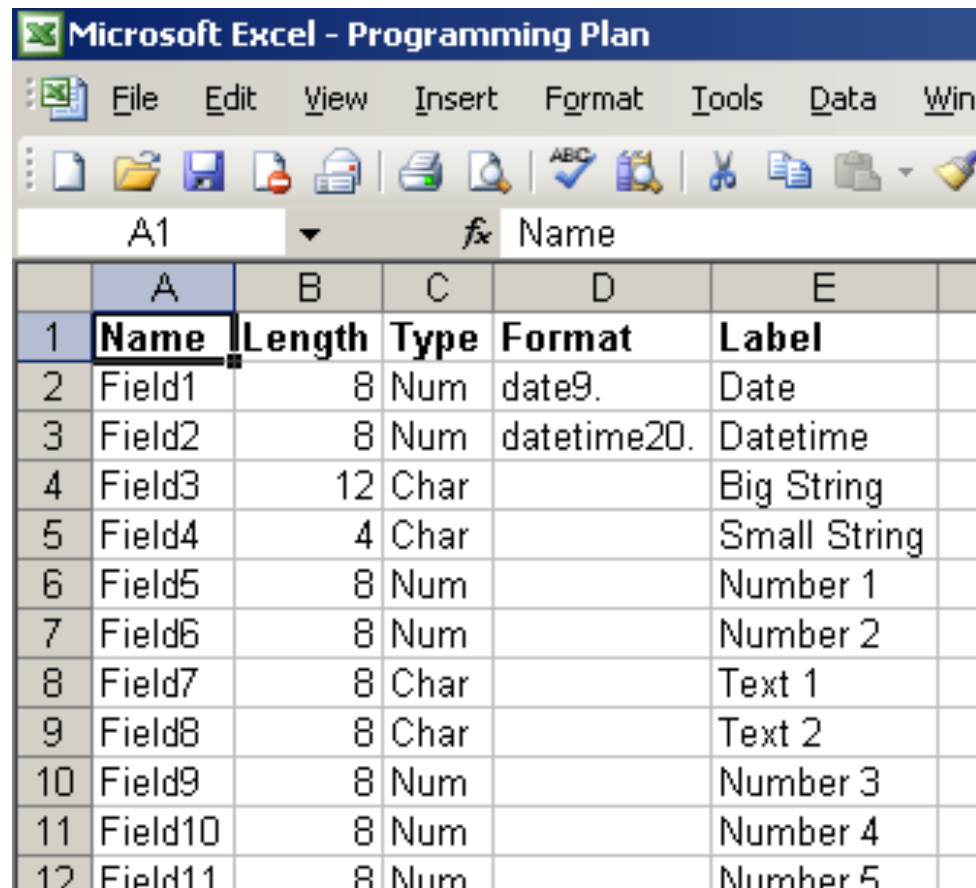


Using Microsoft Excel to write SAS[®] code

Andrew Boyd

The Programming Plan



A screenshot of a Microsoft Excel spreadsheet titled "Microsoft Excel - Programming Plan". The spreadsheet contains a table with 12 rows and 6 columns. The columns are labeled A through E, and the rows are numbered 1 through 12. The table data is as follows:

	A	B	C	D	E
1	Name	Length	Type	Format	Label
2	Field1	8	Num	date9.	Date
3	Field2	8	Num	datetime20.	Datetime
4	Field3	12	Char		Big String
5	Field4	4	Char		Small String
6	Field5	8	Num		Number 1
7	Field6	8	Num		Number 2
8	Field7	8	Char		Text 1
9	Field8	8	Char		Text 2
10	Field9	8	Num		Number 3
11	Field10	8	Num		Number 4
12	Field11	8	Num		Number 5

The ATTRIB Statement

Microsoft Excel - Programming Plan

File Edit View Insert Format Tools Data Window

A1 Name

	A	B	C	D	E
1	Name	Length	Type	Format	Label
2	Field1	8	Num	date9.	Date
3	Field2	8	Num	datetime20.	Datetime
4	Field3	12	Char		Big String
5	Field4	4	Char		Small String
6	Field5	8	Num		Number 1
7	Field6	8	Num		Number 2
8	Field7	8	Char		Text 1
9	Field8	8	Char		Text 2
10	Field9	8	Num		Number 3
11	Field10	8	Num		Number 4
12	Field11	8	Num		Number 5

