

Creating Basic Error Checks in DataPlus® Mobile

March 11, 2016

Data Entry can have restrictions to avoid invalid data entry or to create lists for rapid data collection. There are two basic error check types: Lists and Ranges. They will be created both singularly and in combination to illustrate the many types of error check files.

List Check Type

A standard List Error Check is composed of one column of data used to compare against the user's data input. This can be either a List File of valid numbers or a List File of valid strings.

There are 2 options available for lists:

Unsorted

The default List type is Sorted in ascending, alphabetical, or numeric order. An advantage of a Sorted List is that it is much faster to check. You can select an Unsorted list of acceptable entries if you wish the data to be grouped by category. If the user input exactly matches an element of the list, then the entry is valid; otherwise, it is not valid.

Warning: If the column type is Character, the data comparisons are case sensitive. The list must be in upper case if the upper case option is left checked in the Data Entry tab.

Translated

With hand held computers, it is often much more efficient to key numbers instead of letters. Selecting a Translated List allows you to create a code that the computer translates into more meaningful data when stored.

A Translated List has 2 identical columns. The first column has the elements used to check against the user input, such as a standard List. The second column has the data that will actually be stored in the file.

Example of Translated List

User Input	Stored Data	Explanation
01	WP	If 01 is keyed, WP is stored.
02	WL	If 02 is keyed, WL is stored.
03	CD	If 03 is keyed, CD is stored.

In this example, only entries of 01, 02, and 03 would be accepted.

Range Check Type

The value entered must be greater than or equal to a defined minimum value and less than or equal to a defined maximum value. A warning Minimum and Maximum can also be set. This will prompt the user for verification of the data if between the absolute minimum and maximum and the warning minimum and maximum. Range checks can also have the minimums and/or maximums associated to data in other columns.

In this example, we will start with list checks. We will be using the Forestry App created in the [Creating a Basic Application for DataPlus Mobile](#).



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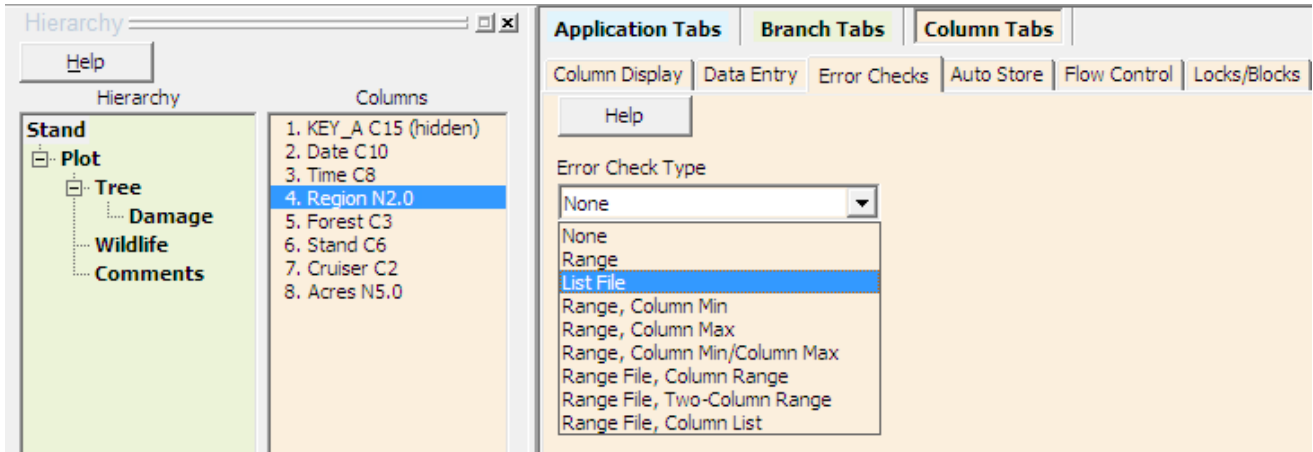
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List File Error Checks

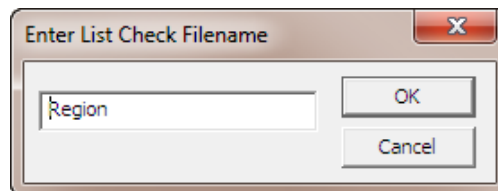
Make sure the **CRUISE** Application is open. We will create list error check files for the **Region** column in the Stand file, the **Spec** column in the Tree file, and the **DQI** and **DCC** columns in the Damage file. The species list will be a translated list.

