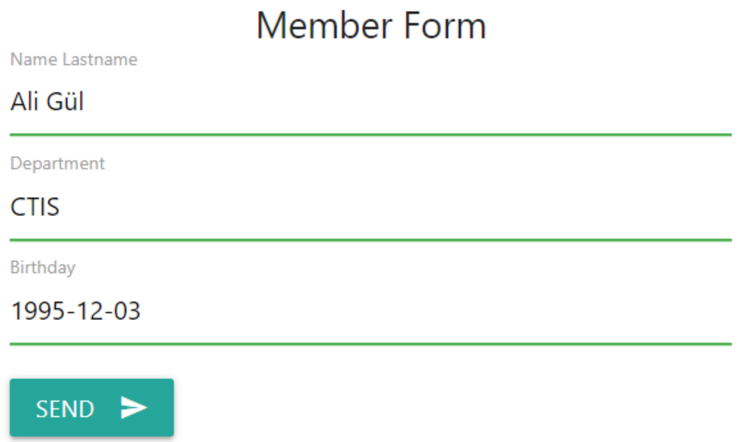
CTIS 256

Introduction to Backend Development

Note # 10 – File Uploading

Serkan GENÇ

POST Request (form data)



Member Form

Name Lastname

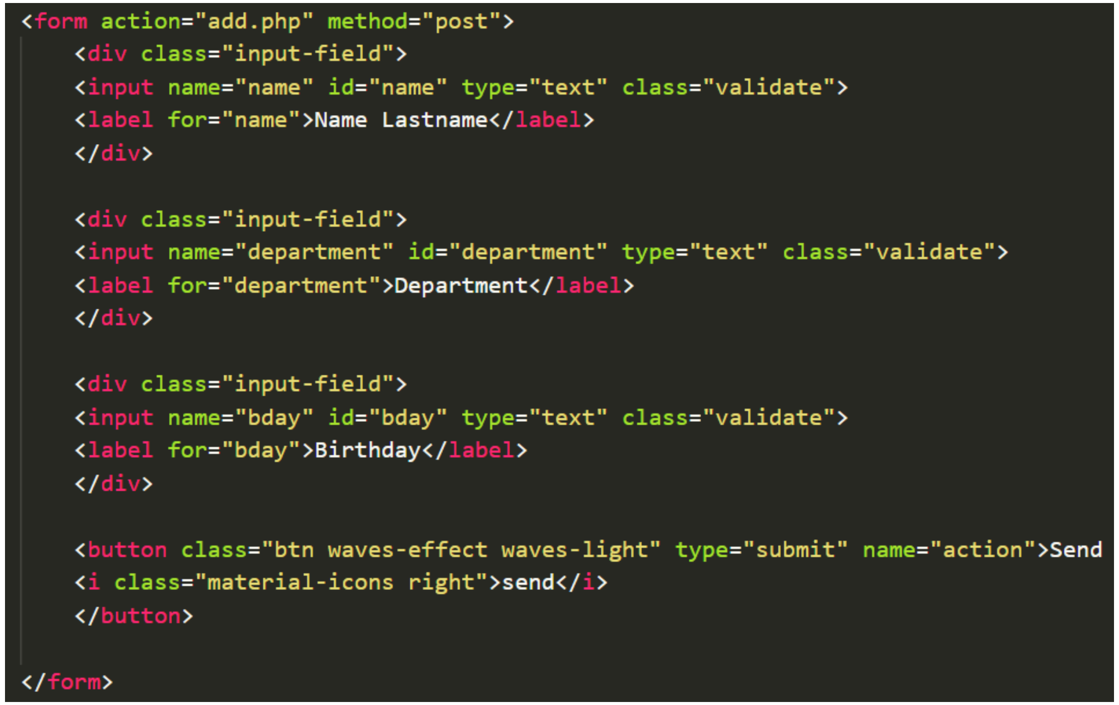
Ali Gül

Department

CTIS

Birthday

1995-12-03



```
<form action="add.php" method="post">
    <div class="input-field">
    <input name="name" id="name" type="text" class="validate">
    <label for="name">Name Lastname</label>
    </div>

    <div class="input-field">
    <input name="department" id="department" type="text" class="validate">
    <label for="department">Department</label>
    </div>

    <div class="input-field">
    <input name="bday" id="bday" type="text" class="validate">
    <label for="bday">Birthday</label>
    </div>

    <button class="btn waves-effect waves-light" type="submit" name="action">Send
    <i class="material-icons right">send</i>
    </button>

</form>
```

Request Line

```
POST /upload/add.php HTTP/1.1
```

Request Headers

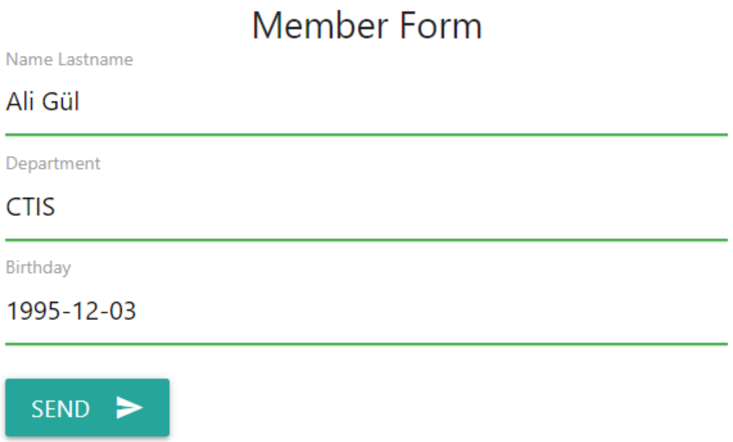
```
Host: localhost
Connection: keep-alive
Content-Length: 57
Cache-Control: max-age=0
Origin: http://localhost
Content-Type: application/x-www-form-urlencoded
User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64)
```