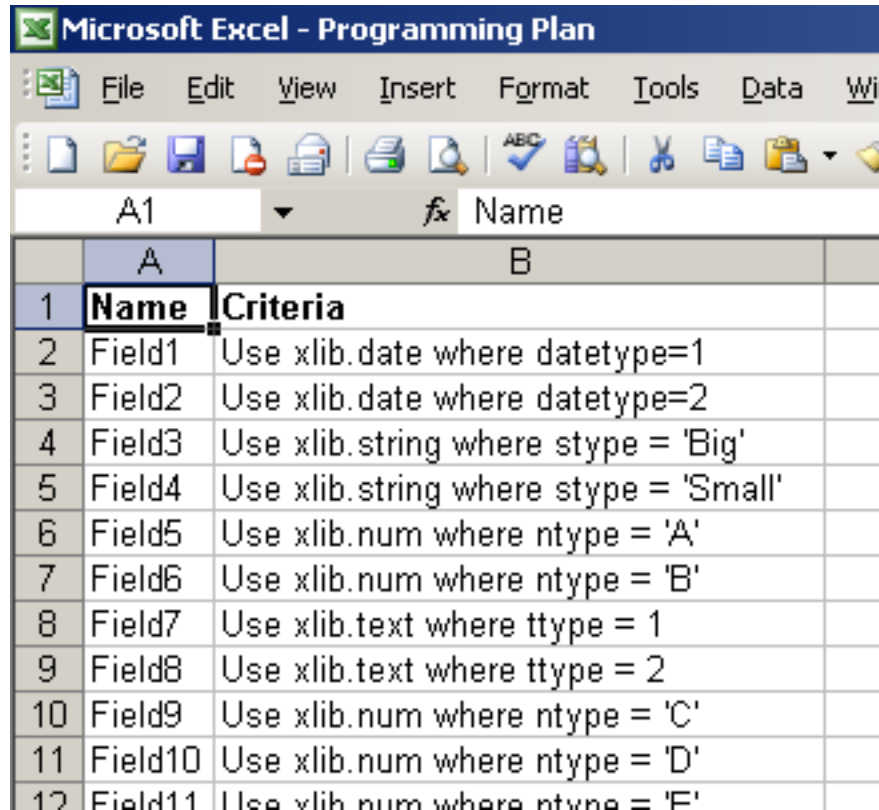
=*"attrib "*&
LOWER(A2)&
" length = "&
IF(C2="Char", "\$", "")&
B2&
IF(D2<>"", " format = "&D2, "")&
" label = "&
E2&"", "

attrib field1 length = 8 format = date9. label = 'Date';

The ATTRIB Statement

Microsoft Excel - Programming Plan						
File Edit View Insert Format Tools Data Window Help						
A1 fx Name						
	A	B	C	D	E	F
1	Name	Length	Type	Format	Label	Attrib
2	Field1	8	Num	date9.	Date	attrib field1 length = 8 format = date9. label = 'Date';
3	Field2	8	Num	datetime20.	Datetime	attrib field2 length = 8 format = datetime20. label = 'Datetime';
4	Field3	12	Char		Big String	attrib field3 length = \$12 label = 'Big String';
5	Field4	4	Char		Small String	attrib field4 length = \$4 label = 'Small String';
6	Field5	8	Num		Number 1	attrib field5 length = 8 label = 'Number 1';
7	Field6	8	Num		Number 2	attrib field6 length = 8 label = 'Number 2';
8	Field7	8	Char		Text 1	attrib field7 length = \$8 label = 'Text 1';
9	Field8	8	Char		Text 2	attrib field8 length = \$8 label = 'Text 2';
10	Field9	8	Num		Number 3	attrib field9 length = 8 label = 'Number 3';
11	Field10	8	Num		Number 4	attrib field10 length = 8 label = 'Number 4';
12	Field11	8	Num		Number 5	attrib field11 length = 8 label = 'Number 5';

