Service Metal Coding Test

Thanks for taking our coding challenge. The following questions should be worked with instructions on how to view the code, run any programs, and read any documentation. It is up to you how you wish to present your code. Please make sure it is accessible to ██████@servicemetal.net.

Libraries are allowed. If you use libraries, please provide installation instructions. e.g.

```
Python
pip install boto
```

```
PHP
require('lib.class.php')
```

1) Database design

Design a set of SQL tables for a product detail page. Use a product from pvcfittingsonline.com to get an idea of what data points we need to <u>render the product itself</u> (disregard other elements such as header, footer, sidebars, related products, customer data, user data, etc). Provide the URL for the product you selected. Please include your comments for fields or data that might be unclear. MySQL is the ideal database to target, but if you're not familiar with it, other relational databases are also acceptable.

2) API interaction

Using Python or PHP, send HTTP requests to the following fake API endpoint (https://jsonplaceholder.typicode.com/todos) and 1) get the 200 most recent TODOs, 2) create a TODO, and 3) delete a TODO given an ID.

3) Algorithms

Write a Python or PHP script which prints all the permutations of a string in alphabetical order. We consider that digits < upper case letters < lower case letters. The sorting should be performed in ascending order.

Your program should accept a file as its first argument. The file contains input strings, one per line. Print to stdout the permutations of the string separated by comma, in alphabetical order.

You are NOT allowed to use the Python *permutations* function from the *itertools* library.

Contents of sample input file:

```
hat
abc
Zu6
```

Expected output for the input above:

```
aht,ath,hat,hta,tah,tha
abc,acb,bac,bca,cab,cba
6Zu,6uZ,Z6u,Zu6,u6Z,uZ6
```