

# R:BASE eXtreme 9.5



## Dotted Versus Ampersand Variables



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*by R:BASE Technologies, Inc.*

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**Part**



## 1 Introduction

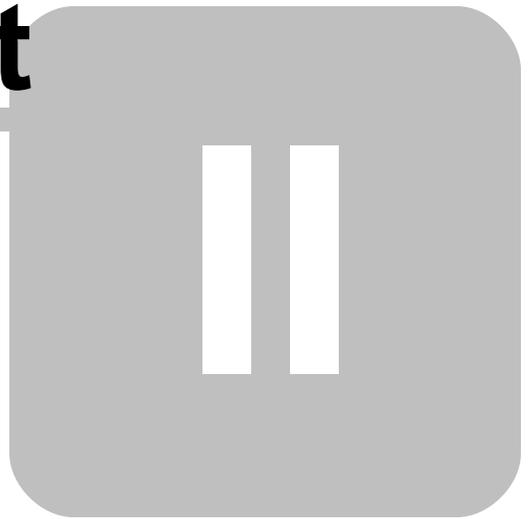
Variables hold temporary values which cease to exist when you exit from R:BASE. Variables are known across applications unless they are explicitly removed. Variables hold column values, constants, results of calculations and parts of R:BASE commands. The value of the variable determines how it is used. A variable that contains part of an R:BASE command must be evaluated differently than a variable that contains values.

A variable name may be up to 18 characters long in R:BASE eXtreme 9.5 (32). In R:BASE eXtreme 9.5 (64), a variable name may be up to 128 characters long. The name should not include any of the arithmetic operators (+, -, /, \*, \*\*, %) or concatenation operators (+, &) because R:BASE may mistake the variable name for an expression.

Many R:BASE commands create variables and put values into the variable. Some of the most commonly used are: SET VAR, COMPUTE, SELECT, DIALOG and CHOOSE. Commands whose syntax diagram includes varname indicates a variable can be used in the command.

The following covers the differences between dotted and ampersand variables.

**Part**



## 2 Dotted Variables

Dotted variables are by far the most common R:BASE variables. Most variables are used to hold values. When you use a variable in a calculation or as a comparison value, you "dot" the variable, i.e. preface its name with a period, ".". The period looks like a dot, hence the name "dotted variable." The dot tells R:BASE to use the value contained in the variable.

A rule of thumb for when to "dot" a variable is to always "dot" the variable when it is on the right side of the operator. Dotted a variable basically turns it into a constant value. R:BASE looks only at the value of the variable when it is dotted. R:BASE doesn't look at the datatype, just at the value the variable contains. That's why you can have a TEXT datatype variable (result of a DIALOG command, for example) containing a value that looks like a DATE and use that variable to compare to a DATE datatype column or variable.

Note that in expressions, R:BASE checks the datatype of a dotted variable. An expression is anything enclosed in parentheses. R:BASE verifies the datatype in expressions to make sure the expression is valid. You can't add an INTEGER to a TEXT for example. Dotted variables are commonly used in WHERE clauses and in calculations with other variables.

Example 01:

```
SET VAR vDate DATE = 11/19/2001
SELECT * FROM TransMaster WHERE TransDate <= .vDate
```

The example selects all the records from the TransMaster table where the value in the column TransDate is less than or equal to the value contained in the variable vdate.

Example 02:

```
SET VAR vOrder INTEGER = 20001
SET VAR vAmount CURRENCY = NULL
SET VAR vShip TEXT = NULL
SET VAR vFreight CURRENCY = NULL
SET VAR vTax CURRENCY = NULL
SET VAR vState TEXT = NULL
SELECT NetAmount, ShipMethod, StateAbr INTO +
    vAmount INDIC IvAmount, +
    vShip INDIC IvShip, +
    vState INDIC IvState +
    FROM Orders WHERE OrderNum = .vOrder
IF vShip = 'AIR' THEN
    SET VAR vFreight = $11.00
ELSE
    SET VAR vFreight = $5.00
ENDIF
SET VAR vAmount = (.vAmount + .vFreight)
SELECT TaxRate INTO vTax INDIC IvTax +
    FROM States WHERE StateAbr = .vState
SET VAR vAmount = (.vAmount+(.vAmount*.vTax))
```

On the right side of the equals sign (the operator), the variable is dotted. On the left side of the operator, in the IF and the SET VAR commands, the variable is referenced by its name only, it is not dotted.

When using the syntax diagrams and on-line HELP, varname means use the variable name only, .varname indicates you use a dotted variable in that position. A dotted variable can also be used any place you see value in a syntax diagram.