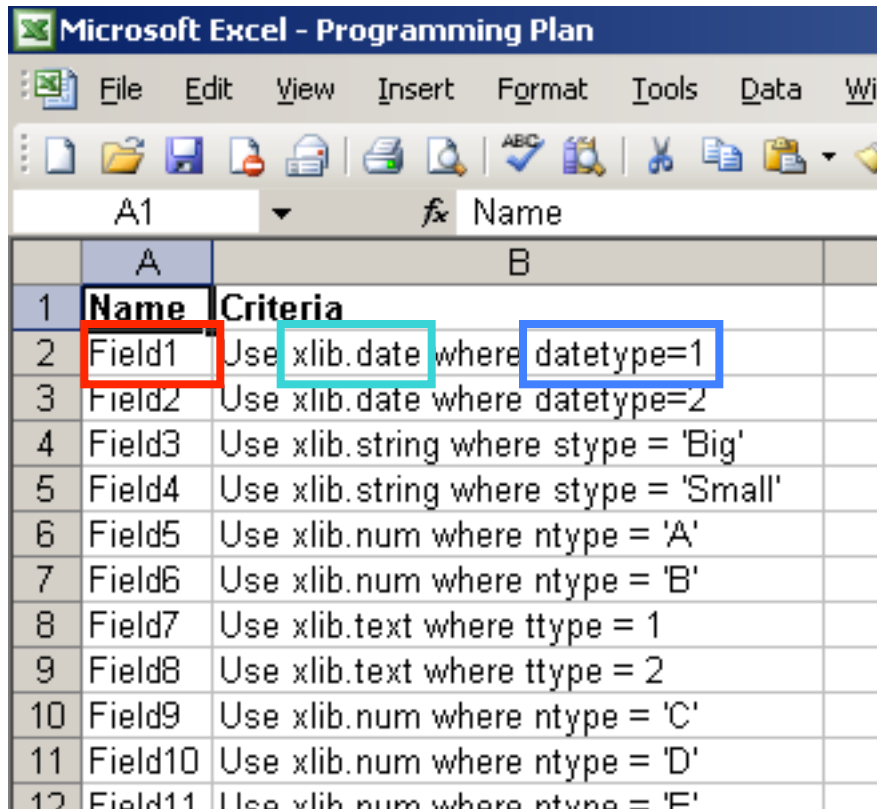
Macro Invocations



The screenshot shows the Microsoft Excel interface with the title bar 'Microsoft Excel - Programming Plan'. The menu bar includes File, Edit, View, Insert, Format, Tools, Data, and Windows. The toolbar contains various icons for file operations and editing. The active cell is A1, and the formula bar shows 'Name'. The following table is displayed in the worksheet:

	A	B
1	Name	Criteria
2	Field1	Use xlib.date where datatype=1
3	Field2	Use xlib.date where datatype=2
4	Field3	Use xlib.string where stype = 'Big'
5	Field4	Use xlib.string where stype = 'Small'
6	Field5	Use xlib.num where ntype = 'A'
7	Field6	Use xlib.num where ntype = 'B'
8	Field7	Use xlib.text where ttype = 1
9	Field8	Use xlib.text where ttype = 2
10	Field9	Use xlib.num where ntype = 'C'
11	Field10	Use xlib.num where ntype = 'D'
12	Field11	Use xlib.num where ntype = 'E'

Macro Invocations



The screenshot shows the Microsoft Excel - Programming Plan window. The table below is the content of the macro table, with columns A and B. The first row is the header, and the following 11 rows are data. The cells are color-coded: Field1 is red, xlib.date is cyan, and where datatype=1 is blue.