Request Body

```
name=Ali+G%C3%BCl&department=CTIS&bday=1995-12-03&action=
```

x-www-form-urlencoded : only for form data

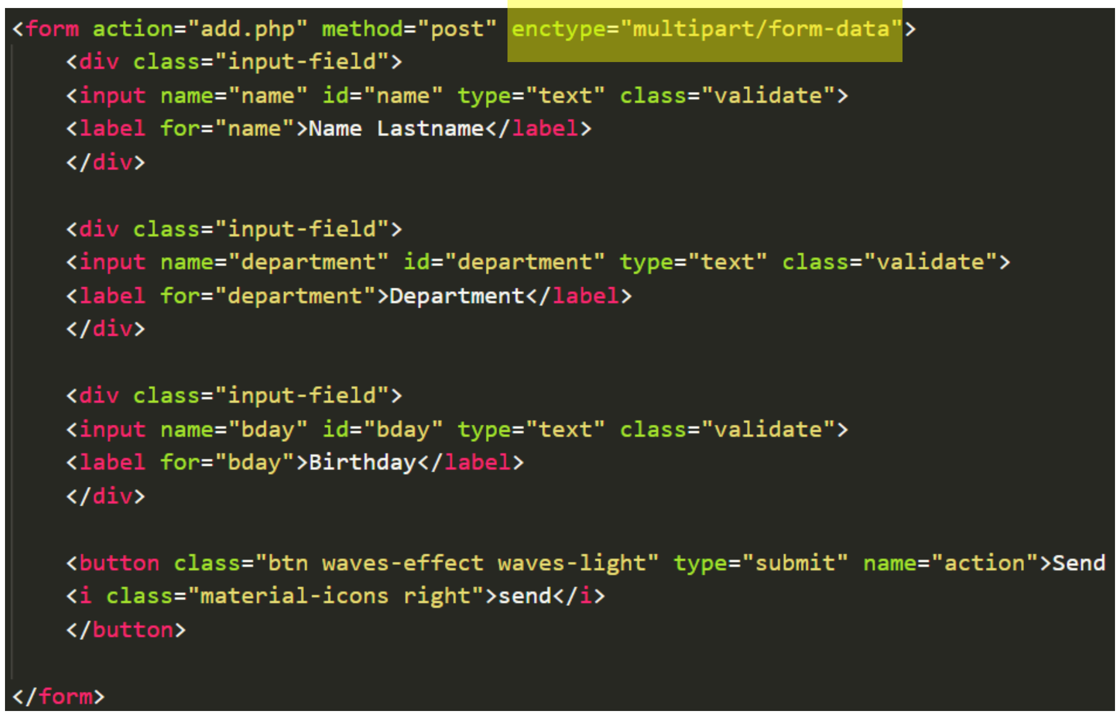
POST Request (form data)



Name Lastname: Ali Gül

Department: CTIS

Birthday: 1995-12-03



```
<form action="add.php" method="post" enctype="multipart/form-data">
    <div class="input-field">
    <input name="name" id="name" type="text" class="validate">
    <label for="name">Name Lastname</label>
    </div>

    <div class="input-field">
    <input name="department" id="department" type="text" class="validate">
    <label for="department">Department</label>
    </div>

    <div class="input-field">
    <input name="bday" id="bday" type="text" class="validate">
    <label for="bday">Birthday</label>
    </div>

    <button class="btn waves-effect waves-light" type="submit" name="action">Send
    <i class="material-icons right">send</i>
    </button>

</form>
```

Request Line

```
POST /upload/add.php HTTP/1.1
```

Request Headers

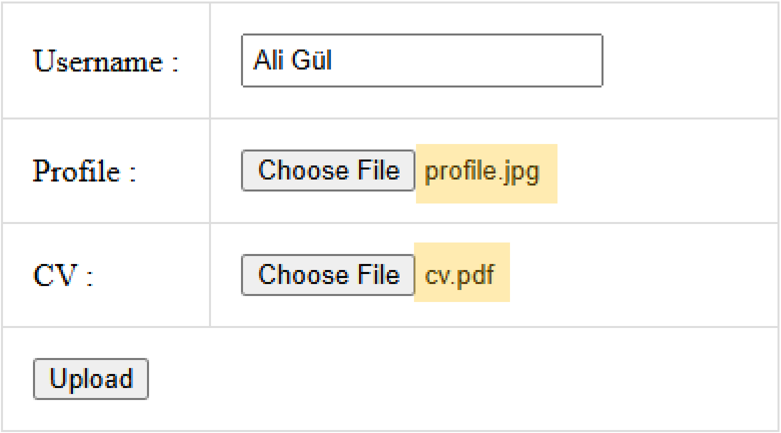
```
Host: localhost
Connection: keep-alive
Content-Length: 438
Cache-Control: max-age=0
Origin: http://localhost
Content-Type: multipart/form-data; boundary=----WebKitFormBoundary
```

Request Body

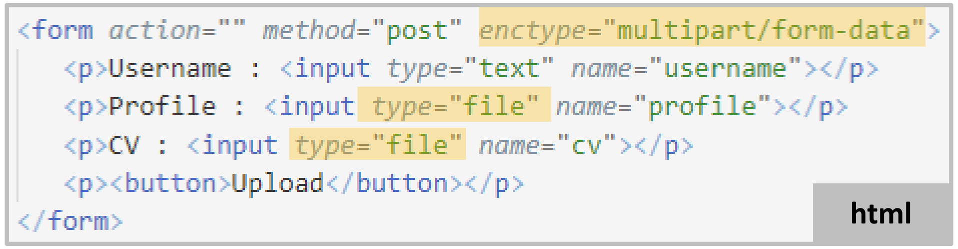
```
------WebKitFormBoundaryJA5FR3kguKv5JXoD      <------------------ separator
Content-Disposition: form-data; name="name"

Ali GÜL
------WebKitFormBoundaryJA5FR3kguKv5JXoD      <------------------ separator
Content-Disposition: form-data; name="department"

CTIS
------WebKitFormBoundaryJA5FR3kguKv5JXoD      <------------------ separator
Content-Disposition: form-data; name="bday"

1999-09-19
```