Region List

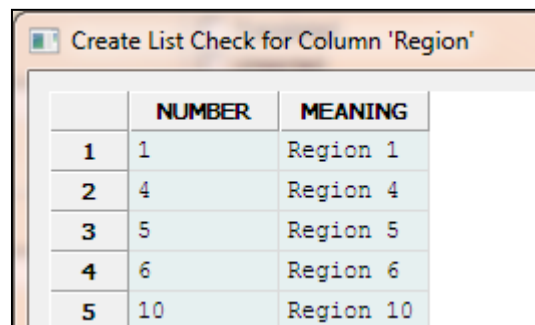
1. Verify that Stand is selected in the Hierarchy window. Select Region in the Columns window.
2. Select the Error Checks under Column Tabs.
3. Click on the down arrow for Error Check Type and select List File.



4. Click the Create Error Check File button. The Enter List Check Filename window appears.
5. Click OK to accept Region.
6. Click Yes to use a meaning column.



7. Create the list file as shown below.

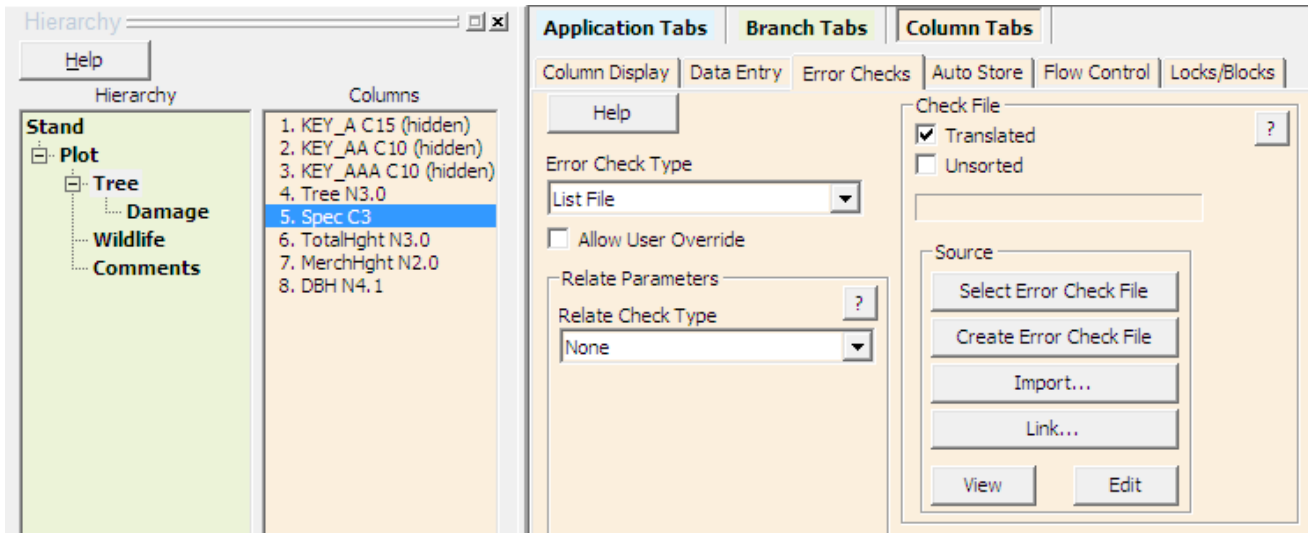


	NUMBER	MEANING
1	1	Region 1
2	4	Region 4
3	5	Region 5
4	6	Region 6
5	10	Region 10

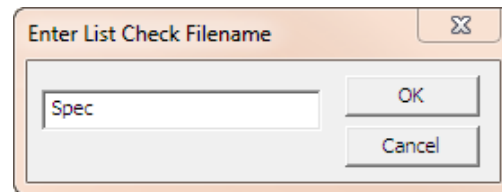
7. Click Save. The list is stored in a file named Region.cl.

Species List

9. Select Tree in the Hierarchy window and Spec in the Columns window.
10. Select the Error Checks under Column Tabs.



11. Click on the down arrow for Error Check Type and select List File.
12. Click the Translated check box.
13. Click the Create Error Check File button.
14. Click OK to accept Spec as the check file name.
15. Click Yes to use a meaning column.



