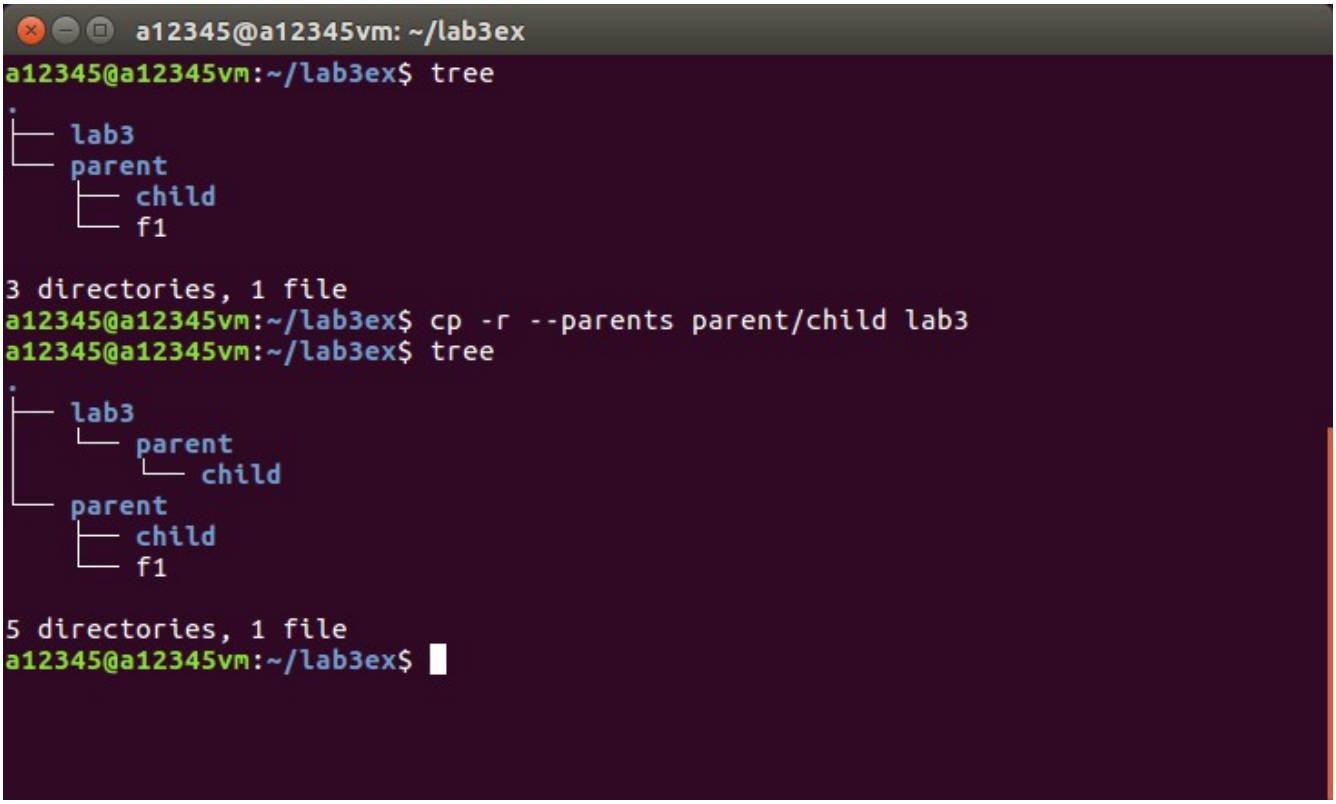
Detailed explanation of Question 6 on Lab 3

In this question 6, you are investigating the --parents flag through use of the tree command. This example is an insightful look into the subtleties of the Linux command line.