File Uploading

Client-side



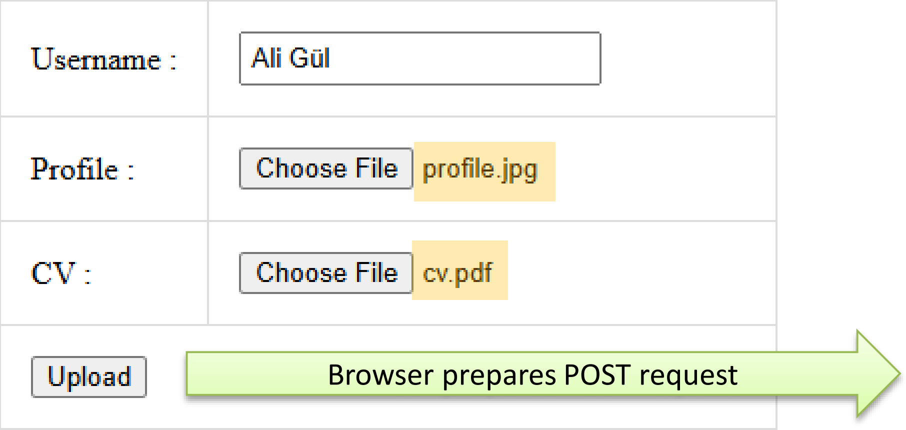
Username :	Ali Gül
Profile :	Choose File profile.jpg
CV :	Choose File cv.pdf
Upload	



```html
<form action="" method="post" enctype="multipart/form-data">
    <p>Username : <input type="text" name="username"></p>
    <p>Profile : <input type="file" name="profile"></p>
    <p>CV : <input type="file" name="cv"></p>
    <p><button>Upload</button></p>
</form>
```

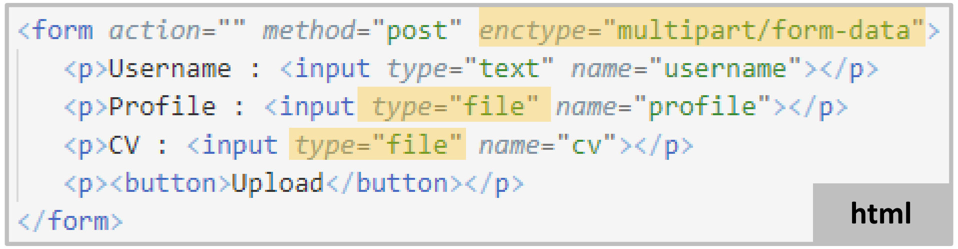
File Uploading

Client-side



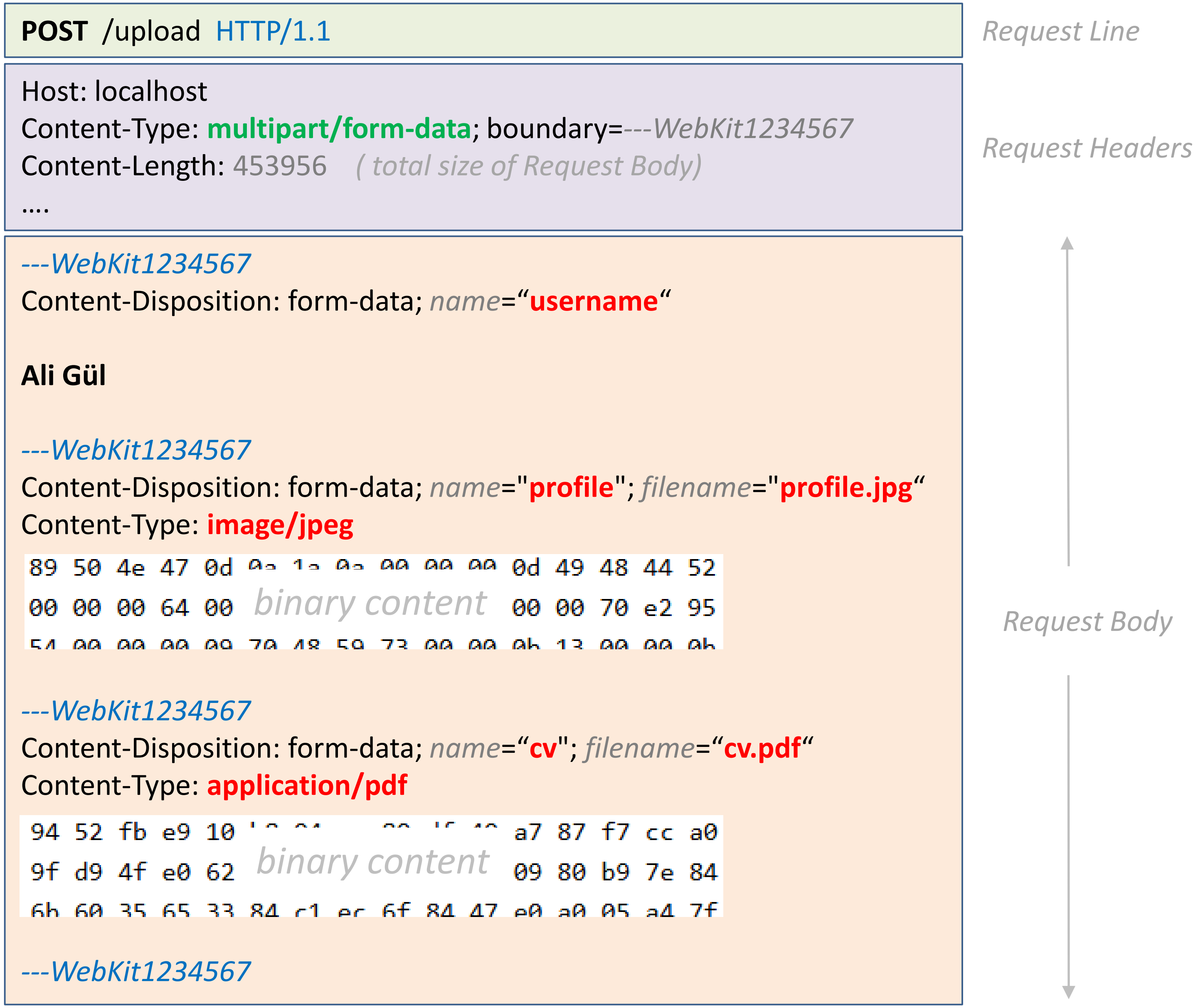
Username :	Ali Gül
Profile :	Choose File profile.jpg
CV :	Choose File cv.pdf
Upload	

