

## BlackRock 2023 Software Engineering Virtual Coding Challenge

- 昨天刚刚做了 BlackRock 的 OA，这个应该算是 application 的一部分，需要在五天之内做完，不限时

两道 coding 一道视频 BQ，题和地里分享的一样：

1. Valid parentheses

2. Currency exchange，找最多 destination currency 可以换多少钱，可以参考

<https://leetcode.com/discuss/interview-question/483660/google-phone-currency-conversion>

3. Why BlackRock + Why this role （可以无限次录，90 秒）

我自己觉得值得一提的是他的 coding 需要自己处理 input，面试小白还是第一次见这种形式：( 当下有点蒙圈，还挺神奇的。

### 讨论区：

-楼主想问一下，是可以做一半离开吗？还是必须一次性做完？

-他邮件里说是不用 complete two questions in one setting，然后题也是做完一道提交一道，所以感觉应该是可以做一半就离开的。但是我是一气做完 1，所以也不是很确定

-楼主是先遇到 bq 题，之后才是 code 题吗？

-先 code 再 bq

-感谢分享！请问楼主这个 5 天是从投递申请时候开始算，还是收到 action required 的邮件开始算啊 lol

-应该是收到以后开始算吧，但是感觉刚投就开 OA 了，可以进你的用户里看一眼我觉得

-嗯嗯，但我是上周六投的，刚刚才收到 action required 邮件说有 OA。。你觉得是按照哪个时间开始算五天啊 之前没太关注用户界面...

顺便可以问一下，这个题目只能用 java/python 做吗？不能用 C++？谢谢！

-啊，我一开始其实是按他给我发邮件的时间算的，但是后来发现好像 portal 上一直都有，所以我也不太清楚了哈哈哈哈哈。然后语言我有点不记得了，我用的 java 所以没太留意可不可以 c++。不好意思啦！

-请问 Currency exchange 这道题，每种货币之间都是可以双向兑换的吗？

-对滴

-请问楼主，你说的题目要自己处理 input 是啥意思呀？谢谢！（已加米）

-就是 hakerrank 都是直接把 function 的开头给你写好嘛，告诉你 input 是什么形式的。这个只会在 main 里面把信息读进去，具体在 main 里怎么把数据整理好，怎么 call function，function take 什么 parameter 都要自己搞

- 2 道 leetcode，1 道 bq，都是前辈说的，第一题就是 valid parenthesis，找出左右符号是否相等即可。

这里想说的是第二题，参考了许多帖子发现把问题想复杂了，而且好多贴出的代码并不对，因为这里只要求 2 个 cases 通过，只需根据每组的第一个建图然后

BFS 可以轻松找到 target 最大的，这种做法仅限过这道题的 2 个 cases，如果完整考虑可能要很复杂。

- 第一题 valid parenthesis,

第二题 LC399,

基本上都跟 lc 上一样

- BlackRock 用的系统要自己处理输入，print 结果，

好在不限时间可以慢慢弄

第一题 lc20, Valid Parentheses, 要去掉别的字符

第二题 currency exchange, 已截图

类似 lc399, 用 bfs 可解

最后录一个视频，why do you want to work here, why this role

## Currency Exchange

### Programming challenge description:

Given

- A list of foreign exchange rates
- A selected currency
- A target currency

Your goal is to calculate the max amount of the target currency to 1 unit of the selected currency through the FX transactions. Assume all transactions are free and done immediately. If you cannot finish the exchange, return **-1.0**.

### Input:

You will be provided a list of fx rates, a selected currency, and a target currency.

For example:

```
FX rates list:
  USD to JPY 1 to 109
  USD to GBP 1 to 0.71
  GBP to JPY 1 to 155
Original currency: USD
Target currency : JPY
```

### Output:

Calculated the max target currency will can get.

For example:

```
USD to JPY -> 109
USD to GBP to JPY = 0.71 * 155 = 110.05 > 109,
```

Calculated the max target currency will can get.

For example:

```
USD to JPY -> 109
USD to GBP to JPY = 0.71 * 155 = 110.05 > 109,
```

so the max value will be **110.05**

### Test 1

#### Test Input

```
USD,CAD,1.3;USD,GBP,0.71;USD,JPY,109;GBP,JPY,155
USD
JPY
```

#### Expected Output

```
110.05
```

### Test 2

#### Test Input

```
USD,GBP,0.7;USD,JPY,109;GBP,JPY,155;CAD,CNY,5.27;CAD,KRW,921
USD
CNY
```

#### Expected Output

```
-1.0
```

@一亩三分地

@一亩三分地

- BlackRock 白嫖 OA，一共 3 道题，两道编程一道 BQ。

编程第一题给你一串文本，问你括号是否合法，在处理字符串时只提取三种括号，然后判断三种括号是否合法，类似 leetcode20 题。

编程第二题求出从初始货币变成目标货币的最大汇率，

类似 leetcode399，将字符串处理成 399 的参数形式就可以了，需要注意因为 399 只有一种情况，而本题可能有多个汇率，所以不能当汇率大于 1 时就结束判断，需要每个汇率进行比较，同时进行 BFS 时需要判断每种货币是否遍历过防止死循环。

