



链滴

江湖魔头 Writeup

作者: [moddemod](#)

原文链接: <https://ld246.com/article/1567311660712>

来源网站: [链滴](#)

许可协议: [署名-相同方式共享 4.0 国际 \(CC BY-SA 4.0\)](#)

写在前面的话

打怪需要装备，装备需要钱，如果这句话没能帮到你，那么就继续看吧

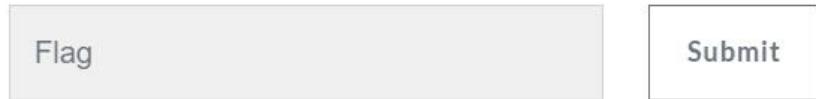
这是一道来自Bugku上的一道题，题目地址：<http://123.206.31.85/>

江湖魔头

200

<http://123.206.31.85:1616/>

学会如来神掌应该就能打败他了吧



随便观察了一下没有发现什么特殊的地方，看参数的地方加了'出现如下：



恭喜您发现了出题人留的彩蛋！！！
在这儿可以检测flag的正确性哦！！！

KEY: moddemod
提交

打开源码只发现三个js文件

```
<html>
  <head>
    <title>江湖</title>
    <meta http-equiv="Content-Type" content="text/html, charset=UTF-8" />
    <script type="text/javascript" src="js/script.js"></script>
    <script type="text/javascript" src="js/md5.js"></script>
    <script type="text/javascript" src="js/base64.js"></script>
  </head>
  <body>
    恭喜您发现了出题人留的彩蛋！！！ <br>在这儿可以检测flag的正确性哦！！！ <br><form action=".//wulin.php?action=500" method="post">
      <p>KEY: <input type="text" name="key" maxlength="30"><br>
      <input type="submit">
    </form> </body>
  </html>
```

接下来就是代码审计的时间了，这里主要是Javascript。

在script.js中发现flag，随便打开一个编辑器格式化一下。



```

eval(function (p, a, c, k, e, r) {
    e = function (c) {
        return (c < 62 ? '' : e(parseInt(c / 62))) + ((c = c % 62) > 35 ? String.fromCharCode(c + 29) : c.toString(radix: 36))
    };
    if ('0'.replace(searchValue: 0, e) == 0) {
        while (c--) r[e(c)] = k[c];
        k = [function (e) {
            return r[e] || e
        }];
        e = function () {
            return '[57-9abd-hj-zAB]'
        };
        c = 1
    }
}
;
while (c--) if (k[c]) p = p.replace(new RegExp(pattern: '\\\\b' + e(c) + '\\\\b', flags: 'g'), k[c]);
return p
})('7 s(t){5 m=t+"";5 8=9.cookie.n('\\\'');o(5 i=0;i<8.d;i++){5 c=8[i].trim();u(c.v(m)==0)p c.substring(m.d,c.d)p""}7 w(a){5 x=new Base64()

```

eval()就不用解释了吧，首先这是一个匿名函数，我们直接把eval去掉然后在Chorme中跑一下。

```

fun = function (p, a, c, k, e, r) {
    e = function (c) {
        return (c < 62 ? '' : e(parseInt(c / 62))) + ((c = c % 62) > 35 ? String.fromCharCode(c + 29) : c.toString(36))
    };
    if ('0'.replace(0, e) == 0) {
        while (c--) r[e(c)] = k[c];
        k = [function (e) {
            return r[e] || e
        }];
        e = function () {
            return '[57-9abd-hj-zAB]'
        };
        c = 1
    }
}
;
while (c--) if (k[c]) p = p.replace(new RegExp('\\\\b' + e(c) + '\\\\b', 'g'), k[c]);
return p
})('7 s(t){5 m=t+"";5 8=9.cookie.n('\\\'');o(5 i=0;i<8.d;i++){5 c=8[i].trim();u(c.v(m)==0)p c.substring(m.d,c.d)p""}7 w(a){5 x=new Base64();5 q=x.decode(a);5 r="";o(i=0;i<q.d;i++){5 b=q[i].charodeAt();b=b^i;b=(b*(i%10)+2);r+=String.fromCharCode(b)}p r}7 ertqwe(){5 y="user";5 a=s(y);=decodeURIComponent(a);5 z=w(a);5 8=z.n('\\\'');5 e="";o(i=0;i<8.d;i++){u(-1<8[i].v("A")){e=8[+1].n(":")[2]}e=e.B("\\\'","").B("\\\'","");9.write(`<img id="f-1" g="h/1-1.k">`);j(7){9.l("f-1").g="/1-2.k"},1000);j(7){9.l("f-1").g="h/1-3.k"},2000);j(7){9.l("f-1").g="h/1-4.k"},3000);j(7){9.l("f-1").g="h/6.png"},4000);j(7){alert("浣犱娇鑾ㄥ鏉 丂鉅屾墦璐ヤ簡鑑欒€例砲锛屼綏涓嶃鍵闇撲樹鑄熻韓楨樹鍋囱韩锛屾弔浜よ瘖涓€涓嬪恊!A{"+md5(e)+"")},5000)}, [], 38, '|||||var||function|ca|document|temp|num||length|key|attack|src|image||setTimeout|jpg|getElementById|name|split||for|return|result|result3|getCookie|cname||if|indexOf|decode_create|base|temp_name|mingwen|flag|repla e'.split('|'), 0, {})