Browser prepares POST request



```html
<form action="" method="post" enctype="multipart/form-data">
   <p>Username : <input type="text" name="username"></p>
   <p>Profile : <input type="file" name="profile"></p>
   <p>CV : <input type="file" name="cv"></p>
   <p><button>Upload</button></p>
</form>
```

html



```
POST  /upload  HTTP/1.1

Host: localhost
Content-Type: multipart/form-data; boundary=---WebKit1234567
Content-Length: 453956    ( total size of Request Body)
....

---WebKit1234567
Content-Disposition: form-data; name="username"

Ali Gül

---WebKit1234567
Content-Disposition: form-data; name="profile"; filename="profile.jpg"
Content-Type: image/jpeg
89 50 4e 47 0d 0a 1a 0a 00 00 00 0d 49 48 44 52
00 00 00 64 00  binary content  00 00 70 e2 95
54 00 00 00 09 70 48 59 73 00 00 0b 13 00 00 0b

---WebKit1234567
Content-Disposition: form-data; name="cv"; filename="cv.pdf"
Content-Type: application/pdf
94 52 fb e9 10 [illegible] a7 87 f7 cc a0
9f d9 4f e0 62  binary content  09 80 b9 7e 84
6b 60 35 65 33 84 c1 ec 6f 84 47 e0 a0 05 a4 7f

---WebKit1234567
```

File Uploading

POST /upload HTTP/1.1

Host: localhost
Content-Type: **multipart/form-data**; boundary=---*WebKit1234567*
Content-Length: 453956 *(total size of Request Body)*
....

---*WebKit1234567*
Content-Disposition: form-data; *name*="**username**"

Ali Gül

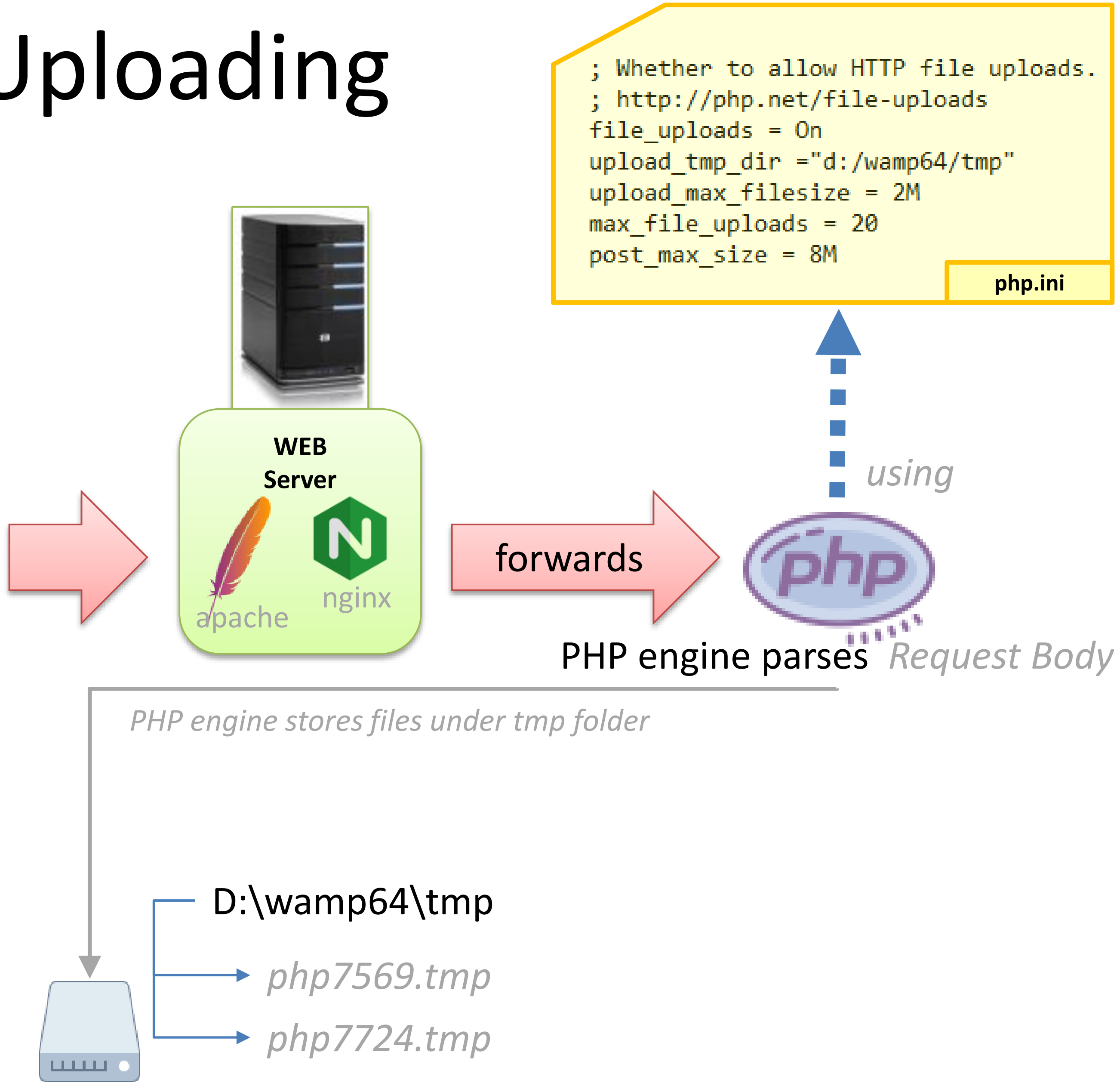
---*WebKit1234567*
Content-Disposition: form-data; *name*="**profile**"; *filename*="**profile.jpg**"
Content-Type: **image/jpeg**

```
89 50 4e 47 0d 0a 1a 0a 00 00 00 0d 49 48 44 52
00 00 00 64 00  binary content  00 00 70 e2 95
54 00 00 00 09 70 48 59 73 00 00 0b 13 00 00 0b
```