Dotted variables are used in Form and Report expressions as they are in the SET VAR command. On the right side of the operator, dot the variable.

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### 3 Ampersand Variables

You can't dot a variable when it contains part of a command - a table or column name, or an ORDER BY or WHERE clause. When a variable contains part of a command, its name is prefaced with an ampersand, "&", and it is called an ampersand variable. The "&" in front of the variable name tells R:BASE that the variable contains part of the command, not a value, and the contents of the variable are used when parsing the command. Don't confuse the ampersand that prefaced a variable name with the ampersand that is used to concatenate TEXT values.

Ampersand variables are most often used to hold table and column names and WHERE and ORDER BY clauses. By using ampersand variables to hold column and table names, you can use the same command to select data from different tables. The CHOOSE command displays menus of available tables and columns. For example,

Example 01:

```
SET VAR vTable TEXT = NULL
SET VAR vColList TEXT = NULL
CLS
CHOOSE vTable FROM #TABLES TITLE 'Choose Table' +
  CAPTION 'List of Tables' LINES 18 FORMATTED
CLS
CHOOSE vColList FROM #COLUMNS IN &vTable +
  CHKBOX TITLE 'Choose Column(s)' CAPTION 'List of Columns' +
  LINES 18 FORMATTED
```

Each time, a different table and different columns can be selected. The CHOOSE...FROM #TABLES automatically displays a menu of all user defined tables in the database. Use #TBLVIEWS to include view names in the menu. The CHOOSE...FROM #COLUMNS automatically displays a menu of all the columns in the specified table or view. Including the CHKBOX option lets the user select the columns to view. The values selected from the menus are placed into variables. The variables might look like this:

```
vTable = Employee TEXT
vColList = Empid,EmpLname,EmpPhone,EmpExt TEXT
```

The variables are then used in any command that uses a table name or column list. Where you see Column names or Table/View name you can substitute an ampersand variable that contains the Column, Table or View name. The variables must be used as ampersand variables to tell R:BASE they contain part of the command.

Example 02:

```
BROWSE &vColList FROM &vTable
```

To prompt for an ORDER BY clause, use the CHKSORT option with the CHOOSE ... FROM #COLUMNS.

Example 03:

```
SET VAR vOrderBy TEXT = NULL
CHOOSE vOrderBy FROM #COLUMNS IN &vTable CHKSORT +
  TITLE 'Choose Column(s)' CAPTION 'Order By' LINES 18 FORMATTED
```

The CHKSORT option prompts for Ascending or Descending order just like the R:BASE sort menus. The variable contains ASC or DESC as well as the column names. It might look like this:

```
vOrderBy = EmpLname ASC,EmpFname ASC TEXT
```

In the command, add the keywords ORDER BY with the ampersand variable containing the columns to order by.