	A	B
1	Name	Criteria
2	Field1	Use xlib.date where datatype=1
3	Field2	Use xlib.date where datatype=2
4	Field3	Use xlib.string where stype = 'Big'
5	Field4	Use xlib.string where stype = 'Small'
6	Field5	Use xlib.num where ntype = 'A'
7	Field6	Use xlib.num where ntype = 'B'
8	Field7	Use xlib.text where ttype = 1
9	Field8	Use xlib.text where ttype = 2
10	Field9	Use xlib.num where ntype = 'C'
11	Field10	Use xlib.num where ntype = 'D'
12	Field11	Use xlib.num where ntype = 'F'

```
%macro excel_example(field, source where);  
  data &field;  
    set &source (keep=subjid &field);  
    where &where;  
  
  run;  
%mend;
```

Macro Invocations

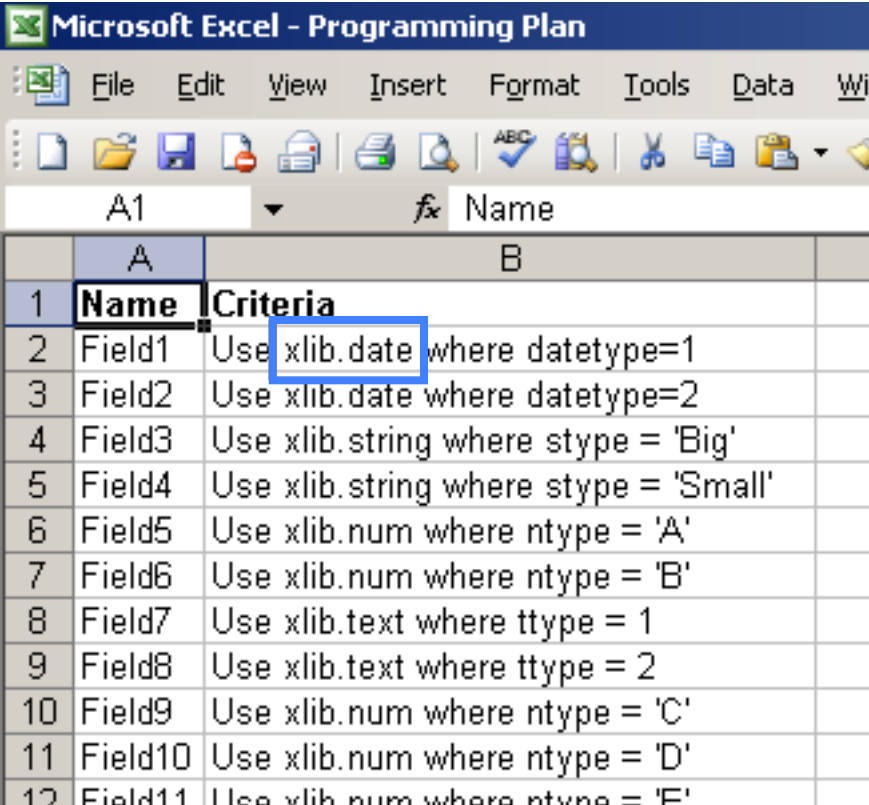
Extracting &source:

=SEARCH(" ",B2,1)

=SEARCH(" ",B2,SEARCH(" ",B2,1)+1)

=MID(B2,SEARCH(" ",B2,1),SEARCH(" ",B2,SEARCH(" ",B2,1)+1)-SEARCH(" ",B2,1))

xlib.date



Microsoft Excel - Programming Plan	
File Edit View Insert Format Tools Data Wi	
A1 Name	
A	B
1	Name Criteria
2	Field1 Use xlib.date where datatype=1
3	Field2 Use xlib.date where datatype=2
4	Field3 Use xlib.string where stype = 'Big'
5	Field4 Use xlib.string where stype = 'Small'
6	Field5 Use xlib.num where ntype = 'A'
7	Field6 Use xlib.num where ntype = 'B'
8	Field7 Use xlib.text where ttype = 1
9	Field8 Use xlib.text where ttype = 2
10	Field9 Use xlib.num where ntype = 'C'
11	Field10 Use xlib.num where ntype = 'D'
12	Field11 Use xlib.num where ntype = 'F'

