

Chapter 4

CHARTING IN THE COMPUTER

As we charted all the basic knitted fabrics, we read the written-out instructions for both public- and private-side rows in the usual way, from left to right.

On public-side rows, we were able to show knits with the knit symbol and purls with the purl symbol, and the chart rows grew from right to left. On private-side rows, each chart row grew from left to right, but we had to swap knits and purls. Those actions were presented as charting's rules of reversal.

Toward the end of the chapter, I made the bald statement, with no demonstration, explanation, or proof of any kind, that the true rule of reversal for public-side rows was actually more general and offered us a choice: whichever way we read the written-out instructions, we add the symbols to the chart in the opposite direction, showing public-side stitches as themselves no matter which direction we read.

Paper Versus Computer

If you wondered why anybody would ever want to read written-out instructions backwards, here's the explanation. In the chapter "Charting on Paper," we saw that it's quite easy to draw the symbols with pencil on a paper chart from right to left while we read the public-side instructions in the normal direction. No big deal. We can draw symbols from right to left just as easily as we can draw them from left to right. But of course that's not how typing works. When we type, the characters always get added from left to right.

If we read public-side row instructions from left to right and just type merrily along, which direction will the chart row grow? It's not a trick question, so of course the answer is "From left to right."

But that standard typing result completely breaks the rule of reversal for public-side rows. If we read public-side instructions from left to right and simply type in the ordinary way, the symbols will be in the wrong order. Our public-side rows will in fact be charted backwards.

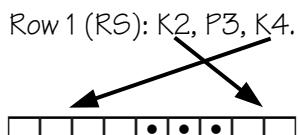
A Reminder

Unless written-out instructions have at the beginning some kind of note or warning that they're explicitly written for mirror-image knitters, all knitters must interpret the instructions as though they'll work public-side rows from right to left. That's the unwritten assumption, at least for patterns in English.

The first instruction on the line, therefore, needs to be worked on the stitch all the way

at the right end of the public-side row, which in turn means the last instruction on the line needs to be worked on the stitch at the left end of the public-side row.

Let's look at a small diagram. Since it's a public-side row, the initial pair of knit stitches must be all the way to the right, and the final four knits must be all the way to the left. The arrows show how the ordering must occur as we chart, whether we read the instruction line in the normal left-to-right direction or from the end of the line back to the beginning.



Reading Left to Right Requires an Extra Step

If we really, truly want to read the instructions for public-side rows from left to right, then we absolutely, positively cannot rely on ordinary typing to put the symbols into the chart in the correct order.

Instead of just typing along, we will have to keep moving the cursor to the correct place compared to what we've already typed. So if we read from left to right, we type in the first bit, then to get the next bit to the left of the first bit, we must manually—by hand—move the cursor to the left side of all the symbols already in the chart row.

How often do we need to do this manual re-positioning step? Every time we shift between knits and purls.

Can We Avoid the Re-Positioning?

As we see in the previous diagram, the **first** bit of the written-out instructions for a public-side row must be at the **right** end of the chart row, and the **last** bit of instructions must be at the **left** end of the chart row.

When we type, characters get added from left to right. To take advantage of that natural positioning, then for the **left-most** stitch on a public-side row to be represented by the symbol at the **left** end of the chart row, we must read the **last** bit of the written-out instructions **first**.

Now we have to reverse all the bold words to explain how we chart the stitch at the right end of the public-side row. To get the symbol for the **right-most** stitch on a public-side row to be represented by the symbol at the **right** end of the chart row, we have to read the **first** bit of the instructions **last**.

To avoid re-positioning the cursor umpteen times while charting public-side rows, we must read their instructions from the very end to the very beginning.

The Full Details

For reasons explained to the n th degree in the part four chapter “Software Options,” I construct most knitting charts using multi-column, multi-row tables in my word processor.