Example 04:

```
BROWSE &vColList FROM &vTable ORDER BY &vOrderBy
```

**Part**



## 4 Summary

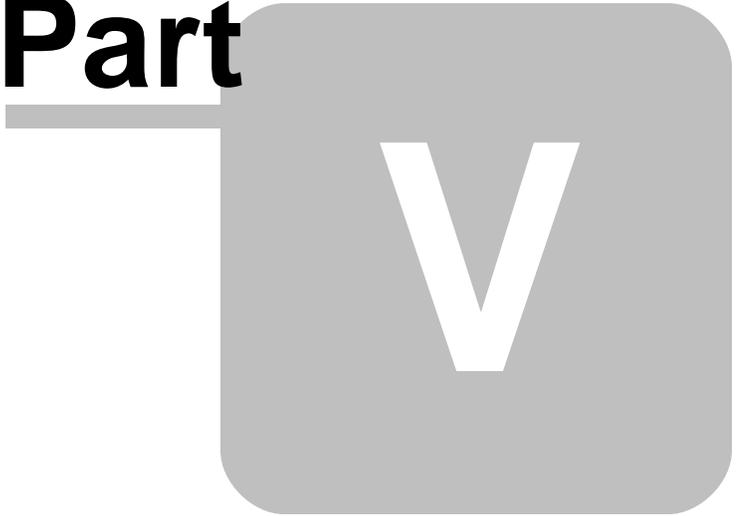
### Dotted Variables

1. The variable is used to hold a value.
2. Should be used when R:BASE is to use the "value" contained in the variable.
3. Should be used when R:BASE is to use the variable in a calculation or as a comparison value.
4. A rule of thumb for when to "dot" a variable is to always "dot" the variable when it is on the right side of the operator.
5. Dotted variable basically turns it into a constant value. R:BASE looks only at the value of the variable when it is dotted. R:BASE doesn't look at the data type, just at the value the variable contains. That's why you can have a TEXT data type variable (result of a CHOOSE or DIALOG command, for example) containing a value that looks like a DATE and use that variable to compare to a DATE data type column or variable.
6. In expressions, R:BASE checks the data type of a dotted variable. An expression is anything enclosed in parentheses. R:BASE verifies the data type in expressions to make sure the expression is valid. For example, an INTEGER cannot be added to TEXT.
7. Dotted variables are used in Form and Report expressions, just as they are in the SET VAR command. When on the right side of the operator, dot the variable.
8. Dotted variables are commonly used in WHERE clauses and in calculations with other variables.

### Ampersand Variables

1. When a variable contains part of a command, its name is prefaced with an ampersand, "&", and it is called an ampersand variable. The "&" in front of the variable name tells R:BASE that the variable contains part of the command, not a value, and the contents of the variable are used when parsing the command.
2. You cannot dot a variable when it contains part of a command - a table or column name, or an ORDER BY or WHERE clause.
3. Because an ampersand variable is part of a command, it can't be used inside parentheses. Parentheses indicate expressions, expressions are parsed separately from the rest of the command. You need to include the parentheses as part of the variable value. Sub-selects and IN lists are enclosed in parentheses and you can't use an ampersand variable inside them, you need to include the entire sub-select or IN list, including parentheses, as the variable value.
4. Ampersand variables are most often used to hold table and column names and WHERE and ORDER BY clauses. By using ampersand variables to hold column and table names, you can use the same command to select data from different tables. The CHOOSE command displays menus of available tables and columns.
5. It is important to not confuse the ampersand that prefaces a variable name with the ampersand that is used to concatenate TEXT values.

**Part**



## 5 Feedback

### **Suggestions and Enhancement Requests:**

From time to time, everyone comes up with an idea for something they'd like their software to do differently.

If you come across an idea that you think might make a nice enhancement, your input is always welcome.

Please submit your suggestion and/or enhancement request to the R:BASE Developers' Corner Crew (R:DCC) and describe what you think might make a nice enhancement. In R:BASE, the R:DCC Client is fully integrated to communicate with the R:BASE development team. From the main Menu Bar, choose "Help" > "RBG9 R:DCC Client". If you do not have a login profile, select "New User" to create one.

If you have a sample you wish to provide, have the files prepared within a zip archive prior to initiating the request. You will be prompted to upload any attachments during the submission process.

Unless additional information is needed, you will not receive a direct response. You can periodically check the status of your submitted enhancement request.

If you are experiencing any difficulties with the R:DCC Client, please send an e-mail to [rbg9rdcc@rbase.com](mailto:rbg9rdcc@rbase.com).

### **Reporting Bugs:**

If you experience something you think might be a bug, please report it to the R:BASE eXtreme Developers' Corner Crew. In R:BASE, the R:DCC Client is fully integrated to communicate with the R:BASE development team. From the main Menu Bar, choose "Help" > "RBG9 R:DCC Client". If you do not have a login profile, select "New User" to create one.

You will need to describe:

- What you did, what happened, and what you expected to happen
- The product version and build
- Any error messages displayed
- What computer operating system is in use
- Anything else you think might be relevant

If you have a sample you wish to provide, have the files prepared within a zip archive prior to initiating the bug report. You will be prompted to upload any attachments during the submission process.

Unless additional information is needed, you will not receive a direct response. You can periodically check the status of your submitted bug.

If you are experiencing any difficulties with the R:DCC Client, please send an e-mail to [rbg9rdcc@rbase.com](mailto:rbg9rdcc@rbase.com).

**Part**



## 6 Useful Resources

- . R:BASE Home Page: <http://www.rbase.com>
- . R:BASE eXtreme Home Page: <http://www.rbaseextreme.com>
- . Up-to-Date R:BASE Updates: <http://www.rupdates.com>
- . Sample Applications: <http://www.rbasecommunity.com>
- . General R:BASE Syntax: <http://www.rsyntax.com>
- . Technical Documents - From The Edge: <http://www.razzak.com/fte>
- . More Sample Applications: <http://www.razzak.com/sampleapplications>
- . Education and Training: <http://www.rbaseuniversity.com>
- . Upcoming Events: <http://www.rbase.com/events>
- . R:BASE Beginners Tutorial: <http://www.rtutorial.com>

## Notes