16. Fill in the shown values.
17. When data in the first column is typed on the hand held, it will be translated and appear as the string that is stored in the second column.
18. Click Save. A file has been created named Spec.cl.

	STRING	TRANSLATE	MEANING
1	001	AF	Alpine Fir
2	002	BP	Bull Pine
3	003	C	Cedar
4	004	DF	Douglas Fir
5	005	L	Larch
6	006	LPP	LodgePole Pine
7	007	PP	Ponderosa Pine
8	008	WP	White Pine
9	009	YP	Yellow Pine

Damage Lists

19. Select Damage in the Hierarchy window and DQI in the Columns window.
20. Select the Error Checks under Column Tabs.
21. Click on the down arrow for Error Check Type and select List File.
22. Click the Create Error Check File button.
23. Click OK to accept DQI as the check file name.
24. Click Yes to use a meaning column.
25. Fill in the values shown.
26. Click Save. A file has been created named DQI.cl.

	NUMBER	MEANING
1	1	None
2	2	Not Assessed
3	3	Break
4	4	Top Out
5	5	Boughed
6	6	% Breakage
7	7	Crown Loss
8	8	% Defect
9	9	Encroachment
10	10	Fork
11	11	Girdled Bole
12	12	Lean
13	13	Overtopping
14	14	Rough
15	15	Ramicorn/2nd Flush

	NUMBER	MEANING
1	0	N/A
2	1	Animal
3	2	Competition
4	3	Disease
5	4	Insect
6	5	Mechanical
7	6	Other
8	7	Unknown
9	8	Weather

27. Select DCC in the Columns window.
28. Select the Error Checks under Column Tabs.
29. Click on the down arrow for Error Check Type and select List File.
30. Click the Create Error Check File button.
31. Click OK to accept DCC as the check file name.
32. Click Yes to use a meaning column.
33. Fill in the shown values.
34. Click Save. A file has been created named DCC.cl.

Test List Error Checks

1. Click the Compile button.
2. Click the Test button.
3. Click OK on the DPM Test Defaults. Press any key.
4. Verify that Region is selected.
5. Press F2. A list of choices appears.
6. Use the up/down arrow keys to make a choice. Press Enter.
7. Repeat steps 3 – 5 several times, inserting other values. Try typing some illegal values. Observe the changes.

Date	05/22/2015	Region	5
Time	07:49:43	Stand	
Forest		Acres	0
Cruiser			

NU	MEANING
1	Region 1
4	Region 4
5	Region 5
6	Region 6
10	Region 10

< Choices:5 >

F1-Help F4-Exit F5-Advance

8. Type data in the Stand field.
9. Press the F5 key to move to level 2.
10. Enter data for Plot fields.
11. Press the F5 key to move to level 3.
12. Press Enter to select Tree.
13. Type a number for the Tree Field and press Enter.
14. Type a number (as "001") or press F2 for a list of species and press Enter to select a code.
15. Press the down arrow.
16. Move to the Tree field.
17. Repeat steps 13 – 15 several times, selecting other species codes.
18. Press the F5 key to move to Damage level 4.
19. Press F2 for a DQI list.
20. Use the up/down arrows to select a damage indicator code. Press Enter.
21. Press Enter twice to move to the DCC field.
22. Press F2 for a DCC list.
23. Select a damage category code and press Enter.
24. Press F4 or Esc/Y until you return to the Application Generator. To exit with F4, the Stand, Plot, and Tree fields must contain data, as these are key columns.

Stand	S10053	Plot	1
Tree	Spec	TotalHght	MerchHght
1-STR TRA MEANING			
001 AF Alpine Fir			
002 BP Bull Pine			
003 C Cedar			
004 DF Douglas Fir			
005 L Larch			
006 LPP LodgePole Pine			
007 PP Ponderosa Pine			
008 WP White Pine			
009 YP Yellow Pine			
< Choices:9 >			
Tree Species			
F1-Help F4-Exit F5-Advance			

Plot	NU	MEANING
Mer	1	None
DQI	2	Not Assessed
0	3	Break
	4	Top Out
	5	Boughed
	6	% Breakage
	7	Crown Loss
	8	% Defect
	9	Encroachment
	10	Fork
	11	Girdled Bole
	12	Lean
	13	Overtopping
	14	Rough
	15	Ramiconorns/2nd Flush
Damage< Choices:15 >		

Range Error Checks

Acres Column Range

A range file requires that user input be greater than or equal to a defined minimum value and less than or equal to a defined maximum value.