The Number of Table Columns

My tables usually have three columns: the left column holds the private-side row numbers, the right column holds the public-side row numbers, and the middle column holds the stitch symbols.

Since I work from printed-out charts instead of charts in an electronic device, I omit the column of private-side row numbers when I’m trying to fit the chart on one sheet of paper.

The Number of Table Rows

I put each pattern row into its own table row, so the table has the same number of rows as the pattern.

I Do Small and/or Easy Charts Differently

In some cases, primarily for small charts like so many throughout this book, I just type the charts on ordinary lines like this one, except that they use the knitting font. There is a fairly serious drawback to this technique, which is also explained at length in “Software Options.”

The HollyKnits Knitting Font

The knitting font allows us to directly type symbols for the most commonly used knitting operations, as we’ll see in later chapters. So far, we’ve used only two symbols.

k	☐	Knit
p	◐	Purl

Those are both lowercase letters (the uppercase letters have different symbols and therefore different meanings).

A Swatch with Unique Rows

The basic fabrics were too simple to be very instructive for charting in the computer, so we’ll work with a new swatch to make clear exactly how we follow the rule of reversal for public-side rows.

This swatch is small and easy like those for all the basic knitted fabrics, but its advantage for our purposes here is that all five rows are unique.

HALF-AND-HALF TRIANGLES

CO 6.

Row 1 (RS): K1, P5.

Row 2 (WS): K4, P2.

Row 3: K3, P3.

Row 4: K2, P4.

Row 5: K5, P1.

BO.



Step 1: Create the Table and Change the Font

Since we know how many rows the swatch has, we'll create a table with the same number of rows. The table will have three columns, one for public-side row numbers, one for the stitch symbols, and one for private-side row numbers.

We select the entire table and change it to the knitting font. To keep our word processor from indicating that we have “misspellings” in the stitch symbols’ column, we can select the entire middle column and set its Language to None, which is probably in the Character or Font dialog box (the menu option will probably be Format | Character or Format | Font, or we select the Character or Font entry from the right-click menu).¹

Charts in the computer, like hand-drawn charts, show row one at the bottom, with successive rows above the previous rows, exactly as we work through written-out instructions

¹ For my business, I have a Microsoft Office subscription, so my version of Word is always completely up to date. To turn off spell-checking in my version, I select the entire column, click the Review tab on the ribbon, click the Language button, and click the “Set Proofing Language” menu entry. In the dialog box, I click in the box labeled “Do not check spelling or grammar” until it has a check mark in it—not a small square and definitely not empty—then click OK. Previous versions of Word using the ribbon may have different locations and names than are given here.

with needles and yarn. We'll chart the swatch's row one in the table's bottom row and put swatch row five in the top row of the table.

Step 2: Type Up the Public-Side Row

Since we're charting public-side row one, the left column, which shows private-side row numbers, will be empty in the table's bottom row. We click in the center column of that row.

On public-side rows, we show the stitches as they are, so knits in the instructions will be charted with the knit symbol by typing

k

and purls with the purl symbol by typing

p

The rule of reversal for public-side rows is that we chart the symbols in the opposite direction of how we read the instructions. Let's walk through both reading directions.

A Reminder to MIKs

Unless the written-out directions warn us otherwise, we must assume they're expecting public-side rows to be worked right to left. If you're an MIK, remember that you must chart written-out instructions as though you're a traditional knitter.

When you get to the point of working from the chart, you will change the direction you read each chart row and you will need to redefine a few symbols, but you must chart the instructions the way traditional knitters would both chart and work them.

Option A: Read Left to Right

In this option, we read the instruction line in the normal direction, from left to right. But we immediately run into a problem because as we type, the characters are added from left to right. We need the symbols to go into the chart from right to left according to the rule of reversal for public-side rows. That means we'll need to account for this incorrect symbol ordering by doing an extra step while we type.