Macro Invocations

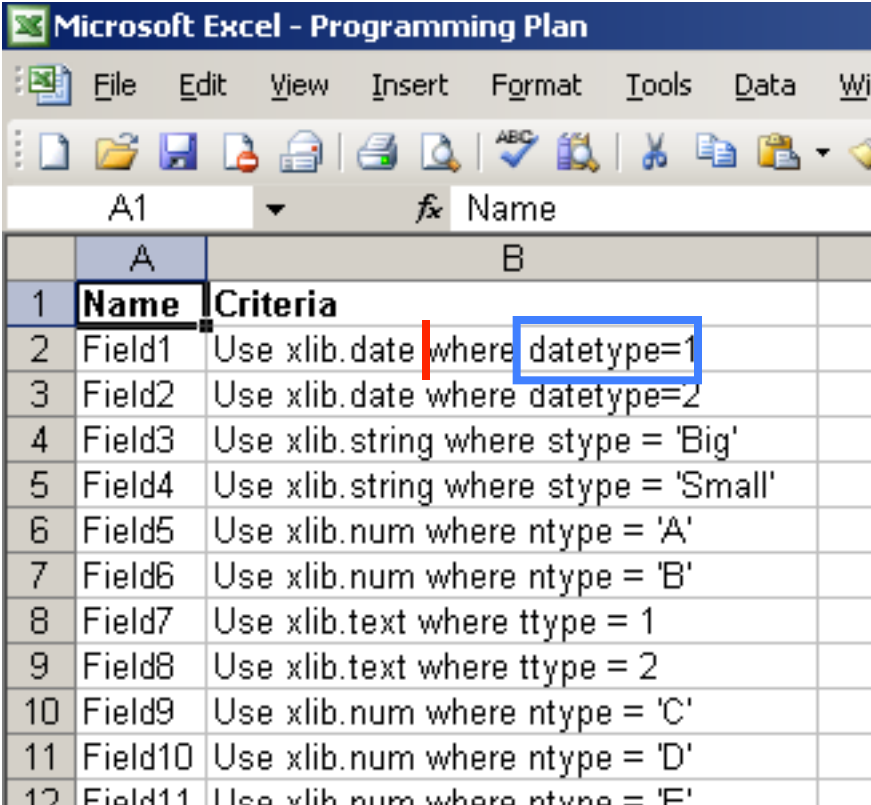
Extracting &where:

=SEARCH("where",B2,1)

=LEN(B2)

=MID(B2,SEARCH
("where",B2,1)+6,LEN(B2)-SEARCH
("where",B2,1))

datatype = 1



Microsoft Excel - Programming Plan	
File Edit View Insert Format Tools Data Win	
A1 Name	
A	B
1 Name	Criteria
2 Field1	Use xlib.date where datatype=1
3 Field2	Use xlib.date where datatype=2
4 Field3	Use xlib.string where stype = 'Big'
5 Field4	Use xlib.string where stype = 'Small'
6 Field5	Use xlib.num where ntype = 'A'
7 Field6	Use xlib.num where ntype = 'B'
8 Field7	Use xlib.text where ttype = 1
9 Field8	Use xlib.text where ttype = 2
10 Field9	Use xlib.num where ntype = 'C'
11 Field10	Use xlib.num where ntype = 'D'
12 Field11	Use xlib.num where ntype = 'E'

Macro Invocations

Microsoft Excel - Programming Plan

File Edit View Insert Format Tools Data Window Help

D2 fx =MID(B2,SEARCH("where",B2,1)+6,LEN(B2)-SEARCH

	A	B	C	D	E
1	Name	Criteria	Source	Where	
2	Field1	Use xlib.date where datatype=1	xlib.date	datatype=1	
3	Field2	Use xlib.date where datatype=2	xlib.date	datatype=2	
4	Field3	Use xlib.string where stype = 'Big'	xlib.string	stype = 'Big'	
5	Field4	Use xlib.string where stype = 'Small'	xlib.string	stype = 'Small'	
6	Field5	Use xlib.num where ntype = 'A'	xlib.num	ntype = 'A'	
7	Field6	Use xlib.num where ntype = 'B'	xlib.num	ntype = 'B'	
8	Field7	Use xlib.text where ttype = 1	xlib.text	ttype = 1	
9	Field8	Use xlib.text where ttype = 2	xlib.text	ttype = 2	
10	Field9	Use xlib.num where ntype = 'C'	xlib.num	ntype = 'C'	
11	Field10	Use xlib.num where ntype = 'D'	xlib.num	ntype = 'D'	
12	Field11	Use xlib.num where ntype = 'E'	xlib.num	ntype = 'E'	

