22Fall HKU MSc(Computer Science) Admission Test & Interview 笔试面试经验

怪人 关注

Admission Test 笔试

- 时间：2022.1.21 11:00 - 12:00
- 声明：**以下答案为本人在有限时间内作答，没有经过严格论证，笔试后也没有再次检查，很可能会有错，仅供参考，欢迎各位批评指正。**
- 笔试时需要通过Zoom监考，要求能够拍到手、试卷和屏幕（但讲真没有感觉很严格），考前会需要检查护照/通行证，以验证是否为本人。
- Q1 (30%)

Write a program (using either Python, Java, C or C++) that (i) inputs a positive integer n, (ii) prints a line of consecutive integers from 2 to n (inclusively), and then (iii) repeatedly inputs a prime number f and do the following until f = 2:

prints a line of integers constructed by removing from the previously printed line those integers that have an odd number of factor f. (For example, the integer 24 = 2 × 2 ×2 × 3 has an odd number of factor 2.)

Following is an example on the execution of the program:

```
20
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
3
2 4 5 7 8 9 10 11 13 14 16 17 18 19 20
2
4 5 7 9 11 13 16 17 19 20
```

参考代码：

应该会有bug，请大佬轻喷。

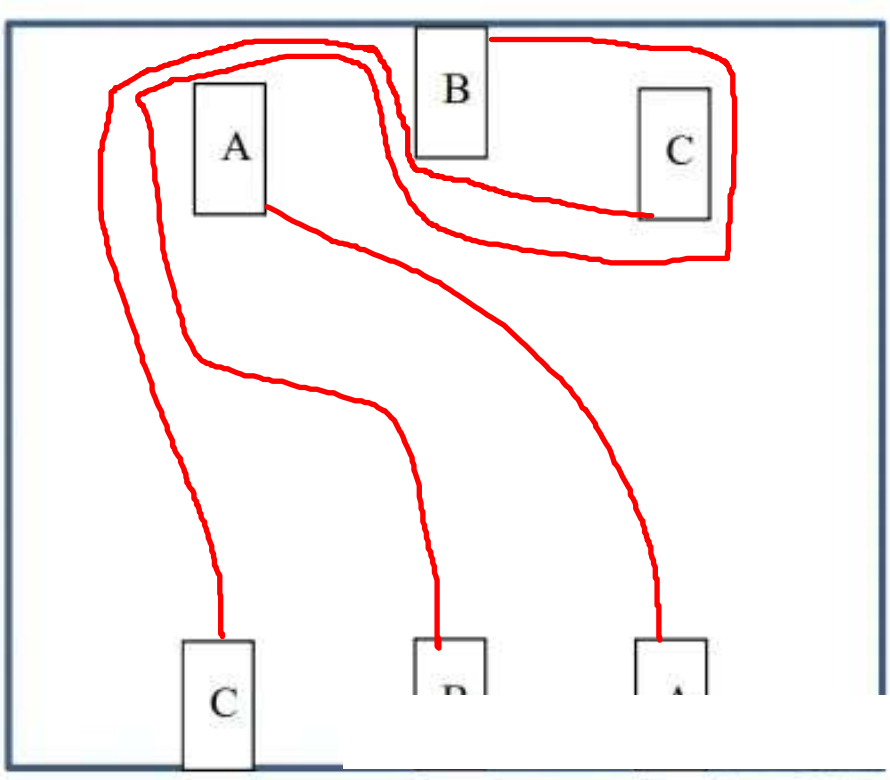

```java
import java.util.ArrayList;
import java.util.List;
import java.util.Scanner;

public class Solution {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        List<Integer> arr = new ArrayList<>();
        // (i) inputs a positive integer n
        int n = sc.nextInt();
        // (ii) prints a line of consecutive integers from 2 to n (inclusively)
        for (int i = 2; i <= n; i++) {
            System.out.print(i + " ");
            arr.add(i);
        }
        System.out.println();
        // (iii) repeatedly inputs a prime number f and do the following until f = 2
        int f = 0;
        while (f != 2) {
            f = sc.nextInt();
            for (int i = 0; i < arr.size(); i++) {
                int count = 0;
                int num = arr.get(i);
                while(num % f == 0) {
```

```
                num /= f;
                count++;
            }
            if(count % 2 == 1)
                arr.remove(i);
        }
        for (int i : arr)
            System.out.print(i + " ");
        System.out.println();
    }
  }
}
```

- Q2(30%)

Consider the following diagram. Can you connect each small box on the top with its same-letter mate on the bottom with paths that do not cross one another, not leave the boundaries of the large box. Justify your answer (i.e., if your answer is 'yes' , draw the paths, and if you answer is 'no', explain why).