The written-out instructions are "K1, P5" for row one, so we get started by typing

k

in the center column. We're reading left to right, so we must add the symbols to the chart

from right to left. If we pause a moment to look at the cursor, it's on the right side of our first symbol (represented here with the |, and on the screen it's probably blinking).

k |

Since the cursor is at the right end of the symbols we've typed so far, then if we just start typing p characters to add the purl symbols, they'll be added to the chart to the right of the initial knit stitch's symbol, which is the wrong placement. To work around this issue, **we, you and I, must move the cursor to the left of all the symbols already in the chart row.** We have several ways to move the cursor to the correct spot.

- ☞ Click with the mouse to the left of all the symbols.
- ☞ Press the Left Arrow key until the cursor is to the left of all the symbols.
- ☞ Press the Home key.

Then the purl symbols will be added to the left of the knit symbol we already have, exactly as the rule of reversal requires. The | shows how the cursor has now been moved to the correct place.

| k

So having moved the cursor to the left of the knit symbol, we type

ppppp

to add the five purls.

	•••••	

If we look at the symbols in the chart from right to left, we see one knit and five purls. Since we're supposed to "K1, P5" on row one, the chart symbols have been put in the correct order.

If We Don't Move the Cursor

Let's re-chart this row without the manual step of moving the cursor.

Since we've typed a k for the first symbol, the cursor will be to its right (again represented with the |).

k |

If we now type five p characters for the purls

ppppp

they'll be put to the right of the knit stitch, which will give this partial chart.



If we read those symbols from right to left, to double-check them against the written-out instructions, this chart is telling us to work “P5, K1” instead of the correct “K1, P5.” That’s why we must move the cursor ourselves to the left of all the symbols we’ve already typed.

The Issue

This tiny swatch has only two stitch groups on row one, the K1 and the P5.² But imagine if we had to chart a very wide project. Every time we need to switch between knit groups and purl groups, we have to move the cursor all the way to the left so that the next group is added to the left of all the groups already in the chart.

Moving the cursor just one time per row for this small example isn’t annoying, but the vast majority of the time, we’ll be constantly moving the cursor so that each stitch group gets put in the correct place. All that re-positioning will be majorly annoying. (Or is that just me?)

My natural laziness always makes me look for a quicker, easier way to do something. That means that when I’m charting, I’m going to read the written-out instructions for public-side rows from right to left.

Option B: Read Right to Left

Typing adds characters from left to right. That fact doesn’t change just because we happen to be charting. We’re still adding characters from left to right as we type; they just happen to show stitch symbols instead of ordinary letters because we’re using the knitting font.

So if we want to work with—instead of fight against—the natural direction that characters are added as we type, then we must read the written-out instructions **backwards**, from right to left. We do get to type each stitch as itself, knits as knits and purls as purls, since the reversal forces us to use opposite directions to read the instructions and chart the symbols, not change the symbols we have to show.

² A *stitch group* is usually between commas in written-out instructions. So if a row’s instructions are “K2, P3, K4,” it has three stitch groups: one with two knit stitches, one with three purl stitches, and one with four knit stitches. A stitch group can also consist of just one stitch. Rows of 1x1 ribbing and seed stitch are composed of one-stitch groups that alternate between knit and purl.

Therefore, we type the row's **last** stitch group **first**, then the next-to-last stitch group, then the third-to-last group, and so on, until the final group we type is actually the first group in the written-out instructions.

Since the instructions for row one are “K1, P5,” we start by reading all the way at the very end of the instructions, where we see that the last group of stitches we work will be five purls. So we type

ppppp

The cursor, represented with the | character, will be to the right of the stitch group.

ppppp |

Reading backwards in the written-out instructions, we next come to a group consisting of a single knit stitch, so we type

k

Since the cursor was in the correct location, to the right of the purl group, the entirety of what we type for pattern row one is

pppppk

and the table now shows the symbols for row one.

