

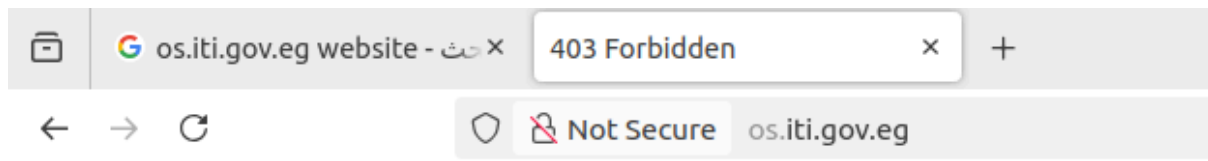
8. Create virtualhost for os.iti.gov.eg website

```
GNU nano 6.2 /etc/hosts

127.0.0.1    os.iti.gov.eg website
#127.0.0.1   localhost
127.0.1.1    hajar-G3-3500

# The following lines are desirable for IPv6 capable
::1         ip6-localhost ip6-loopback
fe00::0     ip6-localnet
ff00::0     ip6-mcastprefix
ff02::1     ip6-allnodes
ff02::2     ip6-allrouters
```

```
hajar@hajar-G3-3500: ~
GNU nano 6.2 /etc/apache2/sites-available/os.iti.gov.eg.conf *
VirtualHost *:80>
    ServerAdmin webmaster@os.iti.gov.eg
    DocumentRoot /var/www/os.iti.gov.eg
    ServerName os.iti.gov.eg
    ErrorLog ${APACHE_LOG_DIR}/error.log
    CustomLog ${APACHE_LOG_DIR}/access.log combined
/VirtualHost>
```



Forbidden

You don't have permission to access this resource.

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

9. Enable rewrite module

```
hajar@hajar-G3-3500:~$ sudo a2enmod rewrite
Enabling module rewrite.
To activate the new configuration, you need to run:
    systemctl restart apache2
hajar@hajar-G3-3500:~$ sudo systemctl restart apache2

hajar@hajar-G3-3500:~$ sudo ls /etc/apache2/mods-enabled
access_compat.load  authz_user.load    filter.load         reqtimeout.load
alias.conf          autoindex.conf     mime.conf           rewrite.load
alias.load          autoindex.load     mime.load           setenvif.conf
auth_basic.load     deflate.conf       mpm_event.conf     setenvif.load
authn_core.load     deflate.load        mpm_event.load     status.conf
authn_file.load     dir.conf           negotiation.conf   status.load
authz_core.load     dir.load           negotiation.load
authz_host.load     env.load           reqtimeout.conf
```

10. What is the importance of rewrite module?

--Rewrite Module is essential for:

- Improving SEO and user experience.

- Enhancing security and access control.

- Managing URL redirections and canonicalization.

- Handling dynamic content and routing.

By leveraging mod_rewrite, you can create a more robust, secure, and user-friendly web application.

lab 2

1-Configure apache to use Worker MPM

```
GNU nano 6.2 /etc/apache2/apache2.conf *
# see README.Debian for details.

# Include generic snippets of statements
IncludeOptional conf-enabled/*.conf

# Include the virtual host configurations:
IncludeOptional sites-enabled/*.conf

# vim: syntax=apache ts=4 sw=4 sts=4 sr noet
DirectoryIndex default.html index.html
<IfModule mpm_worker_module>
    StartServers      2
    MinSpareThreads   25
    MaxSpareThreads    75
    ThreadLimit        64
    ThreadsPerChild    25
    MaxClients         150
    MaxRequestsPerChild 0
</IfModule>

sudo: a2dismod: command not found
hajar@hajar-G3-3500:~$ apache2ctl -V |grep MPM
Server MPM:      event
hajar@hajar-G3-3500:~$ sudo a2dismod mpm_event
Module mpm_event disabled.
To activate the new configuration, you need to run:
    systemctl restart apache2
hajar@hajar-G3-3500:~$ sudo systemctl restart apache2
Job for apache2.service failed because the control process exited with
e.
See "systemctl status apache2.service" and "journalctl -xeu apache2.ser
details.
hajar@hajar-G3-3500:~$ sudo a2enmod mpm_worker
Considering conflict mpm_event for mpm_worker:
Considering conflict mpm_prefork for mpm_worker:
Enabling module mpm_worker.
To activate the new configuration, you need to run:
    systemctl restart apache2
hajar@hajar-G3-3500:~$ sudo systemctl restart apache2
hajar@hajar-G3-3500:~$ sudo nano /etc/apache2/apach2.conf
hajar@hajar-G3-3500:~$ sudo nano /etc/apache2/apache2.conf
hajar@hajar-G3-3500:~$ apache2ctl -V |grep MPM
Server MPM:      worker
```