```

```

    e = function (c) {
        return (c < 62 ? '' : e(parseInt(c / 62))) + ((c = c % 62) > 35 ? String.fromCharCode(c + 29) : c.toString(36))
    };
    if ('0'.replace(0, e) == 0) {
        while (c--) r[e(c)] = k[c];
        k = [function (e) {
            return r[e] || e
        }];
        e = function () {
            return '[57-9abd-hj-zAB]'
        };
        c = 1
    }
}
;
while (c--) if (k[c]) p = p.replace(new RegExp('\\\\b' + e(c) + '\\\\b', 'g'), k[c]);
return p
})('7 s(t){5 m=t+"";5 8=9.cookie.n('\\\'');o(5 i=0;i<8.d;i++){5 c=8[i].trim();u(c.v(m)==0)p c.substring(m.d,c.d)p""}7 w(a){5 x=new Base64();5 q=x.decode(a);5 r="";o(i=0;i<q.d;i++){5 b=q[i].charodeAt();b=b^i;b=(b*(i%10)+2);r+=String.fromCharCode(b)}p r}7 ertqwe(){5 y="user";5 a=s(y);=decodeURIComponent(a);5 z=w(a);5 8=z.n('\\\'');5 e="";o(i=0;i<8.d;i++){u(-1<8[i].v("A")){e=8[+1].n(":")[2]}e=e.B("\\\'","").B("\\\'","");9.write(`<img id="f-1" g="h/1-1.k">`);j(7){9.l("f-1").g="/1-2.k"},1000);j(7){9.l("f-1").g="h/1-3.k"},2000);j(7){9.l("f-1").g="h/1-4.k"},3000);j(7){9.l("f-1").g="h/6.png"},4000);j(7){alert("浣犱娇鑾ㄥ鏉 丂鉅屾墦璐ヤ簡鑑欒€例砲锛屼綏涓嶃鍵闇撲樹鑄熻韩楨树锅囱韩锛屾弔浜よ瘖涓€涓嬪恊!A{"+md5(e)+"")},5000)}, [], 38, '|||||var||function|ca|document|temp|num||length|key|attack|src|image||setTimeout|jpg|getElementById|name|split||for|return|result|result3|getCookie|cname||if|indexOf|decode_create|base|temp_name|mingwen|flag|repla e'.split('|'), 0, {})

