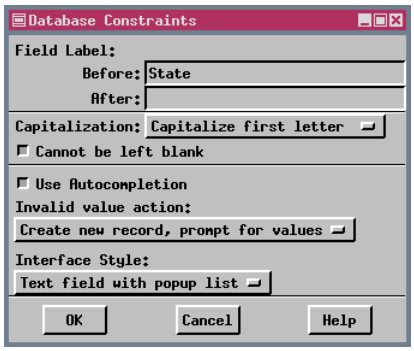
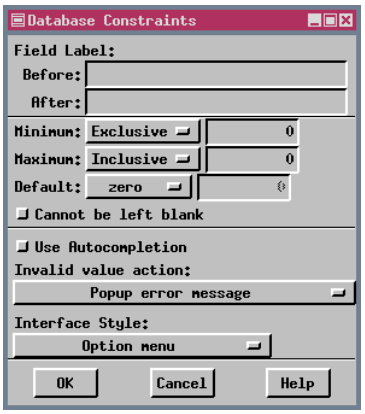
Constraining Database Field Values

You may anticipate a number of untrained personnel, such as temporary help, entering values into a database you design. You may also need to enter values without a keyboard under field conditions. Placing constraints on the values allowable for database fields lets you guide anyone entering data values to the choices acceptable to the database designer, which increases the accuracy and reproducibility of observations. If all field values are constrained to be choices from a list, the need for a keyboard is also eliminated.

There are two versions of the Database Constraints window: one for alphanumeric fields (at left below) and the other for numeric fields (below, right). In addition to placing constraints on a field, you can change the label to the left of the field and add a label to the right of the field, which may greatly enhance immediate understanding of reasonable field values. This feature was previously available only if you created a separate form for viewing the records in a table.

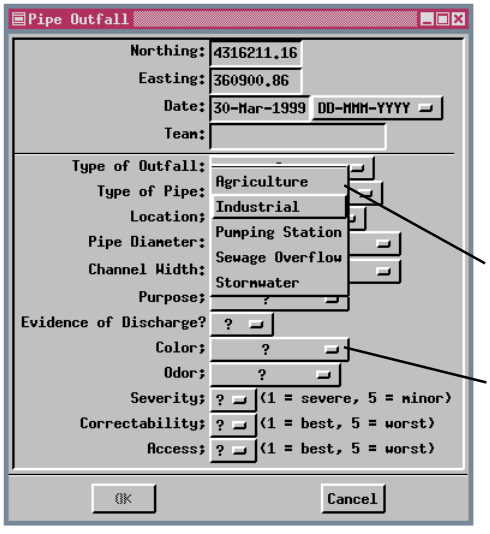


This panel appears only if the field selected is a foreign key field.



You set database constraints on a field by field basis by clicking on the Constraints button in the table definition window. The constraints you designate apply to data entry only in single record view; data entry in the corresponding tabular view is unconstrained. With string fields, you can specify capitalization restrictions (no restriction, all upper case, all lower case, or initial capital). Regardless of how you enter the string, the capitalization will be altered to match the specified constraint. For numeric fields, you can enter minimum and maximum allowable values for a field and the default value to supply. If a number entered is less than the minimum, it will be changed to the minimum, and numbers greater than the maximum are changed to the maximum. You specify whether a field can be left blank during data entry. This specification can only be enforced in cases where you have to click an OK button to complete data entry, such as in the sample table from the Data Logger AppliDat shown below.

The Database Constraints window contains an additional panel when the field selected is a foreign key field. This panel lets you specify how to get the values from the primary key field in the designated table. You can turn on Autocompletion, which will complete your entry with the first found match to what you have already typed. You may only have to type a few characters of many, depending on the actual field values, to get the correct entry. You also specify the interface style for the field and what action to take if the value entered is not one of the values in the table from which the foreign key field takes its values. The interface style choices are text field, text field with popup list, and option menu. The first option requires a keyboard, and autocompletion can be used. The second and third options have you choose from existing values, with the popup list being preferable to the option menu when the list of key field values is long. If the first option is selected and the entered value does not match one of the values in an associated primary key field, you can choose to accept it anyway, popup an error message, create a new record filled in with the defaults, or create a new record and prompt for values.



option menu for field values

default option menu value is a question mark (?)

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