---*WebKit1234567*
Content-Disposition: form-data; *name*="**cv**"; *filename*="**cv.pdf**"
Content-Type: **application/pdf**

```
94 52 fb e9 10                a7 87 f7 cc a0
9f d9 4f e0 62  binary content  09 80 b9 7e 84
6b 60 35 65 33 84 c1 ec 6f 84 47 e0 a0 05 a4 7f
```

---*WebKit1234567*



```
; Whether to allow HTTP file uploads.
; http://php.net/file-uploads
file_uploads = On
upload_tmp_dir ="d:/wamp64/tmp"
upload_max_filesize = 2M
max_file_uploads = 20
post_max_size = 8M
```

php.ini

WEB Server
apache
nginx
forwards
using
PHP engine parses *Request Body*
PHP engine stores files under tmp folder
D:\wamp64\tmp
php7569.tmp
php7724.tmp

File Uploading

POST /upload HTTP/1.1

Host: localhost
Content-Type: **multipart/form-data**; boundary=---*WebKit1234567*
Content-Length: 453956 *(total size of Request Body)*
....

---WebKit1234567
Content-Disposition: form-data; *name*=“**username**“

Ali Gül

---WebKit1234567
Content-Disposition: form-data; *name*="**profile**"; *filename*="**profile.jpg**“
Content-Type: **image/jpeg**

```
89 50 4e 47 0d 0a 1a 0a 00 00 00 0d 49 48 44 52
00 00 00 64 00  binary content  00 00 70 e2 95
54 00 00 00 09 70 48 59 73 00 00 0b 13 00 00 0b
```

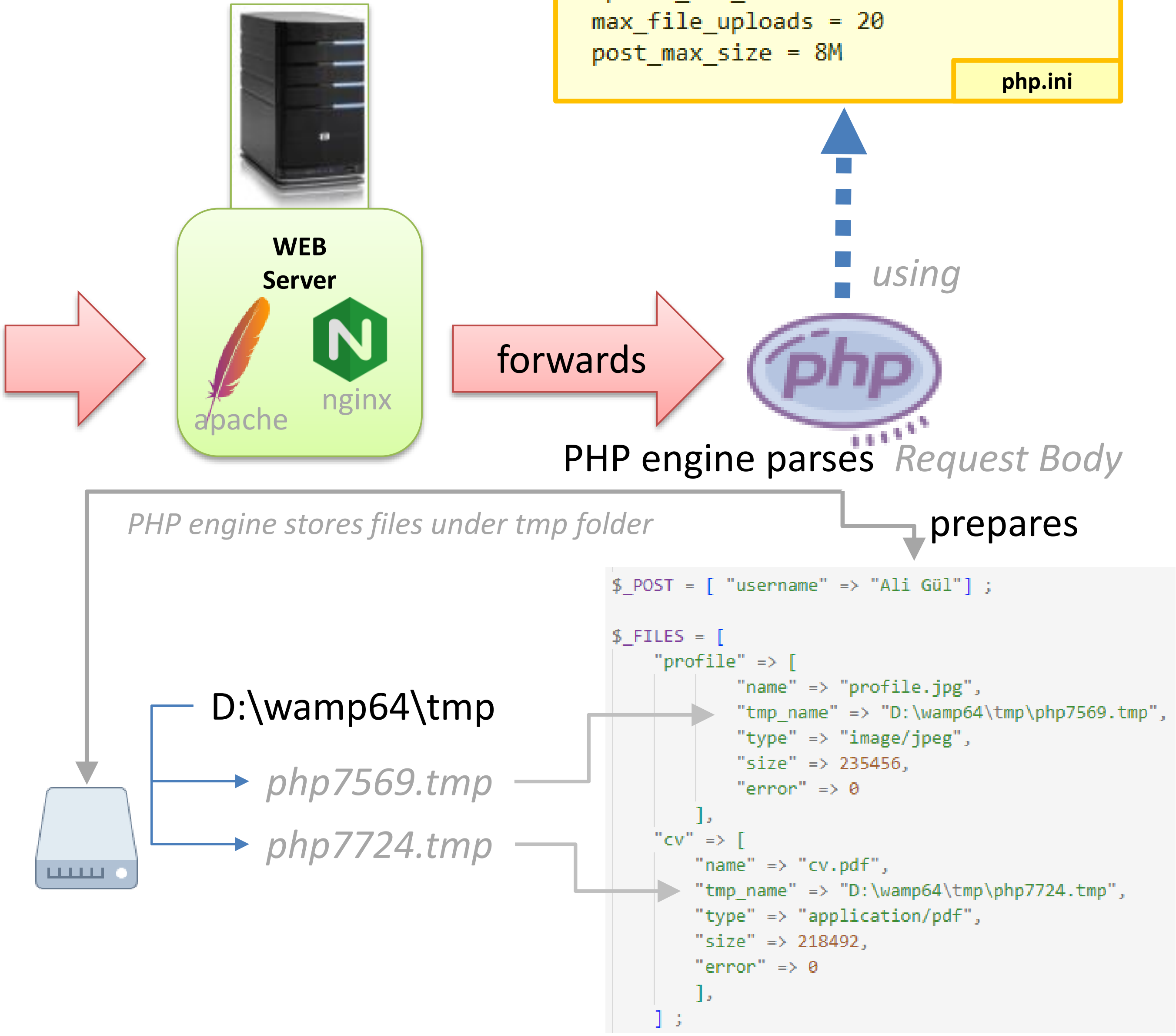
---WebKit1234567
Content-Disposition: form-data; *name*=“**cv**"; *filename*=“**cv.pdf**“
Content-Type: **application/pdf**

```
94 52 fb e9 10                a7 87 f7 cc a0
9f d9 4f e0 62  binary content  09 80 b9 7e 84
6b 60 35 65 33 84 c1 ec 6f 84 47 e0 a0 05 a4 7f
```