	•••••	

If we look at these stitches as a traditional knitter would work them, which for a public-side row means we start at the rightmost symbol, we have “K1, P5” across the row, just as instructed.

It does take some practice to do this reverse reading, and if it's too confusing, we can use option A to put the groups in the chart in the proper order.

Finishing the Public-Side Row

Now we press Tab to move the cursor to the last column (or just click in it), and type

1

to add the public-side row number. Here's the fully charted first row.

	•••••	1

Step 3: Type Up the Private-Side Row

We'll walk through the steps to chart row two, and the other private-side row would be charted in exactly the same way.

All knitters, traditional and mirror-image, must **chart** private-side rows from left to right while swapping knits and purls.

The Row Number

Since row two is directly above row one, both in the chart and when we work with needles and yarn, the next-to-last row of the table will show row two. So we click in the left column of that table row, because private-side row numbers are to the left of the stitch symbols according to one of our earliest charting rules. We type

2

to add the row number and press Tab to move the cursor to the middle column (or we click in the middle column), where we'll type the stitch symbols.

Private-Side Row Instructions

Based on our rules of reversal, for private-side rows we can both read the written-out instructions and add the symbols to the chart from left to right, but we have to swap knits and purls.

So when we're typing any private-side row in a chart, we read the written-out instructions in the normal direction, but we have to type a lowercase

k

for the instructions' purl stitches and a lowercase

p

for the instructions' knit stitches.

For private-side rows, we don't have to do any manual re-positioning of the cursor be-

cause as we type, the characters are added to the chart row from left to right, exactly as we need them to be.

Since row two tells us to “K4, P2,” we must type as though the instructions said “P4, K2.” With the cursor in the middle column, then as we type each symbol’s character, the line grows one symbol at a time in the natural left-to-right direction. So we’ll wind up typing four p characters for the first group.

pppp

The cursor will be to the right of the purl group, which is exactly where we need it.

pppp |

We type k two times to complete the row with the last group as we read from left to right while we swap knit and purl. So what we typed for row two is

ppppkk

Since we’ve already switched the table to the knitting font, we have this partial chart.

2	••••	
	•••••	1

Step 4: Repeat Steps 2 and 3

We’ll have to move upward to the next blank table row to type up the instructions for the next row in the instructions.

When we’re done with the chart, the **top** table row will contain the symbols for the **last** written-out instruction row, and the **bottom** table row will contain the symbols for the **first** written-out instruction row.

Let’s summarize how we chart both kinds of rows.

Private-Side Rows

On private-side rows, we

- ☺ read each written-out instruction line in the normal left-to-right direction **and**
- ☺ switch knits to purls and purls to knits as we type.

We do not have to take any extra steps to move the cursor, as typing adds the symbols in the correct, left-to-right order we need on private-side rows.

Public-Side Rows

We have two options when we're typing up public-side rows, because we can read the instructions in either direction. Since the rule of reversal is that we add the symbols to the chart in the opposite direction than we read, we have to use slightly different steps for the two reading directions.

Option A: Read from Left to Right

If we want to read the written-out instructions of public-side rows in the normal direction, from left to right, we have to

- ☺ type a complete stitch group, then
- ☺ move the cursor to the left of all the stitch groups we've already typed.

We continue to add stitch groups and move the cursor to the left of the already-charted symbols as we read through the written-out instructions in the normal direction.

The Downside of Option A for Public-Side Rows

Suppose we need to chart something like 1x1 ribbing or seed stitch. Since those two patterns alternate knits and purls, then when we use option A for public-side chart rows, we have to

1. type k for a single knit stitch
2. move the cursor to its left
3. type p for a single purl stitch
4. move the cursor to its left

and keep doing those four actions all the way across the row. If we have a really wide project, it gets aggravating to type a stitch, move the cursor, type a stitch, move the cursor...

But we can easily switch to option B at any time as well, once we see exactly what the stitch sequence is.