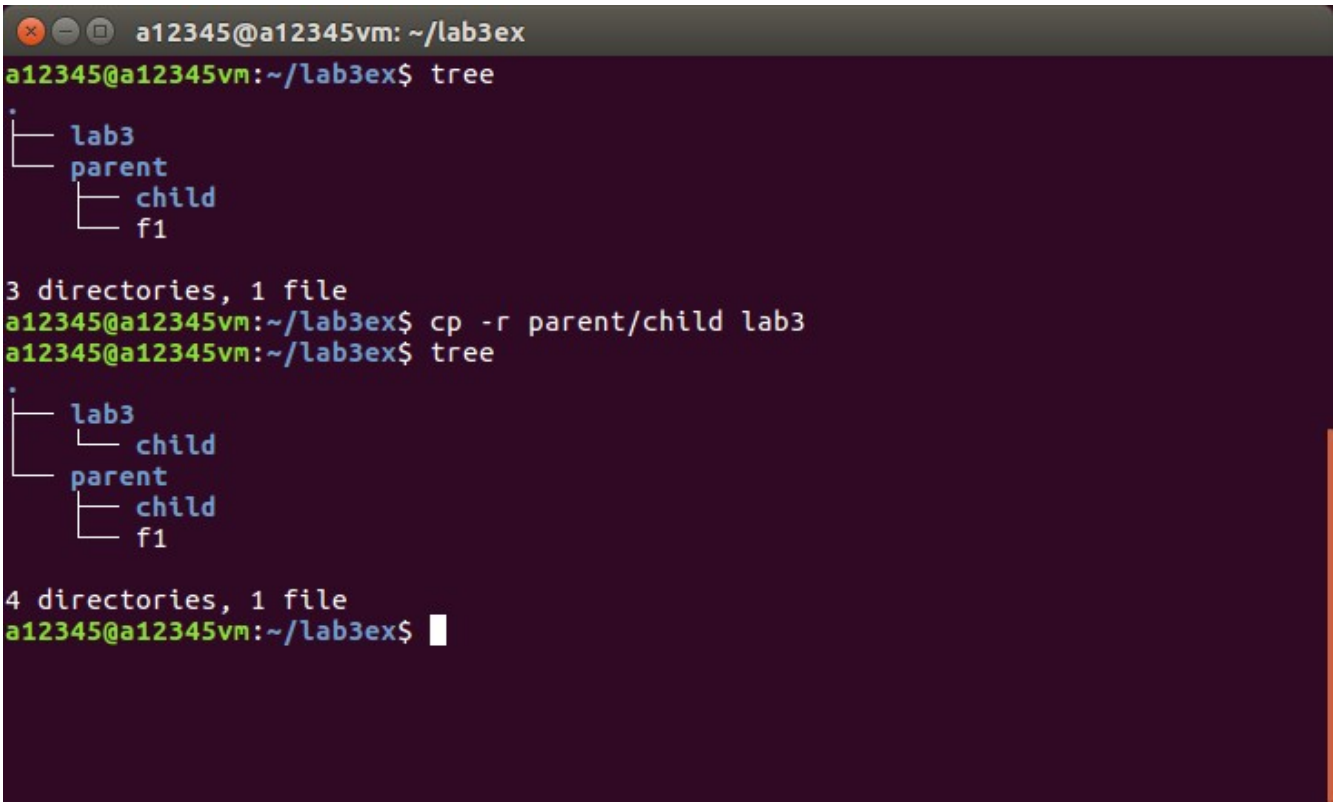
Enter the following commands.
mkdir -p parent/child
cd parent; touch f1; cd ..
cp -r --parents parent/child lab3
tree lab3



Q: Why didn't file *f1* copy over with the last cp command?

