

**note****Flash Fill doesn't understand mathematics**

Consider this problem:

	A	B
1	100	101
2	1120	1121
3	180	
4	149	

You could be forgiven for thinking that Flash Fill could populate cells B3 and B4 with the numbers 181 and 150. In order to produce this result Flash Fill would have to detect a mathematical relationship between the numbers in columns A and B.

Because Flash Fill doesn't understand mathematics, it will always see the problem as a textual one and will produce this result:

	A	B
1	100	101
2	1120	1121
3	180	181
4	149	141

Flash Fill has used the logic "replace the last character displayed in column A with 1" and not "Add one to the value displayed in column A".

## Lesson 2-21: Use multiple example Flash Fill to concatenate text

### Understand concatenation

In: *Lesson 2-19: Use automatic Flash Fill to split delimited text*, you learned how to split text with this example:

	A	B	C
3	<b>Name</b>	<b>First Name</b>	<b>Last Name</b>
4	Jessica Sagan	Jessica	Sagan
5	Stephen Bell	Stephen	Bell

In the above example, the text: *Jessica Sagan* was split into two separate words: *Jessica* and *Sagan*.

Concatenation is exactly the opposite of splitting. The two separate words *Jessica* and *Sagan* can be concatenated to produce the single word: *Jessica Sagan*. This is an example of very simple concatenation.

In this lesson, you'll perform some very advanced concatenation using *Flash Fill*.

#### 1 Open *Client Names-1* from your sample files folder.

This workbook contains a list of very inconsistently formatted client names:

	A	B	C	D
3	<b>Last</b>	<b>Middle</b>	<b>First</b>	
4	Sagan	Elizabeth	Jessica	
5	Bell	p	Stephen	
6	Jennings		John	

You want to clean up this data so that client names are consistently formatted like this:

	A	B	C	D
3	<b>Last</b>	<b>Middle</b>	<b>First</b>	<b>Formatted Name</b>
4	Sagan	Elizabeth	Jessica	Sagan, Jessica E.
5	Bell	p	Stephen	Bell, Stephen P.
6	jennings		John	Jennings, John
7	Simpson	Jane	Meryl	Simpson, Meryl J.
8	hawking		Alfred	Hawking, Alfred
9	Ashe	m	Lucille	Ashe, Lucille M.

For Flash Fill to automate this task you will need to tell Flash Fill what is needed by providing more than one example.

#### 2 Type: **Formatted Name** into cell D3 and bold face the text.

(Excel will probably bold-face the text automatically).

It is important that the header text in row 3 is bold-faced.

**Client Names-1**

When Flash Fill sees different formatting in the first row the row is assumed to be a header row. Flash Fill then excludes the value in the header row from its logic, providing more reliable results.

**3** Provide a single example result in cell D4.

Type: **Sagan, Jessica E.** into cell D4.

**4** Flash fill cells D5:D9 based upon the example result in cell D4.

	A	B	C	D
3	<b>Last</b>	<b>Middle</b>	<b>First</b>	<b>Formatted Name</b>
4	Sagan	Elizabeth	Jessica	Sagan, Jessica E.
5	Bell	p	Stephen	Bell, Stephen T.
6	jennings		John	jennings, John O.
7	Simpson	Jane	Meryl	Simpson, Meryl E.
8	hawking		Alfred	hawking, Alfred L.
9	Ashe	m	Lucille	Ashe, Lucille U.

You learned how to do this in: *Lesson 2-20: Use manual Flash Fill to split text.*

Excel completes the task but the results are not what you wanted (see sidebar).

With only one example, Flash Fill has completely misunderstood the requirement.

**5** Provide two example results in cells D3 and D4.

1. Delete the names in cells D5:D9.
2. Provide another example of the correct result (in cell D4).

	A	B	C	D
3	<b>Last</b>	<b>Middle</b>	<b>First</b>	<b>Formatted Name</b>
4	Sagan	Elizabeth	Jessica	Sagan, Jessica E.
5	Bell	p	Stephen	Bell, Stephen P.
6	Jennings		John	

**6** Flash fill cells D6:D9 based upon the example results in cells D4 and D5.

1. Select cells D4:D9.
2. Click: Home→Editing→Fill→Flash Fill.

This time Flash Fill has done a better job (see sidebar).

Notice the two blank results (for *John Jennings* and *Alfred Hawking*).

Flash Fill doesn't yet understand how to treat clients without a middle name. The blank spaces are Flash Fill's way of asking you for yet another example.

	A	B	C	D
3	<b>Last</b>	<b>Middle</b>	<b>First</b>	<b>Formatted Name</b>
4	Sagan	Elizabeth	Jessica	Sagan, Jessica E.
5	Bell	p	Stephen	Bell, Stephen P.
6	jennings		John	
7	Simpson	Jane	Meryl	Simpson, Meryl J.
8	hawking		Alfred	
9	Ashe	m	Lucille	Ashe, Lucille M.

**7** Provide another example result in cell D6.

1. Type: **Jennings, John** into cell D6.
2. Press the <Enter> key.

Usually Flash Fill will instantly replace the value in cell D8. If it doesn't, you'll have to manually flash fill the entire list based upon the three examples provided. Do this by completing the following steps:

3. Select cells D4:D9.
4. Click: Home→Editing→Fill→Flash Fill.

This time Flash Fill has completed the task successfully (see sidebar).

	A	B	C	D
3	<b>Last</b>	<b>Middle</b>	<b>First</b>	<b>Formatted Name</b>
4	Sagan	Elizabeth	Jessica	Sagan, Jessica E.
5	Bell	p	Stephen	Bell, Stephen P.
6	jennings		John	Jennings, John
7	Simpson	Jane	Meryl	Simpson, Meryl J.
8	hawking		Alfred	Hawking, Alfred
9	Ashe	m	Lucille	Ashe, Lucille M.

**8** Save your work as *Client Names-2*.