---WebKit1234567

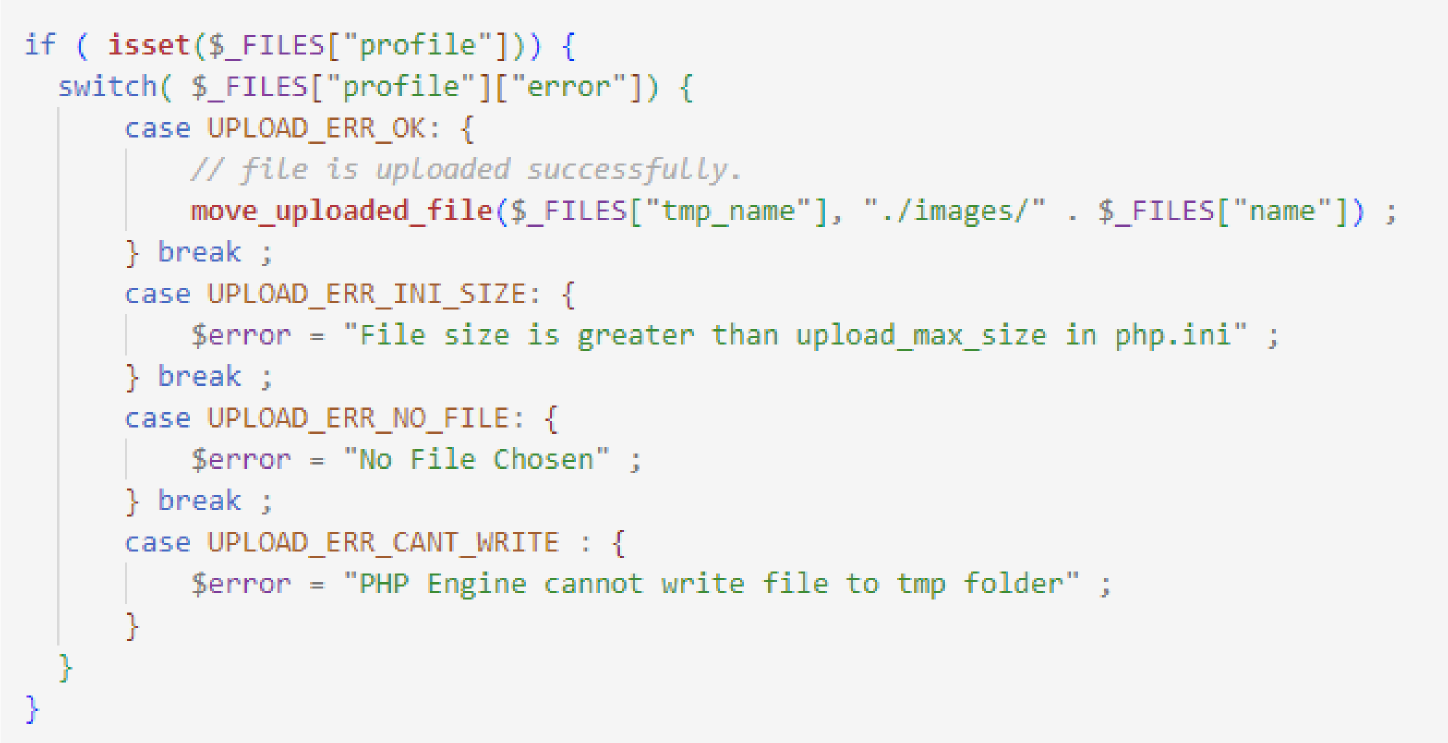
```
; Whether to allow HTTP file uploads.
; http://php.net/file-uploads
file_uploads = On
upload_tmp_dir ="d:/wamp64/tmp"
upload_max_filesize = 2M
max_file_uploads = 20
post_max_size = 8M
```

php.ini



```
$_POST = [ "username" => "Ali Gül"] ;

$_FILES = [
    "profile" => [
            "name" => "profile.jpg",
            "tmp_name" => "D:\wamp64\tmp\php7569.tmp",
            "type" => "image/jpeg",
            "size" => 235456,
            "error" => 0
        ],
    "cv" => [
        "name" => "cv.pdf",
        "tmp_name" => "D:\wamp64\tmp\php7724.tmp",
        "type" => "application/pdf",
        "size" => 218492,
        "error" => 0
        ],
    ] ;
```