Option B: Read Right to Left

If we want to minimize our charting effort by eliminating the manual cursor movements we must perform between stitch groups, then we

- ☺ read each public-side written-out instruction line **backwards**, from right to left, stitch group by stitch group, from the very end of the instruction line all the way back to the beginning of the instruction line, and

☺ type the stitch groups as they are, knits as knits and purls as purls.

Reading public-side rows from right to left takes advantage of the fact that as we type, characters are added from left to right. We don't have to reach for the mouse or use any of the various keys to continually re-position the cursor.

Reading instructions backwards does take some getting used to, though probably not as much as we might think. After all, we're looking at the stitch groups one by one. A "P5"? Press p five times. A "K7"? Press k seven times.

We can only **type** one group at a time, so there's no need to **read** more than one group at a time. Concentrating on one group at a time makes it much easier to read public-side row instructions backwards.

One More Public-Side Row

Let's chart row three's "K3, P3" so we can work through the steps for a public-side row one more time.

The rule of reversal for public-side rows says that we chart each stitch as it is, but the reversal is that we chart in the direction opposite to the direction we read the row's written-out instructions.

Option A: Read in the Normal Direction

If we read from left to right, then we must add the symbols to the table cell from right to left. Since typing adds each new symbol to the right of all the symbols already on the chart row, we'll need to move the cursor **by hand** after we type each stitch group.

We start at the beginning of the instructions, where we knit three. We show knits as knits, and we can type all the characters of a group before we have to move the cursor.

kkk |

We need to add the purl group to finish charting the row. The cursor, represented with the | symbol, is currently at the right end of the three knits, so if we don't move the cursor, the row will be charted backwards. What we must do now is manually move the cursor to the left of the entire stitch group. We have several ways to move the cursor, by clicking with the mouse or by using the Home or Left Arrow keys on the keyboard.

| kkk

Now that the cursor is all the way to the left of the groups that are already charted (just

one group in this example), we are ready to add the next group, which is the three purls. We simply type p three times. There's no need at all to move the cursor after we type each p.

pppkkk

We move the cursor to the right column (with the Tab key or a mouse click), then add the row number. The first three rows of the chart are now complete.

	•••	3
2	••••	
	•••••	1

That Extra, Manual Step

Again, for such a small swatch, moving the cursor one time per public-side row is not a big deal. But imagine a project with hundreds of stitches broken up into dozens of groups containing a random number of knits and purls. Every time we finish each group, we have to do an extra step to move the cursor to the group's left.

Even if we can't touch-type, grabbing the mouse or finding a key that moves the cursor interrupts our rhythm. And if we can touch-type, we'll almost certainly have to move our eyes from the written-out instructions to the keyboard to find the Home or Left Arrow key. Or if we want to use the mouse instead of the keyboard to move the cursor, we have to take our eyes off the instructions and look at the screen so we can click oh so carefully in the proper place. Both of those actions slow us down and make our brains have a slight hiccup.

Neither of those options for moving the cursor appeals to me, and the real issue is that they're both fighting against the natural way characters are added during typing. So I'm going to be lazy, er, I mean I'll take full advantage of how symbols are positioned automatically as I type, which means I read public-side instruction rows backwards.

Option B: Read Backwards

Since typing automatically adds characters from left to right, if we read public-side row instructions from right to left, we can just type, type, type without needing to reach for the mouse or any of the keys to move the cursor, since the cursor will always be in the proper place already.

Row three tells us to "K3, P3." Instead of starting with the instruction's first stitch group, we go all the way to the end of the instructions to read the last stitch group. Since the last stitch group is three purls, we type

ppp |

Once again, the | character represents the current position of the cursor. That position is exactly where we need the cursor to be, because the **last** group we chart is the **first** group in the written-out instructions.

