

## Lab: Arrays

In our search customer and list customer pages, we are reading each record and using the cut command to pull out each value. While this works, it isn't very efficient as you've probably seen. In this lab we're going to improve the performance by refactoring that using arrays.

1. Find where you're reading each customer record. Take a minute to familiarize yourself with it again.
2. Just before those lines, break the input line into an array. Since this isn't a straightforward operation, here's a formula:

```
IFS='|' read -a customer <<< "$LINE"
```

### Validating each row

Now that you've got each field in an array called customer, let's make sure each row is proper.

3. For each row, test to see if you have eight fields.
4. If not, print a message to standard error and skip that record.
5. Manually edit the Customer file. Add an extra field to one record and remove a field from another.
6. Run and test. If you get an error message for those two rows but see the others you can move on. Don't forget to fix the file.

### Processing the fields

7. Find all those lines where you're using command substitution, echo, and cut. Comment them out.
8. You know the format of each row already. Replace each old variable assignment by referencing the proper field from the array.
9. Run and test. When you can see all the fields again, you can be finished.
10. Bonus! At the bottom of the file, add a line beneath the table saying how many customers you found.