BQ 问你为什么对 BlackRock 感兴趣以及为什么对这个职位感兴趣，时间 1.5 分钟，可以无限作答。

- 第一题 括号验证

第二题 类似 1c399

第三题 BQ

Document Format Verifier

Programming challenge description:

You are writing a program to analyze the financial data for a set of companies.

Your coworker gives you a text file of company data. However, you are worried that your coworker didn't type the data in correctly. Write a program that will tell you if the data is correctly formatted.

[



```
company_name: (BlackRock)
```

```
ticker: (BLK)
```

```
stock_price: {
```

```
    2022-04-03: ($930)
```

```
    2022-04-02: ($932)
```

```
}
```

```
},
```

```
{
```

```
company_name: (Apple)
```

```
ticker: (APPL)
```

```
stock_price: {
```

```
    2022-04-03: ($175)
```

```
    2022-04-02: ($178)
```

```
}
```

```
}
```

```
]
```

A file is formatted correctly if each opening parenthesis: (, {, [ is closed out with its respective "closing" parenthesis: ), }, ]. The open bracket character ( matches ) on the same line, however, { and [ may match over multiple lines. Incorrect data could look like:

```
[
```

```
company_name: (BlackRock(
```

```
ticker: (BLK{
```

```
stock_price: {
```

```
2022-04-03: ($930]
```

```
2022-04-02: ($932}
```

```
}
```

```
}
```

```
]
```

Notes:

\* It doesn't matter if a field is surrounded by [], or {}

\* There will only be one or two parentheses on each line

\* Assume the only possible issue with the file is the parenthesis not matching

Input:

string representation of the data:

```
[
```

```
{
```

```
company_name: (BlackRock)
```

```
ticker: (BLK)
```

```
stock_price: {
```

```
2022-04-03: ($930)
```

```
2022-04-02: ($932)
```

```
}
```

```
}
```

```
]
```

Output:

boolean - valid data format or not

Test 1

Test Input

```
[
```

```
{
```

```
    company_name: (BlackRock)
```

```
    ticker: (BLK)
```

```
    stock_price: {
```

```
        2022-04-03: ($930)
```

```
        2022-04-02: ($932)
```

```
    }
```

```
},
```

```
{
```

```
    company_name: (Apple)
```

```
    ticker: (APPL)
```

```
    stock_price: {
```

```
        2022-04-03: ($175)
```

```
        2022-04-02: ($178)
```



```
}
```

```
}
```

```
]
```

Expected Output

valid

Test 2

Test Input

```
[
```

```
{
```

```
  company_name: (BlackRock(
```

```
    ticker: (BLK{
```

```
      stock_price: {
```

```
        2022-04-03: ($930]
```

```
        2022-04-02: ($932}
```

```
      }
```

```
    }
```

```
  }
```

Expected Output

invalid

Currency Exchange

Programming challenge description:

Given

\* A list of foreign exchange rates

\* A selected currency

\* A target currency

Your goal is to calculate the max amount of the target currency to 1 unit of the selected currency through the FX transactions. Assume all transactions are free and done immediately. If you cannot finish the exchange, return -1.0.

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For example:

FX rates list:

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GBP to JPY 1 to 155

Original currency: USD

Target currency : JPY

Output:

Calculated the max target currency will can get.

For example:

USD to JPY -> 109

USD to GBP to JPY =  $0.71 * 155 = 110.05 > 109$ ,

so the max value will be 110.05

Test 1

Test Input

USD,CAD,1.3;USD,GBP,0.71;USD,JPY,109;GBP,JPY,155

USD

JPY

Expected Output

110.05

Test 2

Test Input

USD,GBP,0.7;USD,JPY,109;GBP,JPY,155;CAD,CNY,5.27;CAD,KRW,921

USD

CNY

Expected Output

-1.0

BQ

Why are interested in working in BlackRock and specifically in this division?

讨论区:

-请问楼主输入 input 怎么处理的啊，整不明白了。。

-我用的 Java，时间有点长，有点不太记得了，抱歉，我好像是用 System.in

-想问一下楼主第一题的 input 是 string 形式吗还是要读取 txt，已加米

-没记错的话是 string，不用读 txt

-想问一下楼主 OA 需要写 comment 吗

-按照个人习惯写了一点

-请问楼主 限时写吗?

-没记错的话, 是的