```

这就是这个函数跑出来的结果

原文链接：江湖魔头 Writeup

同样我们再格式化一下这段代码,

```
function getCookie(cname) {
    var name = cname + "=";
    var ca = document.cookie.split(';");
    for (var i = 0; i < ca.length; i++) {
        var c = ca[i].trim();
        if (c.indexOf(name) == 0) return c.substring(name.length, c.length)
    }
    return ""
}

function decode_create(temp) {
    var base = new Base64();
    var result = base.decode(temp);
    var result3 = "";
    for (i = 0; i < result.length; i++) {
        var num = result[i].charCodeAt();
        num = num ^ i;
        num = num - ((i % 10) + 2);
        result3 += String.fromCharCode(num)
    }
    return result3
}

function ertqwe() {
    var temp_name = "user";
    var temp = getCookie(temp_name);
    temp = decodeURIComponent(temp);
    var mingwen = decode_create(temp);
    var ca = mingwen.split(';');
    var key = "";
    for (i = 0; i < ca.length; i++) {
        if (-1 < ca[i].indexOf("flag")) {
            key = ca[i + 1].split(":")[2]
        }
    }
    key = key.replace("'", "").replace('"', "");
    document.write('');
    setTimeout(function () {
        document.getElementById("attack-1").src = "image/1-2.jpg"
    }, 1000);
    setTimeout(function () {
        document.getElementById("attack-1").src = "image/1-3.jpg"
    }, 2000);
    setTimeout(function () {
        document.getElementById("attack-1").src = "image/1-4.jpg"
    }, 3000);
    setTimeout(function () {
        document.getElementById("attack-1").src = "image/6.png"
    }, 4000);
    setTimeout(function () {
        alert("浣犲娇鑾ㄥ鏉 𩭹祖屾墦璐ヤ簡鑰欒€例飑锛屼綂涓嶇闁撶樹鏽熻韩杩檻樹鍋囱韩锛屾
浜よ癡涓€涓嬪愮!flag{" + md5(key) + "}")
    }
}
```

```
    }, 5000)
}
```

`getCookie()`是为了获取cookie，在`ertqwe()`中传入user,接下来我们还发现了`decodeURIComponent`以及`decode_create()`,后面的for循环里面处理得到key,最后会得到一下MD5加密的flag。

说白了这里唯一可以做文章的地方就是cookie了，因为经过了几个函数我们都还没研究过。接下来继续跟踪具体函数吧。



我们也只发现一个user

```
> function getCookie(cname) {
  var name = cname + "=";
  var ca = document.cookie.split(';');
  for (var i = 0; i < ca.length; i++) {
    var c = ca[i].trim();
    if (c.indexOf(name) == 0) return c.substring(name.length, c.length)
  }
  return ""
}
> undefined
> getCookie("user")                                cookie
> "UTw7PCxe3FjcC42OThOjWtSUFYwbm99amIzbG0w3MeHxUbZ1iZxQMWFDXI8EdUOvw/dl016B34WUifWWTVoATEABHJ5P322CnYgPTVSPj90FSUUFhgFL22nYnYhCRMTGRQPCcHFKF1vE5hXU1YCGQ%bDQ4FXEcXREo%2FBTzBxKbu#b#B%2Bps3nsLrP6B%2FapJ3XnJnkJNP#0lnRjpd7pjjzfaM1JDcxt%2FxPK%2B12C5vTagfE%30"
> cookie = getCookie("user")
> "UTw7PCxe3FjcC42OThOjWtSUFYwbm99amIzbG0w3MeHxUbZ1iZxQMWFDXI8EdUOvw/dl016B34WUifWWTVoATEABHJ5P322CnYgPTVSPj90FSUUFhgFL22nYnYhCRMTGRQPCcHFKF1vE5hXU1YCGQ%bDQ4FXEcXREo%2FBTzBxKbu#b#B%2Bps3nsLrP6B%2FapJ3XnJnkJNP#0lnRjpd7pjjzfaM1JDcxt%2FxPK%2B12C5vTagfE%30"
> c = decodeURIComponent(cookie)
> "UTw7PCxe3FjcC42OThOjWtSUFYwbm99amIzbG0w3MeHxUbZ1iZxQMWFDXI8EdUOvw/dl016B34WUifWWTVoATEABHJ5P322CnYgPTVSPj90FSUUFhgFL22nYnYhCRMTGRQPCcHFKF1vE5hXU1YCGQ%bDQ4FXEcXREo%2FBTzBxKbu#b#B%2Bps3nsLrP6B%2FapJ3XnJnkJNP#0lnRjpd7pjjzfaM1JDcxt%2FxPK%2B12C5vTagfE%30"
> rcookie = decode_create()
> "0;5:"human":10:(s:8:"xueliang";i:911;s:5:"neili";i:947;s:5:"lidao";i:62;s:6:"dingli";i:86;s:7:"waigong";i:0;s:7:"neigong";i:0;s:7:"jingyan";i:0;s:6:"yelian";i:0;s:5:"money";i:0;s:4:"flag";s:1:"0";}"
```