Since the cursor is already in the correct place, at the right-most end of the partial chart row, we now add three knit symbols by typing k three times. That stitch group is at the very beginning of the instructions for row three, so we type it last.

pppkkk

We tab to the right column (or click in it) and type

3

to add the public-side row's row number. The partial chart is identical to the one we got reading left to right but charting right to left. Since we read from right to left, we saved the step of manually moving the cursor after we typed the first stitch group.

	•••	3
2	••••	
	•••••	1

Again, for such a small swatch, moving the cursor one time on half the rows (only the public-side rows, not the private-side rows) is not a big deal. But let's go back to our imaginary chart row with hundreds of stitches broken up into dozens of groups containing a random number of knits and purls. Every time we switch from a group of knits to a group of purls, or vice versa, we have to do the extra step to move the cursor if we read public-side instructions from left to right.

The Full Chart for the Half-and-Half Triangles

When we follow the four steps for the last two rows of the swatch instructions, then the complete chart for the half-and-half triangles is

	•						5
4	••						
	•••						3
2	••••						
	•••••						1

Personalize the Chart

We can change the table formatting in all kinds of ways. We can change or eliminate the borders around each cell, make the cells' internal margins smaller or bigger, or do anything else we want.

Let's center the chart in the page, turn off all cell borders except the ones between the rows, make the cells' internal margins a bit bigger, and make each column be as narrow as possible.

5	• □ □ □ □ □
4	• • □ □ □ □
3	• • • □ □ □
2	• • • • □ □
1	• • • • • □

If the chart were very large, we could set the cells' internal margins to zero and reduce the font size to make the whole chart fit on a single piece of paper. Let's make all the cell borders visible again too, which will help us see these changes.

5	• □ □ □ □ □
4	• • □ □ □ □
3	• • • □ □ □
2	• • • • □ □
1	• • • • • □

We can in fact format the project chart any way we need or want to.

Duplicating Rows Already Charted

In moss stitch, we start with two rows of 1x1 ribbing. Then we work two more rows of 1x1 ribbing but with the stitches moved over one stitch. If we follow steps one through four, we get this chart for ten stitches of moss stitch.

4	• □ □ □ □ □ □ □	
	□ • □ • □ • □ • □ • □ •	3
2	• □ □ □ □ □ □ □	
	□ • □ • □ • □ • □ • □ •	1




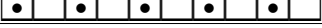
If we need to show twelve rows of moss stitch, we can just copy these four rows, paste them twice, and fix the row numbers.

Step by Step





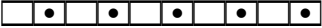



We can add the copied rows at the top of the table or at the bottom, since each four-row

group will be identical. Adding them to the bottom is much safer, as it will be impossible to overwrite any existing symbols when we paste in the copied rows.





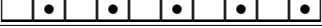



First, we add a blank row at the bottom of the table, by whatever method we like.

4		
		3
2		
		1

Now we click and drag through the top four rows, from the table cell with the private-side row number “4” to the cell with the public-side row number “1,” to select them (in the next chart they have a thick border), copy them (with a menu item like Edit | Copy or with a keystroke, which is probably Ctrl-c), click in the left-most cell of the new row, and paste.³

4		
		3
2		
		1
4		
		3
2		
		1













Since we need a third copy of rows one through four, we again add a blank table row at the bottom of the table

4		
		3
2		
		1
4		
		3
2		
		1

click in the left column of the new row, and paste the four rows in again.⁴

³ Both word processors I use will add enough rows to paste the entire group of copied rows without my having to add all the needed blank table rows first. If your word processor only pastes row four, then you’ll have to add enough blank table rows before you can paste in however many rows you’re copying.

⁴ Note that we don’t have to select and copy either group of the four moss stitch rows again, as they’ll continue to be available in the “clipboard” no matter how many times we paste them.

4		
		3
2		
		1
4		
		3
2		
		1
4		
		3
2		
		1

We then fix the row numbers and format the table according to our preferences.

Just the Symbols, or the Entire Row?

