

8-

```
abdullah@abdullah-Vostro-5468:/var/www/os.iti.gov.eg$ ls
access.log  error.log  index.html
```

```
abdullah@abdullah-Vostro-5468:/etc/apache2/sites-available$ ls
000-default.conf  default-ssl.conf  os.iti.gov.eg.conf
abdullah@abdullah-Vostro-5468:/etc/apache2/sites-available$ sudo vi os.iti.gov.eg.conf
```

```
Terminal - abdullah@abdullah-Vostro-5468: /etc/apache2/sites-available

File Edit View Terminal Tabs Help

<VirtualHost *:80>
DocumentRoot /var/www/os.iti.gov.eg
ServerName os.iti.gov.eg
ErrorLog /var/www/os.iti.gov.eg/error.log
CustomLog /var/www/os.iti.gov.eg/access.log combined
</VirtualHost>
```

```
abdullah@abdullah-Vostro-5468:~$ sudo vi /etc/hosts
```

```
File Edit View Terminal Tabs Help
127.0.0.1      localhost os.iti.gov.eg
127.0.1.1      abdullah-Vostro-5468
```

```
abdullah@abdullah-Vostro-5468:/var/www/os.iti.gov.eg$ sudo a2ensite os.iti.gov.eg.conf
Site os.iti.gov.eg already enabled
abdullah@abdullah-Vostro-5468:/var/www/os.iti.gov.eg$ sudo systemctl restart apache2
```

```
← → ↻ ⚠ Not secure os.iti.gov.eg

hello it is iti page
```

9-

```
abdullah@abdullah-Vostro-5468:~$ sudo a2enmod rewrite
Module rewrite already enabled
abdullah@abdullah-Vostro-5468:~$ sudo systemctl restart apache2
```

```
abdullah@abdullah-Vostro-5468:~$ apachectl -M | grep rewrite
rewrite_module (shared)
```

10-

1 - Making clean and friendly URLs
(so users and Google like them)

Example:

From: `example.com/page.php?id=10`

To: example.com/page/10

2 - Redirecting old pages to new ones
(so you don't lose visitors when your site changes)

Example:

Someone visits `example.com/old-page` They are automatically sent to example.com/new-page.

Bonus -

```
abdullah@abdullah-Vostro-5468:/etc/apache2/sites-available$ sudo vi os.iti.gov.eg.conf
```

```
File Edit View Terminal Tabs Help
<VirtualHost *:80>
DocumentRoot /var/www/os.iti.gov.eg
ServerName os.iti.gov.eg
ErrorLog /var/www/os.iti.gov.eg/error.log
CustomLog /var/www/os.iti.gov.eg/access.log combined
    <Directory /var/www/os.iti.gov.eg>
        AllowOverride All
        Require all granted
    </Directory>
</VirtualHost>
```

```
abdullah@abdullah-Vostro-5468:/etc/apache2/sites-available$ sudo systemctl restart apache2
```

```
abdullah@abdullah-Vostro-5468:/var/www/os.iti.gov.eg$ sudo vi .htaccess
```

```
File Edit View Terminal Tabs Help
RewriteEngine On
RewriteRule ^student/7$ /students_profiles.php?student_id=7 [L]
```

← → ↻ ⚠ Not secure os.iti.gov.eg/students_profiles.php?student_id=7

this is the students_profile.php

← → ↻ ⚠ Not secure os.iti.gov.eg/student/7

this is the students_profile.php

=====

1-

```
abdullah@abdullah-Vostro-5468:~$ sudo apache2ctl -V | grep MPM
Server MPM: event
```

```
abdullah@abdullah-Vostro-5468:~$ sudo a2dismod mpm_event
[sudo] password for abdullah:
Module mpm_event disabled.
To activate the new configuration, you need to run:
systemctl restart apache2
```

```
abdullah@abdullah-Vostro-5468:~$ sudo a2enmod mpm_worker
```

```
abdullah@abdullah-Vostro-5468:/etc/apache2/mods-available$ sudo vi mpm_worker.conf
```

```
<IfModule mpm_worker_module>
    StartServers          2
    MinSpareThreads       25
    MaxSpareThreads       75
    ThreadLimit           64
    ThreadsPerChild       25
    MaxRequestWorkers     150
    MaxConnectionsPerChild 0
</IfModule>
```

```
abdullah@abdullah-Vostro-5468:~$ sudo systemctl restart apache2
```

Loaded successfully

```
abdullah@abdullah-Vostro-5468:~$ sudo apache2ctl -M | grep mpm
mpm_worker_module (shared)
```

Running successfully

```
abdullah@abdullah-Vostro-5468:~$ sudo apache2ctl -V | grep MPM
Server MPM: worker
```

2-

```
abdullah@abdullah-Vostro-5468:~$ apachectl -M | grep rewrite
rewrite_module (shared)
abdullah@abdullah-Vostro-5468:~$ sudo a2enmod rewrite
Module rewrite already enabled
```

3- (a)