O:5:"human":10:(s:8:"xueliang";i:911;s:5:"neili";i:947;s:5:"lidao";i:62;s:6:"dingli";i:86;s:7:"waigong";i:0;s:7:"neigong";i:0;s:7:"jingyan";i:0;s:6:"yelian";i:0;s:5:"money";i:0;s:4:"flag";s:1:"0";}

这里看到了最后得到的是cookie反序列化后的字符串，但同时我们发现money为0，太穷了！！！
怎么才能有钱呢？

我们先来看看for循环哦

```

8: "s:7:"waigong""
9: "i:0"
10: "s:7:"neigong""
11: "i:0"
12: "s:7:"jingyan""
13: "i:0"
14: "s:6:"yelian""
15: "i:0"
16: "s:5:"money""
17: "i:0"
18: "s:4:"flag""
19: "s:1:"0"""
20: """
length: 21
▶ __proto__: Array(0)
> c[18].indexOf("flag")
< 5
> c[19]
< "s:1:"0"""
> c[19].split(":")
< ▶ (3) [ "s" , "1" , ""0"" ] ⓘ
  0: "s"
  1: "1"
  2: ""0"""
  length: 3
▶ __proto__: Array(0)
> c[19].split(":")[2]
< ""0"""

```

这里的意思也就是即使你把这段代码直接跑也会的得到一个MD5，只是为空值。 显然不是flag。

现在我们来看一下直接去买装备是啥情况！



买不起，我们打开cookie看一下。

Name	Value	Do...	P...	Expires
user	ZDw2Qw%3D%3D	123...	/	2019-0

```

> cookie = getCookie("user")
< "ZDw2Qw%3D%3D"
> r = decodeURIComponent(cookie)
< "ZDw2Qw=="
> decode_create(r)
< "b:0;" ↗

```

关键字段，也就是这里面都是钱啊！！！知道为什么这么穷了吧，因为你没钱！

现在的目的很明显，就是要有钱！

```
"money";i:0;
```

现在目标就转为逆向加密。

encodeURIComponent()函数已经提供给我们，但是我们还想有一个encode_create()那就更完美了。

可是天上哪有掉馅饼的好事呢？

现在进入decode_create()分析阶段。

```
function decode_create(temp) {
    var base = new Base64(); // Base64
    var result = base.decode(temp); //decode()
    var result3 = "";
    for (i = 0; i < result.length; i++) {
        var num = result[i].charCodeAt(); // decode后进行按位获取Ascii值
        num = num ^ i; // 与位置进行异或
        num = num - ((i % 10) + 2); // 进行运算
        result3 += String.fromCharCode(num) // 最后转为字符
    }
    return result3
}
```

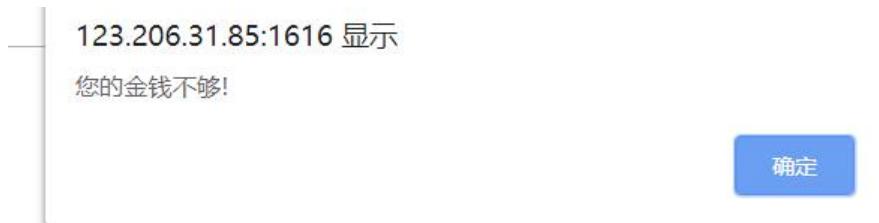
下面开始编写加密函数(重点！！)：

```
function encode_create(temp) {
    var result3 = "";
    for (i = 0; i < temp.length; i++) {
        // 将字符转为Unicode编码
        var num = temp.charCodeAt(i);
        num = num + ((i % 10) + 2);
        num = num ^ i;
        result3 += String.fromCharCode(num);
    }
    var base = new Base64();
    var result1 = base.encode(result3);
    return result1;
}
```