参考答案:

No.

- Q3(20%)

Find the following indefinite integerals:

1. $\int \frac{2x+1}{\sqrt{x^2+x+7}}dx$
2. $\int \frac{7}{(x-3)(2x+1)}dx$

参考答案:

1. $\int \frac{2x+1}{\sqrt{x^2+x+7}}dx$
   $= \int (x^2+x+7)^{-\frac{1}{2}} d(x^2+x+7)$
   $= \frac{(x^2+x+7)^{-\frac{1}{2}+1}}{-\frac{1}{2}+1} + C$
   $= 2\sqrt{x^2+x+7} + C$
2. 对 $f(x) = \frac{7}{(x-3)(2x+1)}$ 进行因式分解，得 $f(x) = \frac{1}{x-3} - \frac{2}{2x+1}$ ，那么有
   $\int \frac{7}{(x-3)(2x+1)}dx$
   $= \int \frac{1}{x-3} - \frac{2}{2x+1}dx$
   $= \int \frac{1}{x-3}dx - \int \frac{1}{2x+1}d(2x)$
   $= ln\,|x-3| - ln\,|2x+1| + C$

- Q4(20%)

On a flight of United airline, 5% of the passengers take the first-class seats. Among those passengers, 30% of them are US citizens. It is known that 60% of the first-class passengers who are US citizens have become members of United airline, and the airline only accept US citizens as their members. If a passenger is randomly chosen from the passenger list of the flight, find the probability that the passenger takes a first-class seat but is not a member of United airline.

参考答案：

$$5\% - 5\% \times 30\% \times 60\% = 4.1\%$$

Interview 面试

- 时间：2022.1.28 15:30 - 16:00
- 面试官：Dr. Dirk Schnieders (sdirk@cs.hku.hk)
- 面试地点：Zoom
- 面试流程：

8人群面（6个985，1个211，1个深大）。

首先，每人进行自我介绍，并且阐述Why HKU CS 。每个人自我介绍结束后面试官都会根据面试者的描述问一些问题，由于时间限制并不会问得很深入，不会问技术，仅仅是聊聊天。自我介绍顺序由面试官决定。

然后，反问。大家问的大多是日经问题

印象比较深刻的回答（并非上面问题的回答）：CS录取率在5%左右（可能更低）。面试官透露在HKU读PhD的一个重要原因是他的local老婆不想离开香港。面试官的本科和PhD貌似都在HKU（如果没记错的话）。

一些想说的

HKU CS的笔面难度总体不算大，体验尚好。正常来说有笔试就有面试，另外海本是不用笔面的。我个人认为笔面主要考察申请人是否会听说写英文，顺便看看他是不是真的犹如他的PS和CV上描述得那么耀眼（我猜的），录取与否还是取决于个人bg。

我这轮笔面已经是第三轮，同组面试的貌似仅有1位大佬收到推研，同一轮的推研数量也不是很多，笔面后等了大概1个多月才发推研。

建议大家还是能早申请就早申请，后面坑位不多真的会很遗憾。

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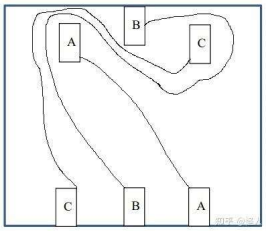
发布一条带图评论吧

9 条评论 默认 最新

蜘蛛网



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蜘蛛网

画图好像是可以的吧，把A相连，然后BC绕着A转，再绕着C转就能走出来了

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怪人 作者

你说得对🤭

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Distance

好想拿offer

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nnnn

请问5%是申请录取比还是，面试录取比呀

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怪人 作者 ▸ **nnnn**

不仅轮次，个人bg，笔面表现也是很重要的。当然轮次越早，机会肯定越多。

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nnnn ▸ **怪人**

谢谢谢谢！大佬请问是因为

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