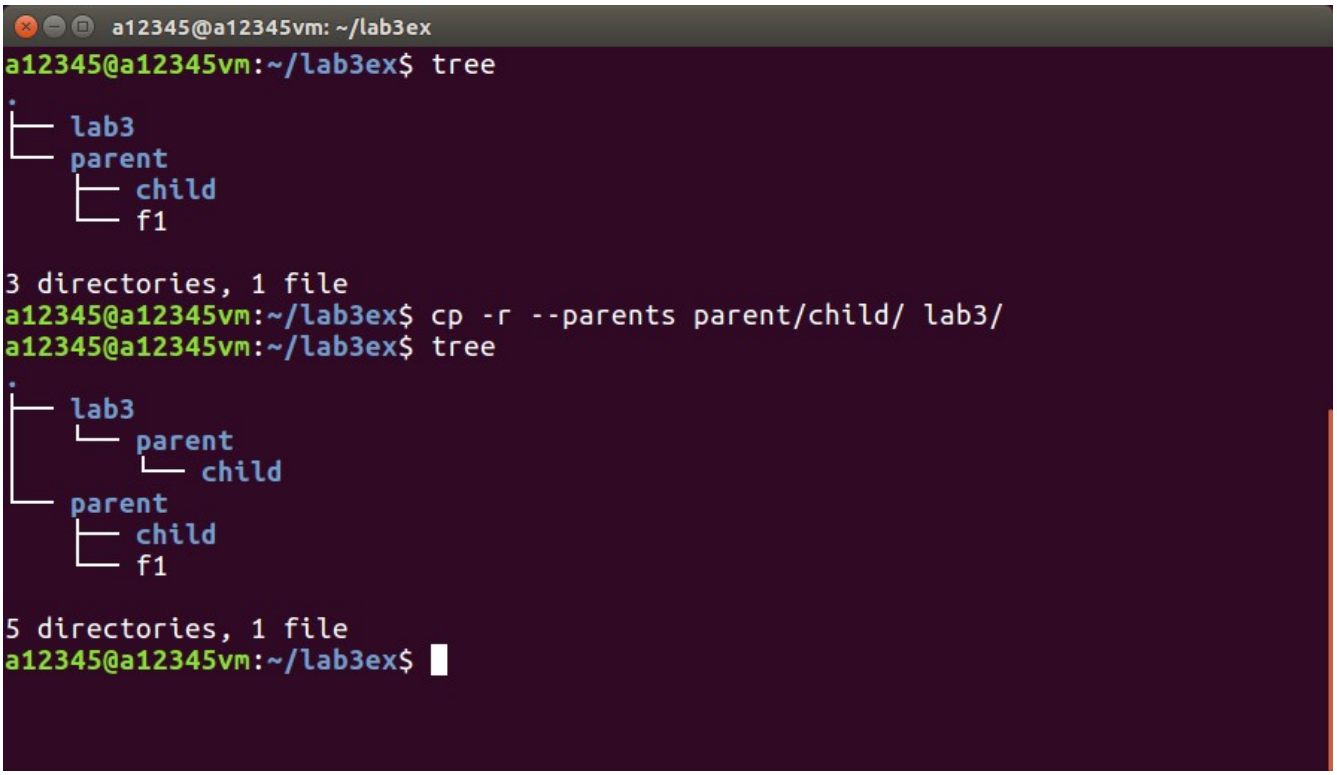
A: Understanding this answer depends on understanding everything that is happening in the command. As a general rule of thumb, I recommend that you work to understand every command you enter, all the flags and all the parameters. In very short time you will begin to accumulate a lot of Linux command knowledge.

First, let us examine what happens without the --parents flag.



We are copying, with the recursive flag, the source folder, to the destination folder. The destination folder has not changed, *lab3*. The source folder is a good example of how to use a relative path. We are specifying the folder *child*, using the relative path to the source, which is *parent/child*. So the folder being copied is *child*, and all of its' contents, into *lab3*.