2-Check the status of rewrite_mod and enable it if it is enabled.

```
status_module (shared)
hajar@hajar-G3-3500:~$ apache2ctl -M |grep rewrite_mod
AH00558: apache2: Could not reliably determine the server's fully qualified domain name, using 127.0.1.1. Set the 'ServerName' directive globally to suppress this message
rewrite_module (shared)
hajar@hajar-G3-3500:~$ sudo a2enmod rewrite
[sudo] password for hajar:
Module rewrite already enabled
hajar@hajar-G3-3500:~$
```

3- Write RewriteCond and RewriteRules for:

a) Deny access to http://localhost/page?queryString if queryString contains the string forbidden.

```
GNU nano 6.2 /var/www/html/.htaccess *
RewriteEngine On
#Deny access to http://localhost/page?queryString if queryString
# contains the string forbidden.
RewriteCond %{QUERY_STRING} forbidden
RewriteRule ^page$ - [F]
```



b. Remove the Query String

c. Rewrite URLs like http://localhost/page1?var=val to

http://localhost/page2?var=val but do not rewrite if val isn't present.

d. Take a URL of the form http://localhost/path?var=val and transform it into

http://localhost/path/var/val.

e. Map http://localhost/example/one/two to

http://localhost/something.cgi?arg=one&other=two

```
hajar@hajar-G3-3500: ~  
GNU nano 6.2 /var/www/html/.htaccess *  
RewriteEngine On  
#a) Deny access to http://localhost/page?queryString if queryString  
# contains the string forbidden.  
RewriteCond %{QUERY_STRING} forbidden  
RewriteRule ^page$ - [F]  
  
#b) Remove the query string from the URL  
RewriteCond %{QUERY_STRING} !^$  
RewriteRule ^(.*)$ /$1? [R=301,L]  
  
#c) Rewrite /page1?var=val to /page2?var=val - only if val is present  
RewriteCond %{QUERY_STRING} ^var=([^&]+)$  
RewriteRule ^page1$ /page2%{QUERY_STRING} [R=302,L]  
  
#d) Transform /path?var=val into /path/var/val  
RewriteCond %{QUERY_STRING} ^var=([^&]+)$  
RewriteRule ^path$ /path/var/%1? [R=302,L]  
  
#e) Map /example/one/two to /something.cgi?arg=one&other=two  
RewriteRule ^example/([^\s]+)/([^\s/]+)$ /something.cgi?arg=$1&other=$2 [QSA,L]  
  
^G Help      ^O Write Out  ^W Where Is   ^K Cut        ^T Execute    ^C Location  
^X Exit      ^R Read File  ^\ Replace    ^U Paste      ^J Justify    ^_ Go To Line
```

4-Create a virtual host for os.iti.gov.eg to redirect to a local directory in your server

```
hajar@hajar-G3-3500: ~  
GNU nano 6.2 /etc/apache2/sites-available/os.iti.gov.eg.conf *  
#  
# ServerAdmin webmaster@os.iti.gov.eg  
# DocumentRoot /var/www/os.iti.gov.eg  
#  
# ServerName os.iti.gov.eg  
#  
# ErrorLog ${APACHE_LOG_DIR}/error.log  
# CustomLog ${APACHE_LOG_DIR}/access.log combined  
#</VirtualHost>  
<VirtualHost *:80>  
    ServerName os.iti.gov.eg  
    DocumentRoot /var/www/os  
  
    <Directory /var/www/os>  
        Options Indexes FollowSymLinks  
        AllowOverride All  
        Require all granted  
    </Directory>  
  
    ErrorLog ${APACHE_LOG_DIR}/os_error.log  
    CustomLog ${APACHE_LOG_DIR}/os_access.log combined  
</VirtualHost>  
|  
  
^G Help      ^O Write Out  ^W Where Is   ^K Cut        ^T Execute    ^C Location  
^X Exit      ^R Read File  ^\ Replace    ^U Paste      ^J Justify    ^_ Go To Line
```

```
hajar@hajar-G3-3500:~$ sudo mkdir -p /var/www/os
hajar@hajar-G3-3500:~$ sudo chown -R $USER:$USER /var/www/os
hajar@hajar-G3-3500:~$ sudo nano /var/www/os/index.html
hajar@hajar-G3-3500:~$ sudo nano /etc/apache2/sites-available/os.itl.gov.eg.conf
hajar@hajar-G3-3500:~$ sudo a2ensite os.itl.gov.eg.conf
Site os.itl.gov.eg already enabled
hajar@hajar-G3-3500:~$ sudo systemctl reload apache2
hajar@hajar-G3-3500:~$ sudo nano /etc/hosts
hajar@hajar-G3-3500:~$ sudo systemctl restart apache2
hajar@hajar-G3-3500:~$
```