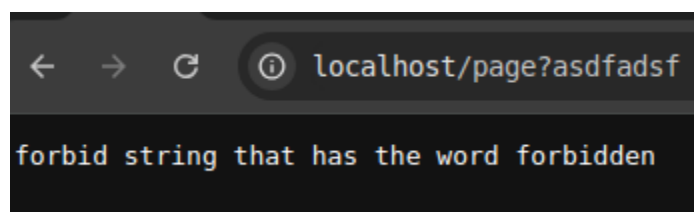
```
abdullah@abdullah-Vostro-5468:/var/www/html$ sudo vi .htaccess
```

```
File Edit View Terminal Tabs Help
Options +Indexes

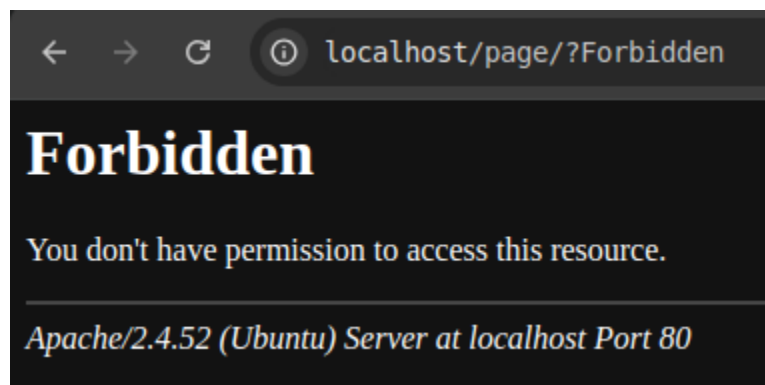
RewriteEngine On
RewriteCond "%{QUERY_STRING}" "forbidden" [NC]
RewriteRule "^page/$" - [F,L]

~
~
```

I added page/ because when detect it has forbidden after "?" It considers page as directory and give me not found, therefore I force forbidden 403 to be shown even after automatically add "/" to page. Otherwise, work good.



A screenshot of a web browser's address bar and error message. The address bar shows "localhost/page?asdfadsf". Below it, the error message reads "forbid string that has the word forbidden".



A screenshot of a web browser displaying a "Forbidden" error page. The page has a dark background with the word "Forbidden" in large, bold, white letters. Below it, the message "You don't have permission to access this resource." is written in a smaller white font. At the bottom, it says "Apache/2.4.52 (Ubuntu) Server at localhost Port 80" in an italicized white font.

(b)

```
RewriteEngine On
RewriteRule ^page$ /page [R,L,QSD]
```

(c)

Name	Status	Type	Initiator
page1?var=val	301	document /...	Other
page2?var=val	200	document	<u>/page1?var=val</u>

```
RewriteEngine On
RewriteCond %{QUERY_STRING} var
RewriteRule ^page1$ /page2 [QSA,R=301,L]
```

localhost/page1?vay=val

page1

Elements

Filter

All Fetch/XHR Doc

20 ms

Name

page1?vay=val

(d)

```
File Edit View Terminal Tabs Help

RewriteEngine On
RewriteCond %{REQUEST_URI} ^/path$
RewriteCond %{QUERY_STRING} var=val
RewriteRule ^ /path/var/val? [R=301,L]
```

← → ↻ localhost/path/var/val

Not Found

The requested URL was not found on this server.

Apache/2.4.52 (Ubuntu) Server at localhost Port 80

Elements Console Sources

Filter

Name	Status
path?var=val	301
val	404

(e)

```
File Edit View Terminal Tabs Help

RewriteEngine On
RewriteCond %{REQUEST_URI} ^/example/one/two$
RewriteRule ^ /something.cgi?arg=one&other=two [R=301,L]
```

← → ↻ localhost/something.cgi?arg=one&other=two

Not Found

The requested URL was not found on this server.

Apache/2.4.52 (Ubuntu) Server at localhost Port 80

Elements Console Sources Network Performance Memory >>

Filter

Name	Status	Type	Initiator
two	301	document / Red...	other
something.cgi?arg=one&other=two	404	document	/example/one/two

(f)

```
RewriteEngine On

RewriteCond %{TIME} >=180000
RewriteRule ^$ /goodevening.html [R,L]

RewriteCond %{TIME} <180000
RewriteRule ^$ /goodmorning.html [R,L]
```

localhost/goodevening.html

Not Found

The requested URL was not found on this server.

Apache/2.4.52 (Ubuntu) Server at localhost Port 80

Name	Status	Type	Initiator
localhost	302	document / Red...	Other
goodevening.html	404	document	{index}

(4)

```
File Edit View Terminal Tabs Help

RewriteEngine On
RewriteRule ^$ /localdir [R,L]
```

os.iti.gov.eg/localdir/

Index of /localdir

Name	Last modified	Size	Description
Parent Directory	-	-	-

Apache/2.4.52 (Ubuntu) Server at os.iti.gov.eg Port 80

Name	Status	Type	Initiator
os.iti.gov.eg	302	document / Red...	Other
localdir/	200	document	localdir