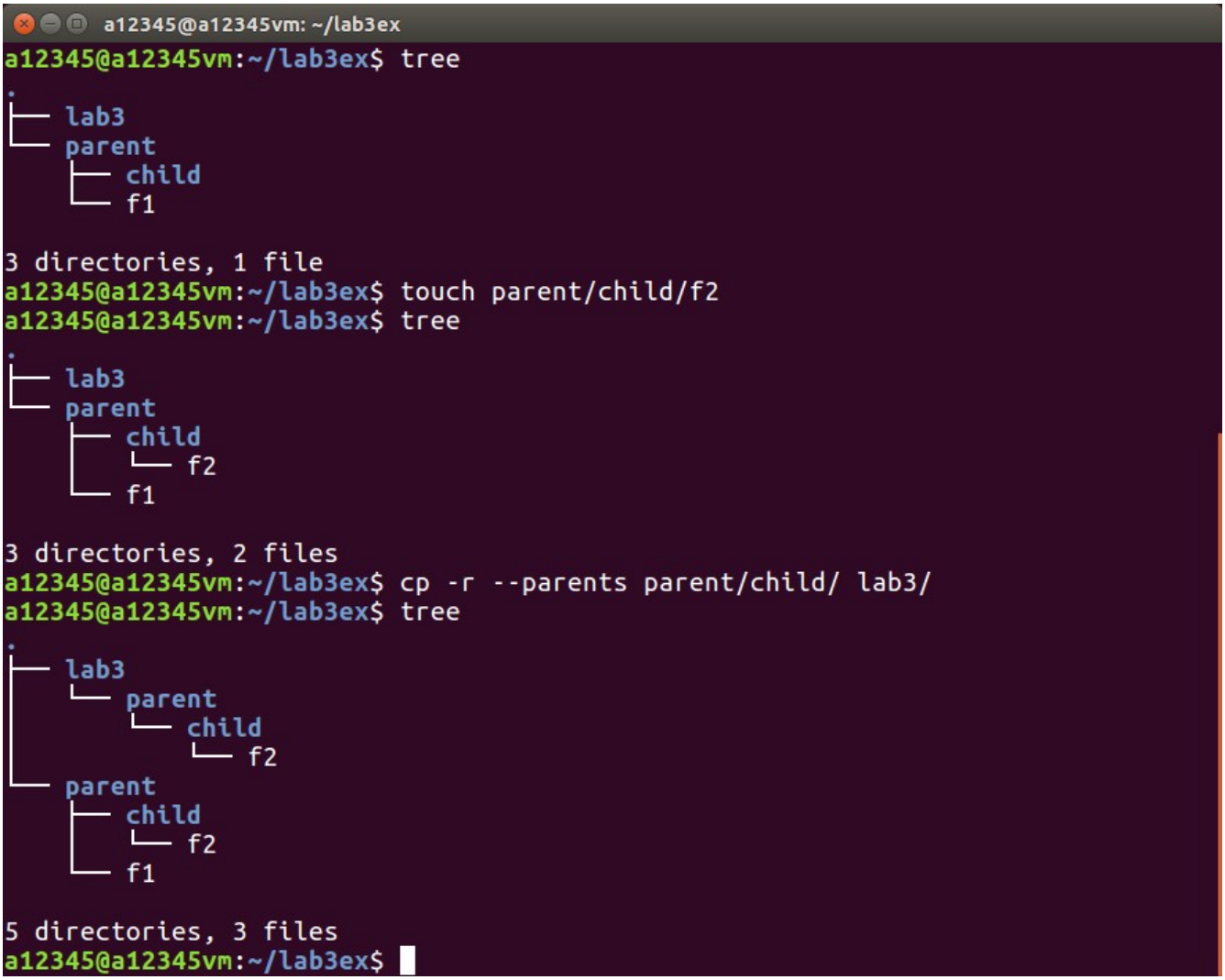
Consider what happens when we now copy with the --parents flag



The destination folder has not changed. The actual source folder is *child*, specified by the relative path *parent/child*. So the folder *child*, and all of it's contents, will be copied, recursively, into *lab3*. The --parents flag will create any missing directories in the relative path of the source. Hence the destination folder is *child*, and *parents* folder is created as a result.

Which folder is file *f1* located in?
File *f1* is located inside folder *parent*, not *child*. When we are copying, we are specifying to copy the *child* folder and all of its' contents, not the *parent* folder and its' contents. The *parent* folder is only created as result of the --parents flag. This is why *f1* is not copied, it is not included in the source folder to copy.

To illustrate, let's create a file *f2* inside *child* and see if this is copied over.



File *f2* is copied over, file *f1* is not, as was expected.

Q: What command needs to be entered to copy over the file *f2*?

A: The *parents* folder needs to be copied over.