents utility script.

** The input file must be located in the same directory as the script.

```
1 % David E. Haddad
2 % July 2008
3
4 % This script will load a three-column matrix and return
5 % the maximum and minimum elements in each column.
6
7 % CHANGE THIS TO YOUR FILE'S NAME:
8 xyz_data = load('input_filename.txt');
9
10 x = xyz_data(:,1);
11 y = xyz_data(:,2);
12 z = xyz_data(:,3);
13
14 % Maximum values
15 [max_x, idx_max] = max(x(:)); % find maximum value of x, idx is the index.
16 [max_y, idy_max] = max(y(:)); % find maximum value of y, idy is the index.
17 [max_z, idz_max] = max(z(:)); % find maximum value of z, idz is the index.
18
19 %Minimum values
20 [min_x, idx_min] = min(x(:)); % find minimum value of x
21 [min_y, idy_min] = min(y(:)); % find minimum value of y
22 [min_z, idz_min] = min(z(:)); % find minimum value of z
23
24 % Display maximum and minimum values
25 maximum_x = max_x
26 minimum_x = min_x
27
28 maximum_y = max_y
29 minimum_y = min_y
30
31 maximum_z = max_z
32 minimum_z = min_z
33
```

- (1) Replace the text “input_filename” with the name of the multi-columned ASCII text file to be processed.
- (2) Run the script in MATLAB
- (3) The results will be displayed in the MATLAB command window.