

Chapter 2.

# *Character Functions*



*From changing the case of a letter to creating expressions for importing data, character type functions can manipulate both simple and complex data.*

## *Chart Chooser*

<b>Topic</b>	<b>Chart</b>	<b>Page</b>
“Alphabetical listing with syntax”	9	30
“Changing and locating memo field strings”	7	26
“Changing and replacing character strings and substrings”	4	24
“Formatting fields, strings and words”	1	20
“Locating positions of words”	5	24
“Locating substring positions”	6	25
“Miscellaneous character functions”	3	21
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“XBasic and advanced”	8	26

## Finding the right character function

### Understanding character strings

#### TERMINOLOGY

The term character string is important to learn. As you read through this section, you will soon come to realize that it is not enough to refer to fields and words because Alpha Five can identify and make changes on even small parts of fields.

#### DEFINITIONS

A **word** is “any sequence of characters that is separated on either end by spaces, punctuation marks, or the beginning or end of the field.”

**Character strings** are made up of letters, symbols and words, either alone or grouped together. Character strings may also include numbers if they are placed in a character type field.\*

A **substring** is a part of the character string.

- **Word:** Mary; Maple; Marris; Lane; I; love; chocolate.
- **Ch str:** Mary; Mary Maple; 506 Marris Lane; I love chocolate; \$\$\$; (732) 842-3000.
- **Substr:** Ma; ar; ry; love choc; \$\$; 842-3000.

For space considerations, we will often use the abbreviation “**ch str**” or “**str**” when referring to character strings.

A developer thinks in terms of strings and substrings as well as fields and words.



THINK LIKE A DEVELOPER

#### CASE SENSITIVITY

Several character functions are case sensitive. That means that you must type the case exactly as it appears in the field in order to find a match. In most instances, for every case sensitive function, there is one that is case insensitive. We have used the following abbreviations in both Part 1 and Part 2.

- **CS** = Case Sensitive
- **CI** = Case Insensitive

If there is no notation, the function is case insensitive.



GENIES†

Before you go nuts writing expressions, see if Alpha has a genie to do the work for you. Genies are also a wonderful way to learn how to write expressions and they can often be adapted to meet your needs. “Exploring character string genies” on page 135 outlines and gives the expressions created by some of the Genies.

Expression creating Genies are available throughout Alpha Five. Of particular note is the Update Operation‡.

\*. You may apply the Auto-Increment Field Rule to numbers in a character field, but you cannot do mathematical calculations.

†. Alpha Five “Genies” are similar to “Wizards” used by Microsoft in their software programs to assist the user by offering a selection of choices.

‡. Alpha Five Control Panel > Operations Tab, Click New, Choose Update Records and select a table. Click *Create Using Genie*. The Appendix has a print-out of some of the Genie-created expressions.

## Grouping for easy reference

A large selection of functions is available for fields, words, character strings and substrings.

Since the first step is to define the proper function for your needs, we have organized this chapter as follows:

- “Part 1: Selecting character functions” begins on page 18.
- “Part 2: Using character functions” begins on page 28.

### EXAMPLES

For ease in understanding, the examples in “Part 1: Selecting character functions” are given in text. “Part 2: Using character functions” gives examples of using these functions with fields.

## *Part 1: Selecting character functions*

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### **FORMATTING AND MANIPULATING CHARACTER STRINGS**

We begin with the functions designed to change the formatting or otherwise manipulate the character string. These are straightforward and fairly easy to understand. They are grouped as follows:

- Chart 1, “Formatting fields, strings and words,” on page 20.
  - Change formatting, including changing case of fields, strings and words.\*
  - Pad a string on one or both sides.
- Chart 2, “Templates, non-alpha & non-numeric strings,” on page 21.
  - Strip non-alpha & non-numeric strings, including spaces.
  - Add or remove masks.
  - Insert spaces between fields.
- Chart 3, “Miscellaneous character functions,” on page 21.
  - Change the abbreviation for a state (US) or a province (Canada) to its full name.
  - Create duplicate strings.
  - Create random strings.
  - Access the value of a field in the previous record.

### **IMPORTING DATA**

The next group of functions are for changing and/or finding elements of long text strings such as those that can occur when importing data.†

The Import Genie will help you put strings into fields, however, there are times when you may need to manipulate the strings yourself. There may even be times when the best tactic is to import the entire string into one field and write

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\*. Formatting such as bolding, underlining and centering of text is done at Field Properties.