We **could** just make a copy of the symbol cells to paste in the middle column, which would leave the (incorrect) row numbers out of the copied rows. I rather like the security blanket of having all the row numbers pasted in with the symbols, because it will be **much** easier to tell if something went wrong. If I paste in rows two through four or one through three because I didn't click and drag through the correct table cells initially, I'll know immediately without having to even look at the stitch symbols because a row number will be missing. If I clicked in the wrong cell before I pasted, the row numbers will again let me know immediately, because I'll wind up with two public-side or two private-side rows next to each other.

When we're ready to fix the row numbers, we can always click and drag through the wrong row numbers, then press Backspace or Delete to get rid of all of them at once, instead of just selecting the wrong row numbers one at a time and typing the correct number.

Review: Charting in the Computer

These techniques work for any pattern, whether we need two, twenty, or two hundred table rows.

Mirror-image knitters must remember to construct the chart by assuming public-side rows will be worked right to left, which is how they would be worked by traditional knitters. Public-side rows therefore begin at the right edge of the chart and private-side rows at the left edge of the chart.

Create the Table and Change the Font

We create the table with three columns and any number of rows (we can always add or delete rows as necessary). We select the entire table and switch it to use the knitting font. We can also set the middle column to have no language so that our word processor doesn't drive itself—and us—crazy by alerting us to “spelling errors.”

Charting the Public-Side Rows

We leave the left column of the public-side table rows empty since they don't have a private-side row number, so we click in the middle column, where we'll put the stitch symbols.

On public-side rows, we enter the stitches as they are, knit for knits and purl for purls, but our rule of reversal makes us adjust **either**

- ☉ the direction we read the stitch groups in the written-out instructions **or**
- ☉ the order we type the stitch groups.

Stitch groups are usually separated by commas (or other punctuation marks) in the written-out instructions, and a group may consist of only a single stitch.

Option A: Type a Group, Then Move the Cursor

If we want to read the instructions left to right, we can't simply type all the groups as we read them, because they'll be put into the chart in the wrong order, contrary to the charting rule of reversal for public-side rows.

What we must do instead is type the first group in the instructions, then **move the cursor to the left of that group**. Then we type the second group in the instructions and move the cursor to the left of the second group.

We continue to add a group and move the cursor to that group's left as we read through the written-out instructions in the normal direction. Doing so adds the symbols to the chart from right to left in accordance with the public-side row rule of reversal.

Option B: Read the Instructions Backwards

The stitch group at the beginning of a written-out public-side row instruction line needs to be at the far right of the table cell, and the stitch group at the end of the written-out instructions needs to be at the far left of the table cell.

That means that we can add the stitch groups by typing in the ordinary way if we read the instructions from the **last** group backwards to the **first** group. Reading backwards takes advantage of the fact that as we type, every character gets added to the right of all the characters already there. If we're—*cough*—lazy, we want the stitch symbols to be put into the

chart in the exact direction that typing gives us, which means we have to read public-side row instructions from right to left.

One-Stitch Groups Are a Hassle in Option A

If a group contains several stitches, whether knits or purls, we can type the whole group at once before we move the cursor. For example, if the instructions say “K5,” we can just type

kkkkk

then move the cursor to the left of the complete group. If the instructions say “P3,” we can type

ppp

then move the cursor to the left of the three-stitch group.

But if we have groups with just one stitch, as we would in 1x1 ribbing or seed stitch, it gets really annoying really fast to “type one stitch and move the cursor” repeatedly. Instead, when we’ve got the pattern in once, we can just type the rest of the pattern’s stitches in the option B way.

For example, suppose a project’s row one consists of twenty stitches of seed stitch, starting with a knit. Instead of doing

** type k, move the cursor to its left, type p, move the cursor to its left*

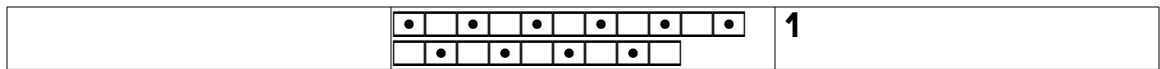
and repeating from * for all twenty stitches, we could do just one set in that way, which would give us just one pair of symbols in the partial row.