Make sure the CRUISE Application is open.

1. Select Stand in the Hierarchy window and Acres in the Columns window.
2. Select the Error Checks under Column Tabs.
3. Click on the down arrow for Error Check Type and select Range.
4. In the Error Check Parameters, enter a Min value of 25 and a Max value of 1000.
5. Click on the check box and key in a Warn Min value of 25 and a Warn Max value of 640.

Error Check Parameters

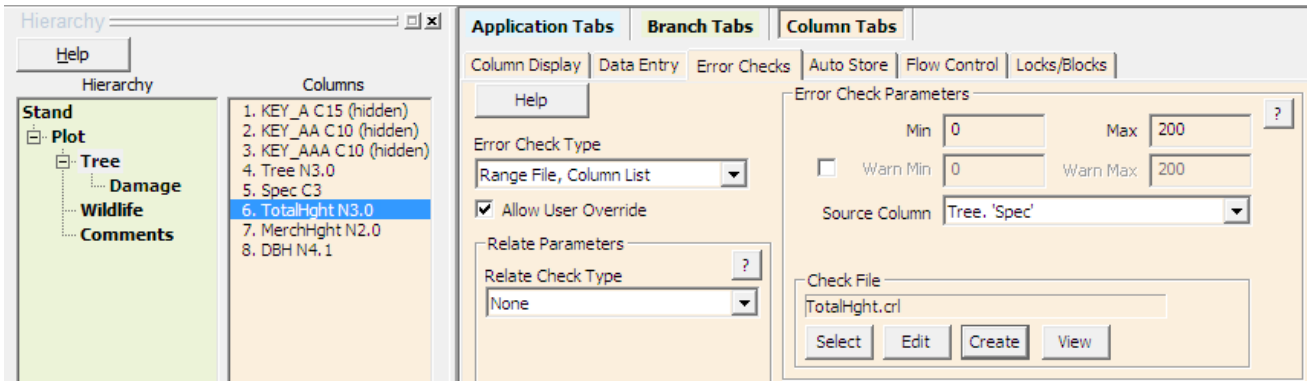
Min: 25 Max: 1000

Warn Min: 25 Warn Max: 640

Total Height Range File, Column List

Range File, Column List restricts user input to minimum/maximum values based on a string or value from a previous column defined in a list.

6. Select Tree in the Hierarchy window and TotalHght in the Columns window.
7. Select the Error Checks under Column Tabs.
8. Click on the down arrow for Error Check Type and select Range File, Column List.
9. Click on the Allow User Override box. After being warned, the cruiser can enter values not within the min/max range.
10. In the Error Check Parameters, enter a Min Value of 0 and a Max Value of 200.
11. Click the down arrow for the Source Column and select Tree.'Spec'. Permitted values for the height of a tree depend on the species.



12. Click the Create button.
13. Click OK to accept TotalHght as the file name.
14. Click Yes to load the related column's error check data.
15. Values in the STRING column have been copied from Spec.cl. Fill in the MIN and MAX values shown. Each species will have its own Min/Max values. These will further restrict the absolute Min/Max (0 and 200) values entered earlier.
16. Click Save. A file has been created named TotalHgh.crl.

	STRING	MIN	MAX
1	AF	0	75
2	BP	0	100
3	C	0	150
4	DF	0	125
5	L	0	125
6	LPP	0	100
7	PP	0	150
8	WP	0	100
9	YP	0	100

Advanced Setting Note

If the Source Column type is character, an Else If condition can be implemented in the Range File Column List. This is implemented by putting a tilde “~” in the list and is used for a catchall. If a match is found for the Source Column's data, use the range listed for it. Else If a tilde “~” is found in the list, use the range listed for the tilde. This allows a few key ranges to be used for specific Source Column's values, with a general range for all others.