†. Most of your tables are probably designed with fields that separate data into small bits of text, such as first\_name, last\_name, etc. If you do have fields with multiple words, these functions may be used to act on those, also.

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an Update Operation to separate the string into several fields, using functions that locate the words, strings and substrings within the longer string.

This can present a challenge for the developer because the data comes over in such a wide variety of character strings. In the following example, you may need to extract the 4th string so that you can put “Liberty Manuals Company” into the **Company** field.

- Susan, Hussey, Bush, Liberty Manuals Company

```
word("Susan, Hussey, Bush, Liberty Manuals Com-  
pany", 4, ", ")
```

- The WORD function can find individual words or, as in the case above, words after a comma or other separator.\*

This group consists of:

- Chart 4, “Changing and replacing character strings and substrings,” on page 24.
  - Change values and spacing.
  - Blank specific positions.
  - Replace strings and substrings.
- Chart 5, “Locating positions of words,” on page 24.
  - Locate a word by its numeric position or length.
  - Return position of word in numeric value.
- Chart 6, “Locating substring positions,” on page 25.
  - Return position of substring in numeric value.
- Chart 7, “Changing and locating memo field strings,” on page 26.
  - Functions that work with Memo text strings.

These functions are often combined with others in this chapter. (See “Handling special conditions” on page 35.) The expressions written by the Update Genie also give excellent examples. They may be viewed at Chart 1, “Update Operation Genie,” on page 135.

## FUNCTIONS FOR ADVANCED USERS

Some functions have been designed for XBasic only and/or for special situations. The reader is referred to the Alpha Five “Expressions Functions Reference” for details on their use.

- Chart 8, “XBasic and advanced,” on page 26.
  - Ascii codes.
  - Delivery point codes (PostNet).
  - Expression evaluation.
  - Numeric grading of soundex values.
  - Word functions that act on CRLF delimited fields.
  - Positions of words, strings and substrings.

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\*. WORD: See also “Word + Len” on page 38.

- Replacing and scoring strings.
- Various actions for CRLF lists.

**Chart 1: Formatting fields, strings and words**

Use	Purpose	Example	Syntax Page	Function
<b>Blanks, trim</b>	Remove leading and/or trailing blanks. <b>All:</b> Both sides of string <b>Left:</b> Left of string <b>Right:</b> Right of string	" <b>Steele</b> " to " <b>Steele</b> " " <u>Steele</u> " to " <b>Steele</b> " " <b>Steele</b> " to " <b>Steele</b> "	30 31 32	<b>ALLTRIM</b> <b>LTRIM</b> <b>RTRIM &amp; TRIM</b>
<b>Field, pad</b>	Pad with a string with characters or symbols. <b>Both Sides:</b> Good for title on report. <b>Left Side:</b> Good for adding repeated message. <b>Right Side:</b> Good for adding a symbol.	5000 to *****\$5000***** *****\$100 50 -----	31 31 31	<b>PADC</b> <b>PADL</b> <b>PADR</b>
<b>String: Change</b>	Extremely flexible. Can work with any field type. Has many formatting codes. <sup>a</sup>	LIBERTY MANUALS to <b>LIBERTY MANUALS</b>	33	<b>TRANSFORM</b>
<b>String: Lowercase</b>	•Convert entire ch str to lowercase. •Change all ch <b>except</b> 1st letter in str.	"Mary Jane" or " <b>MARY JANE</b> " to " <b>mary jane</b> " LIBERTY MANUALS to <b>Liberty manuals</b> . liberty manUALS to <b>liberty manuals</b>	31 31	<b>LOWER</b> <b>NF_LOWER</b>
<b>String: Uppercase</b>	•Capitalize the first letter of a ch str. •Convert ch str to uppercase and remove trailing blanks. •Convert entire ch str to uppercase.	"mary jane" to " <b>Mary jane</b> " "bill_" to " <b>BILL</b> " "bill_" to " <b>BILL</b> _"	30 33 33	<b>F_UPPER</b> <b>UT</b> <b>UPPER</b>
<b>Word: Lowercase</b>	Does not change 1st letter in word. Changes all others to lowercase.	LIBERTY MANUALS to <b>Liberty Manuals</b> liberty ManUALS to <b>liberty Manuals</b>	31	<b>NW_LOWER</b>