Once we verify that we have established the pattern correctly, we put the cursor at one end or the other, and simply type

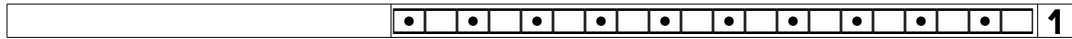
pkpkpkpkpkpkpkpkpkpk

to add the other eighteen stitches. Then we add the row number to the last column, since it’s a public-side row.



If we now resize the middle and right columns to fit their contents, we get the proper, and expected, result.⁵

⁵ There’s no actual need to resize the table columns before we finish charting the entire project, but doing so



Charting the Private-Side Rows

We can read private-side row instructions in the normal direction, from left to right, because when we type, that's the order that the symbols will be added to the table cell.

But the private-side reversal is that we must swap knits and purls, since the chart shows what the stitches look like from the public side of the work.

We click in the table row's left column, then type the row number. We press Tab to move the cursor to the middle column (or just click in it). As we read through the written-out instructions, we type a lowercase

k

for stitches we're supposed to purl and a lowercase

p

for the stitches we're supposed to knit.

We don't have to move the cursor while we're typing private-side rows, because we need the stitch symbols to be added in typing's natural left-to-right direction.

Keep Adding Rows to the Table

If we created the table with fewer rows than the project has, then we'll eventually have to add more rows to the table. When we're done, the **first** (or top) table row will contain the symbols for the **last** instruction row, and the **last** (or bottom) table row will show the symbols for the **first** instruction row.

One Caution

You might be thinking that it would be better to put each stitch symbol in its own column, instead of putting all the symbols in a single column. If you'd like to see in detail why that's really not a good idea, check out the appendix "Dubious Practices," but please try to wait until **after** you've gotten to the end of the chapter "Cables and Twists," since the appendix uses cable symbols.

eliminates the somewhat alarming appearance of the chart while we're still constructing it. Resizing immediately also helps us see if each row is the proper width, and we can also tell, at least a little bit, if the symbols seem to be lining up properly with one another from row to row.

The Laziest Way of All

Just as my natural laziness makes me chart public-side rows by reading their instruction lines from right to left, I read the **project** instructions in **reverse row order** as well, starting from the very last line of the instructions, then working my way backwards through each line to the first line of instructions. Why?

Because of the way my word processors work with tables. I use the Tab key to move from left to right through the cells of each table row, and when I press Tab when the cursor is in the last cell of the bottom table row, my word processors both add a new blank row to the bottom of the table and put the cursor in its left column.

Those two responses allow me to make the initial table with just one row, and the word processor will add a new row for me at the exact moment I need it.

My Sequence of Steps

I create a table with one row and three columns, put the cursor in the left column, and turn to the very last row of the written-out instructions.

* When I read the line of the written-out instructions, then I do two different sets of steps, depending on if the instructions are for a

Private-Side Row	or a	Public-Side Row
<ol style="list-style-type: none"> 1. I type the row number (the cursor is already in the left column) 2. tab to the center column 3. read the instructions from left to right and swap knits and purls while typing (to follow the rule of reversal) 4. tab to the last column 		<ol style="list-style-type: none"> 1. I tab to the middle column (the left column remains empty) 2. read the instructions from right to left while typing the stitches as themselves (to follow the rule of reversal) 3. tab to the right column 4. type the public-side row number

At this point, whether I'm charting a public- or private-side row, the cursor is now in the right column of the table's last row. When I tab, my word processor adds a new row to the bottom of the table and automatically puts the cursor in its left column.

I move backwards in the written-out instructions to the preceding row, and repeat from *.