Digi-X “Lightning” Assessment for Developers

Congratulations on advancing to the next step!

There are two (2) sections to this assessment. You should try to answer both sections as best as you can. Use one (1) preferred language of your choice to answer both sections. You may not need to write code for everything, so explain your answers as you see fit.

Please submit your answers via email by replying to the last email we sent you. Include the relevant Github or Google Drive links to show your code / explanations.

Ideally, this assessment should take no more than two (2) days. We encourage you to try submitting your response in the fastest time possible.

Go on, give it your best shot.

The Digi-X team wishes you the very best!

Section 1: Application Programming Interface

a. Using simple code, explain what kind of situations would you use the methods:
    i. GET
    ii. POST
    iii. UPDATE
    iv. PUT

b. Explain in your own words, what kind of “authentication” works best for a web service that needs to be secure, yet easy to implement across different programming languages. You may want to give an example of how to call this API.

c. What kind of format is best to be returned by an API as a response? Explain your answer and provide comparisons, if needed.

Section 2: Simple Checkout System

Digi-X is starting a computer store. You have been engaged to build the checkout system.

We will start with the following products in our catalogue:

SKU	Name	Price
ipd	Super iPad	$549.99
mbp	MacBook Pro	$1399.99
atv	Apple TV	$109.50
vga	VGA adapter	$30.00

As we're launching our new computer store, we would like to have a few opening day specials.

- We're going to have a 3 for 2 deal on Apple TVs. For example, if you buy 3 units of Apple TVs, you will only pay for the price of 2 units
- The brand new Super iPad will have a bulk discount applied, where the price will drop to $499.99 each, if someone buys more than 4 units
- We will bundle in a VGA adapter free of charge with every MacBook Pro sold

Our checkout system can scan items in any order.

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The interface to our checkout looks like this (example shown in php):

```
php

Checkout co = new Checkout(pricingRules);

co->scan(item1);

co->scan(item2);

co->total();
```

Your task is to implement a checkout system that fulfils the requirements described above.

Example scenarios:

SKUs Scanned: atv, atv, atv, vga
Total expected: $249.00

SKUs Scanned: atv, ipd, ipd, atv, ipd, ipd, ipd
Total expected: $2718.95

SKUs Scanned: mbp, vga, ipd
Total expected: $1949.98

Implementation reminders:

- Try not to spend more than 3 hours on this - we don't want you to lose a weekend over this!
- Don't build GUIs etc - we're more interested in your approach to solving the given task, not how shiny it looks
- Don't worry about making a command line interface to the application
- Don't use any frameworks (laravel, cakephp, lumen, Symphony etc), or any external modules (unless it's for testing)
- Don’t worry about creating databases with tables, you can use a simple json, xml as your data