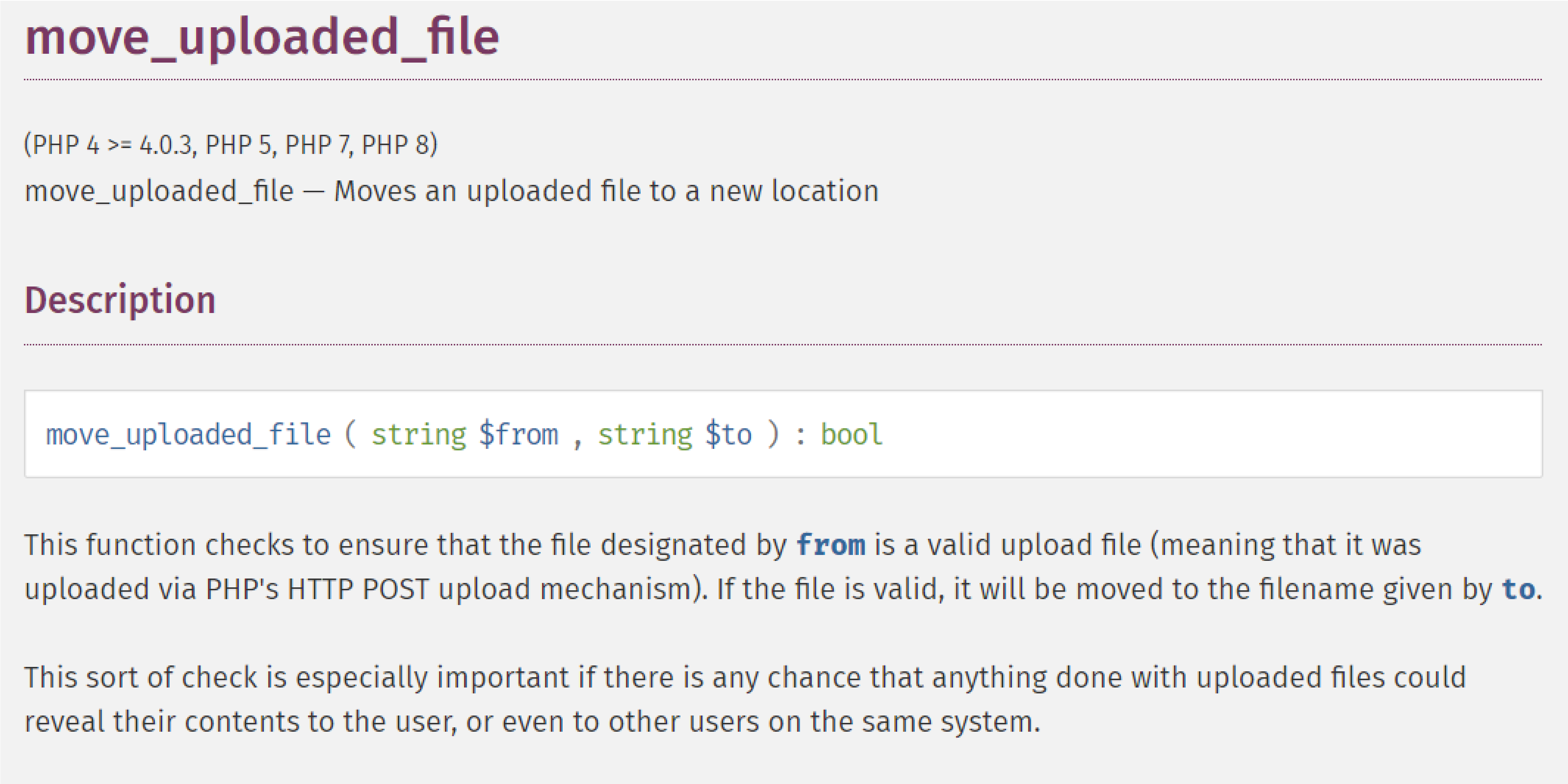
Error Cases



```
if ( isset($_FILES["profile"])) {
  switch( $_FILES["profile"]["error"]) {
      case UPLOAD_ERR_OK: {
          // file is uploaded successfully.
          move_uploaded_file($_FILES["tmp_name"], "./images/" . $_FILES["name"]) ;
      } break ;
      case UPLOAD_ERR_INI_SIZE: {
          $error = "File size is greater than upload_max_size in php.ini" ;
      } break ;
      case UPLOAD_ERR_NO_FILE: {
          $error = "No File Chosen" ;
      } break ;
      case UPLOAD_ERR_CANT_WRITE : {
          $error = "PHP Engine cannot write file to tmp folder" ;
      }
  }
}
```

Attention:

- *if the file size is greater than "upload_max_filesize" in "php.ini", the file size is set to 0 (zero)*
- *if total post size exceeds "post_max_size", Php engine sets $_POST and $_FILES arrays empty.*
- *therefore, set "upload_max_filesize" and "post_max_size" decent big values like 16M and 32M respectively in "php.ini" file.*



move_uploaded_file

(PHP 4 >= 4.0.3, PHP 5, PHP 7, PHP 8)

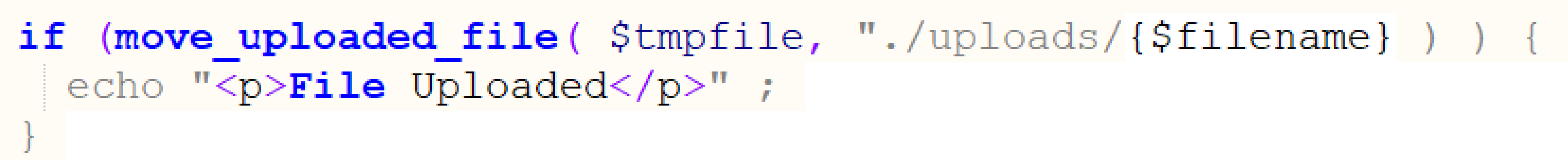
move_uploaded_file — Moves an uploaded file to a new location