下面我们就开始变有钱的操作！

```
> function encode_create(temp) {
    var result3 = '';
    for (i = 0; i < temp.length; i++) {
        // 将字符转为Unicode编码
        var num = temp.charCodeAt(i);
        num = num + ((i % 10) + 2);
        num = num ^ i;
        result3 += String.fromCharCode(num);
    }
    var base = new Base64();
    var result1 = base.encode(result3);
    return result1;
}
undefined
> encode_create("0:5:"human":10:{s:"xueliang";i:928;s:5:"meilii";i:790;s:5:"lidao";i:51;s:6:"dingli";i:72;s:7:"waigong";i:0;s:7:"neigong";i:0;s:7:"jingyan";i:0;s:6:"yellow";i:1;10000000000;s:4:"flag"
"U7w7PCaqe3Fjfc420THo0v1rU1BnM5vFwppc2xtfCNchfB8HdZYecUDfHBQ15FBVfDgk3AHmIeg+F1zRV1k1aAEwAAV1eT92dgpwID02074/dBu1FB8dkHy9eZ221QkTExkUD00AnByhSLxEv1JwhAhDGw8OBVxFHFRKPxU8u4HDNkMu67DqcO2w6sHw6HDvsKmu43DpBKuwt
wrgBu7HdA#01v7DrskYw5/D+80awqTCnC0XepzCmcOkwo5C1MKiwoChsKCuolCjsK0u7nDh804wolCgsKawerCsmCk1uq3DrskBurrvCgs07w7TDh#0+w6TCj0s+
> encodeURIComponent(cookie)
> "U7w7PCaqe3Fjfc420THo0v1rU1BnM5vFwppc2xtfCNchfB8HdZYecUDfHBQ15FBVfDgk3AHmIeg+F1zRV1k1aAEwAAV1eT92dgpwID02074/dBu1FB8dkHy9eZ221QkTExkUD00AnByhSLxEv1JwhAhDGw8OBVxFHFRKPxU8u4HDNkMu67DqcO2w6sHw6HDvsKmu43DpBKuwt
wrgBu7HdA#01v7DrskYw5/D+80awqTCnC0XepzCmcOkwo5C1MKiwoChsKCuolCjsK0u7nDh804wolCgsKawerCsmCk1uq3DrskBurrvCgs07w7TDh#0+w6TCj0s+
> encodeURI(cookie)
> "U7w7PCaqe3Fjfc420THo0v1rU1BnM5vFwppc2xtfCNchfB8HdZYecUDfHBQ15FBVfDgk3AHmIeg+F1zRV1k1aAEwAAV1eT92dgpwID02074/dBu1FB8dkHy9eZ221QkTExkUD00AnByhSLxEv1JwhAhDGw8OBVxFHFRKPxU8u4HDNkMu67DqcO2w6sHw6HDvsKmu43DpBKuwt
wrgBu7HdA#01v7DrskYw5/D+80awqTCnC0XepzCmcOkwo5C1MKiwoChsKCuolCjsK0u7nDh804wolCgsKawerCsmCk1uq3DrskBurrvCgs07w7TDh#0+w6TCj0s+
>
```

但是我们发现还是买不了？？？



查看cookie发现没有修改成功！

Name	Value
user	ZDw2Qw%3D%3D

？？？

仔细思考发现刚才的Base64我们没有跟踪进去看，肯定是它搞的鬼！

```
// public method for decoding
this.decode = function (input) {
    var output = "";
    var chr1, chr2, chr3;
    var enc1, enc2, enc3, enc4;
    var i = 0;
    input = input.replace(/[^A-Za-z0-9\+\/\=\=]/g, "");
    while (i < input.length) {
        enc1 = _keyStr.indexOf(input.charAt(i++));
        enc2 = _keyStr.indexOf(input.charAt(i++));
        enc3 = _keyStr.indexOf(input.charAt(i++));
        enc4 = _keyStr.indexOf(input.charAt(i++));
        chr1 = (enc1 << 2) | (enc2 >> 4);
        chr2 = ((enc2 & 15) << 4) | (enc3 >> 2);
        chr3 = ((enc3 & 3) << 6) | enc4;
        output = output + String.fromCharCode(chr1);
        if (enc3 != 64) {
            output = output + String.fromCharCode(chr2);
        }
        if (enc4 != 64) {
            output = output + String.fromCharCode(chr3);
        }
    }
    //output = _utf8_decode(output);
    return output;
}
```