Macro Invocations

	C	D
	Source	Where
1	xlib.date	datatype=1
2	xlib.date	datatype=2
'Big'	xlib.string	stype = 'Big'
'Small'	xlib.string	stype = 'Small'
'A'	xlib.num	ntype = 'A'
'B'	xlib.num	ntype = 'B'
	xlib.text	ttype = 1
	xlib.text	ttype = 2
'C'	xlib.num	ntype = 'C'
'D'	xlib.num	ntype = 'D'
'E'	xlib.num	ntype = 'E'

```
= "%excel_example("&
  LOWER(A2)&
  ", "&
  C2&
  ", %str("&
  D2&"));"
```

```
%excel_example(field1 , xlib.date , %str(datatype=1));
```

Comments

Microsoft Excel - Programming Plan

File Edit View Insert Format Tools Data Window Help

E2 fx ="/"&A2&" - "&B2&"*/

"&"%excel_example("&LOWER(A2)&", "&C2&", %str("&D2&"));"

	A				
1	Name	Criteria	Source	Where	Macro
2	Field1	Use xlib.date where datatype=1	xlib.date	datatype=1	/*Field1 - Use xlib.
3	Field2	Use xlib.date where datatype=2	xlib.date	datatype=2	/*Field2 - Use xlib.
4	Field3	Use xlib.string where stype = 'Big'	xlib.string	stype = 'Big'	/*Field3 - Use xlib.
5	Field4	Use xlib.string where stype = 'Small'	xlib.string	stype = 'Small'	/*Field4 - Use xlib.
6	Field5	Use xlib.num where ntype = 'A'	xlib.num	ntype = 'A'	/*Field5 - Use xlib.
7	Field6	Use xlib.num where ntype = 'B'	xlib.num	ntype = 'B'	/*Field6 - Use xlib.
8	Field7	Use xlib.text where ttype = 1	xlib.text	ttype = 1	/*Field7 - Use xlib.
9	Field8	Use xlib.text where ttype = 2	xlib.text	ttype = 2	/*Field8 - Use xlib.
10	Field9	Use xlib.num where ntype = 'C'	xlib.num	ntype = 'C'	/*Field9 - Use xlib.
11	Field10	Use xlib.num where ntype = 'D'	xlib.num	ntype = 'D'	/*Field10 - Use xlib.
12	Field11	Use xlib.num where ntype = 'F'	xlib.num	ntype = 'F'	/*Field11 - Use xlib.

="/"&A2&" - "&B2&"*/

"&"%excel_example("&LOWER(A2)&", "&C2&", %str("&D2&"));"

```

%macro excel_example(field, source, where);
    data &field;
        set &source (keep=subjid &field);
        where &where;
    run;
%mend;
/*Field1 - Use xlib.date where datatype=1*/
%excel_example(field1, xlib.date, %str(datatype=1));
/*Field2 - Use xlib.date where datatype=2*/
%excel_example(field2, xlib.date, %str(datatype=2));
/*Field3 - Use xlib.string where stype = 'Big'*/
%excel_example(field3, xlib.string, %str(stype = 'Big'));
/*Field4 - Use xlib.string where stype = 'Small'*/
%excel_example(field4, xlib.string, %str(stype = 'Small'));
/*Field5 - Use xlib.num where ntype = 'A'*/
%excel_example(field5, xlib.num, %str(ntype = 'A'));
/*Field6 - Use xlib.num where ntype = 'B'*/
%excel_example(field6, xlib.num, %str(ntype = 'B'));
/*Field7 - Use xlib.text where ttype = 1*/
%excel_example(field7, xlib.text, %str(ttype = 1));
/*Field8 - Use xlib.text where ttype = 2*/
%excel_example(field8, xlib.text, %str(ttype = 2));
/*Field9 - Use xlib.num where ntype = 'C'*/
%excel_example(field9, xlib.num, %str(ntype = 'C'));
/*Field10 - Use xlib.num where ntype = 'D'*/
%excel_example(field10, xlib.num, %str(ntype = 'D'));
/*Field11 - Use xlib.num where ntype = 'E'*/
%excel_example(field11, xlib.num, %str(ntype = 'E'));

```



Questions?