Description

```
move_uploaded_file ( string $from , string $to ) : bool
```

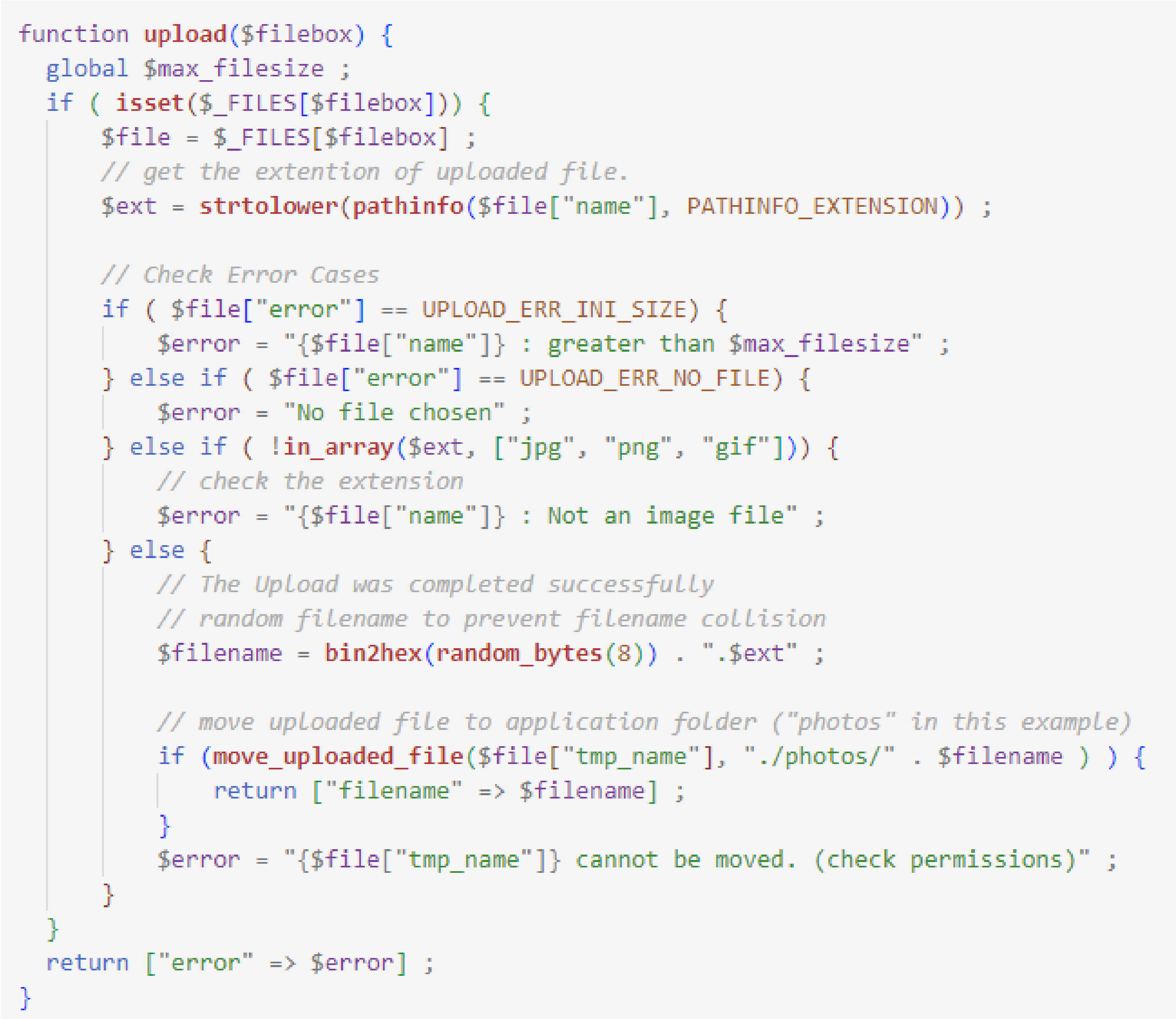
This function checks to ensure that the file designated by **from** is a valid upload file (meaning that it was uploaded via PHP's HTTP POST upload mechanism). If the file is valid, it will be moved to the filename given by **to**.

This sort of check is especially important if there is any chance that anything done with uploaded files could reveal their contents to the user, or even to other users on the same system.



```
if (move_uploaded_file( $tmpfile, "./uploads/{$filename} ) ) {
   echo "<p>File Uploaded</p>" ;
}
```

Sample Upload Function



```php
function upload($filebox) {
  global $max_filesize ;
  if ( isset($_FILES[$filebox])) {
      $file = $_FILES[$filebox] ;
      // get the extention of uploaded file.
      $ext = strtolower(pathinfo($file["name"], PATHINFO_EXTENSION)) ;

      // Check Error Cases
      if ( $file["error"] == UPLOAD_ERR_INI_SIZE) {
          $error = "{$file["name"]} : greater than $max_filesize" ;
      } else if ( $file["error"] == UPLOAD_ERR_NO_FILE) {
          $error = "No file chosen" ;
      } else if ( !in_array($ext, ["jpg", "png", "gif"])) {
          // check the extension
          $error = "{$file["name"]} : Not an image file" ;
      } else {
          // The Upload was completed successfully
          // random filename to prevent filename collision
          $filename = bin2hex(random_bytes(8)) . ".$ext" ;

          // move uploaded file to application folder ("photos" in this example)
          if (move_uploaded_file($file["tmp_name"], "./photos/" . $filename ) ) {
              return ["filename" => $filename] ;
          }
          $error = "{$file["tmp_name"]} cannot be moved. (check permissions)" ;
      }
  }
  return ["error" => $error] ;
}
```