Merchantable Height Range File, Column Range

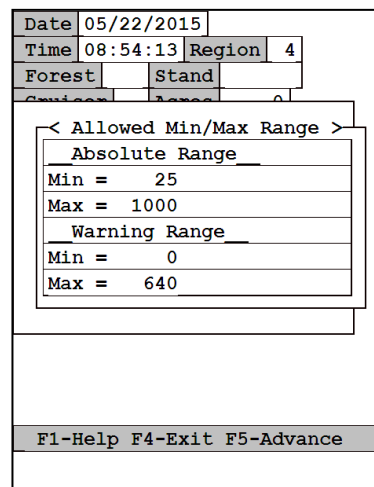
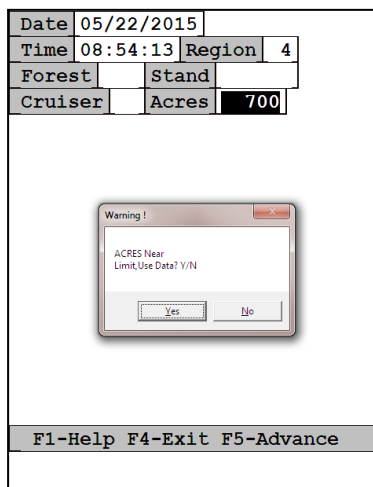
Range File, Column Range restricts user input to minimum/maximum values based on the data range from a previous column.

17. Select Tree in the Hierarchy window and MerchHght in the Columns window.
18. Select the Error Checks under Column Tabs.
19. Click on the down arrow for Error Check Type and select Range File, Column Range.
20. Click the down arrow for the Source Column and select Tree.'TotalHght'. Permitted values for MerchHght of a tree will depend on values in the TotalHght column.
21. Click the Create button.
22. Click OK to accept MerchHgh as the file name.
23. Key in the values shown. The first two columns refer to values in the TotalHght column. The last two columns contain permitted values for MerchHgh.
24. Click Save. A file has been created named MerchHgh.c1c.

Create One-Column Range for Column 'MerchHght'				
	COLMIN	COLMAX	MIN	MAX
1	0	24	0	0
2	25	40	0	1
3	41	56	0	2
4	57	72	0	3
5	73	88	0	4
6	89	104	0	5
7	105	120	0	6
8	121	136	0	7
9	137	152	0	8
10	153	168	0	9
11	169	184	0	10
12	185	300	0	11

Test Range Error Checks

1. Click the Compile button.
2. Click the Test button.
3. Click OK on the DPM Test Defaults. Press any key.
4. Select Acres.
5. Press F2. Min and Max range limits momentarily appear.
6. Key in 700 and press Enter. Observe the warning.
7. Press Y to use data.



8. Type data into the Stand field.
9. Press the F5 key to move to level 2.
10. Type a number into the Plot field.
11. Press the F5 key to move to level 3.
12. Press ENTER to select Tree.
13. Type a number and press ENTER.
14. In the Spec field press F2 for a list of species.
15. Use the up/down arrows to select a species code. Press ENTER.
16. Press F2 for a corresponding TotalHght range.
17. Type "50" and press ENTER.
18. Press F2 for a corresponding MerchHght range.

Stand	S10053	Plot	1
Tree	Spec	TotalHght	MerchHght
1	STR TRA MEANING		
	001 AF Alpine Fir		
	002 BP Bull Pine		
	003 C Cedar		
	004 DF Douglas Fir		
	005 L Larch		
	006 LPP LodgePole Pine		
	007 PP Ponderosa Pine		
	008 WP White Pine		
	009 YP Yellow Pine		
	< Choices:9 >		
Tree Species			
F1-Help F4-Exit F5-Advance			

Stand	S10053	Plot	1
Tree	Spec	TotalHght	MerchHght
1	AF	0	0
< Allowed Min/Max Range >			
Relative Range			
Min = 0			
Max = 75			
F1-Help F4-Exit F5-Advance			

Stand	S10053	Plot	1
Tree	Spec	TotalHght	MerchHght
1	AF	50	0
< Allowed Min/Max Range >			
Relative Range			
Min = 0			
Max = 2			
F1-Help F4-Exit F5-Advance			

19. Type "2" and press ENTER.
20. Press the down arrow to add a new line.
21. Repeat steps 13 – 19 several times, selecting other Spec codes. Observe how different corresponding lists appear.
22. Press F4 or Esc/Y until you return to the Application Generator.