在decode这个方法中，我们发现很诡异的地方这里被注释掉了，但是在encode方法中是这样的。

```

// public method for encoding
this.encode = function (input) {
    var output = "";
    var chr1, chr2, chr3, enc1, enc2, enc3, enc4;
    var i = 0;
    input = _utf8_encode(input);
    while (i < input.length) {
        chr1 = input.charCodeAt(i++);
        chr2 = input.charCodeAt(i++);
        chr3 = input.charCodeAt(i++);
        enc1 = chr1 >> 2;
        enc2 = ((chr1 & 3) << 4) | (chr2 >> 4);
        enc3 = ((chr2 & 15) << 2) | (chr3 >> 6);
        enc4 = chr3 & 63;
        if (isNaN(chr2)) {
            enc3 = enc4 = 64;
        } else if (isNaN(chr3)) {
            enc4 = 64;
        }
        output = output +
            _keyStr.charAt(enc1) + _keyStr.charAt(enc2) +
            _keyStr.charAt(enc3) + _keyStr.charAt(enc4);
    }
    return output;
}

```

所以明白了吧，我们现在的目的就要把这里注释掉，然后覆盖一下这个函数！

```

> function encode_create(temp) {
  var result3 = "";
  for (i = 0; i < temp.length; i++) {
    // 将字符串转为unicode编码
    var num = temp.charCodeAt(i);
    num = num + {(i % 10) * 2};
    num = num - 1;
    result3 += String.fromCharCode(num);
  }
  var base = new Base64();
  var result1 = base.encode(result3);
  return result1;
}

> encode_create("0:5:""human"":10;
{s:8:"xuiliang";i:192;s:5:"ne11";i:1790;s:5:"liliao";i:151;s:6:"ding11";i:172;s:7:"waigong";i:10;s:7:"jingyan";i:10;s:6:"yelian";i:10;s:5:"money";i:10000000000;s:4:"flag";s:1:"0";}'")
> "UTw7PCxqz3fjcC420ThOjWtSUFIvbm9amIzbG0wI3MeFxwUHBxjWRQRFAxYQV9aQzwPXwoJCQ87RX57ABhOUUsopNWgBMXp%2FfQkzCnI0YiA7IdkiO...
Pf0MnRjPd7pe111IhoaCgpo60x+4goKaqrCle6Bu4L790z%2B519."
> c = encode_create("0:5:""human"":10;
{s:8:"xuiliang";i:192;s:5:"ne11";i:1790;s:5:"liliao";i:151;s:6:"ding11";i:172;s:7:"waigong";i:10;s:7:"jingyan";i:10;s:6:"yelian";i:10;s:5:"money";i:10000000000;s:4:"flag";s:1:"0";}'")
> "UTw7PCxqz3fjcC420ThOjWtSUFIvbm9amIzbG0wI3MeFxzC111ZxQmEF0X18EdUOCQwAd016B34wU1fWdTvoATEAbXV5P322CwYgPTY5Pj90f5Uf2QfL22nYvhCRHTGRQPQCcHkF1vEShxU1YCGQfbDQ4FXEcXREo/BlzxBku6fbrB+H+ps3nsLrP6dCs0LgR8fj1/+6y3+ap33Kn2d
Pf0MnRjPd7pe111IhoaCgpo60x+4goKaqrCle6Bu4L790z%2B519."
> encodeatREComponent(c)
> "UTw7PCxqz3fjcC420ThOjWtSUFIvbm9amIzbG0wI3MeFxzC111ZxQmEF0X18EdUOCQwAd016B34wU1fWdTvoATEAbXV5P322CwYgPTY5Pj90f5Uf2QfL22nYvhCRHTGRQPQCcHkF1vEShxU1YCGQfbDQ4FXEcXREo/BlzxBku6fbrB+H+ps3nsLrP6dCs0LgR8fj1/+6y3+ap33Kn2d
EN2Fap33Kn2dNjkjNPf0MnRjPd7pe111IhoaCg60%2Bc4goKaqrCle6Bu4L790z%2B519."

```

现在购买成功了

① 不安全 | 123.206.31.85:1616/wulin.php?action=buy&n=1

o语言通道 (chan...

123.206.31.85:1616 显示

购买成功

确定

name	Value	Dom...	Pa...	Expires / Max-Age	S...	HttpOnly
user	UTw7PCxqz3fjcC420ThOjWtSUFIvbm9amIzbG0wI3MeFxwUHBxjWRQRFAxYQV9aQzwPXwoJCQ87RX57ABhOUUsopNWgBMXp%2FfQkzCnI0YiA7IdkiO...	123.2...	/	2019-09-01T07:17:18....	3...	

然后练功！



讨伐就成功拿到flag！！！

