

**PRN – 2020BTECS00211**  
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**Batch – T8**  
**Programming Lab-3**  
**Practical No. 4**  
**(To install and configure a Web Server)**

❖ **Problem Statement 1:**

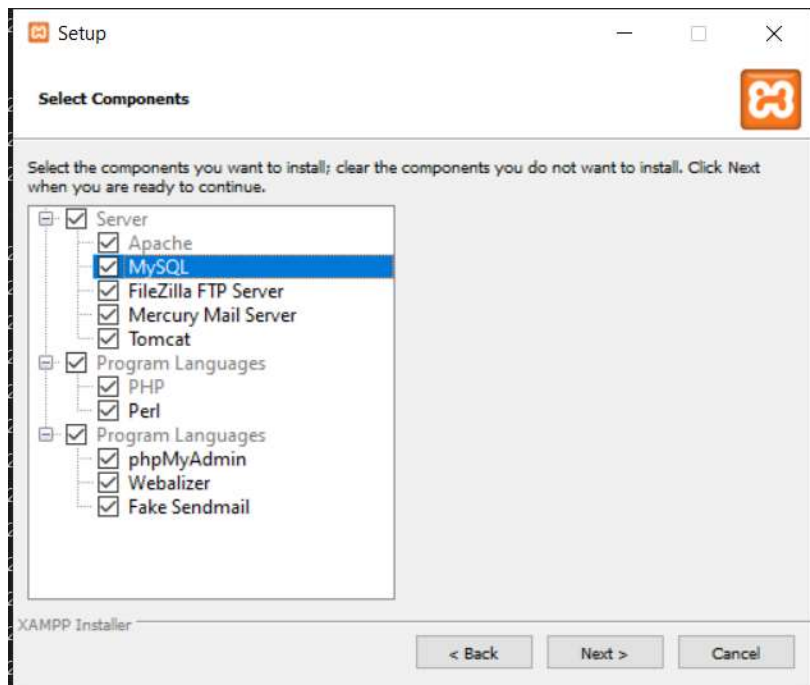
1. Install a web server on your machine. Run the server locally.
2. Locate and study its configuration file.
3. Change the port number in the configuration file to any other valid port number. Rerun the server locally using newly assigned port number.
4. Change the default IP address (127.0.0.1 or localhost) and port number of the server in the configuration file to any other valid IP address and port number. Re-run the server and access it in a network from another machine.

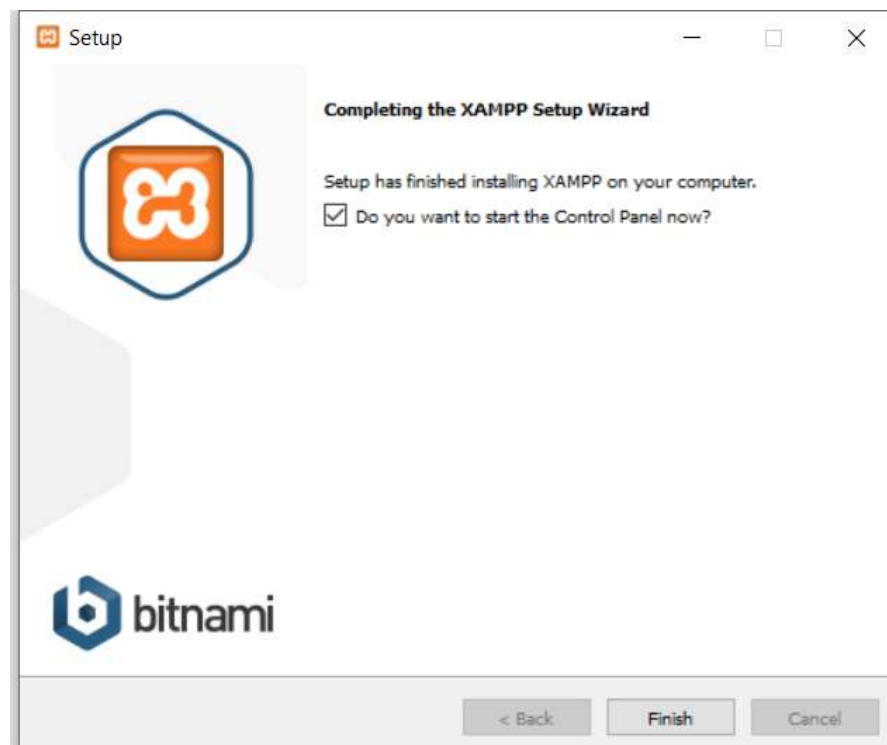
Some web servers:

Apache Tomcat, Microsoft IIS, XAMPP, LAMP, Nginx

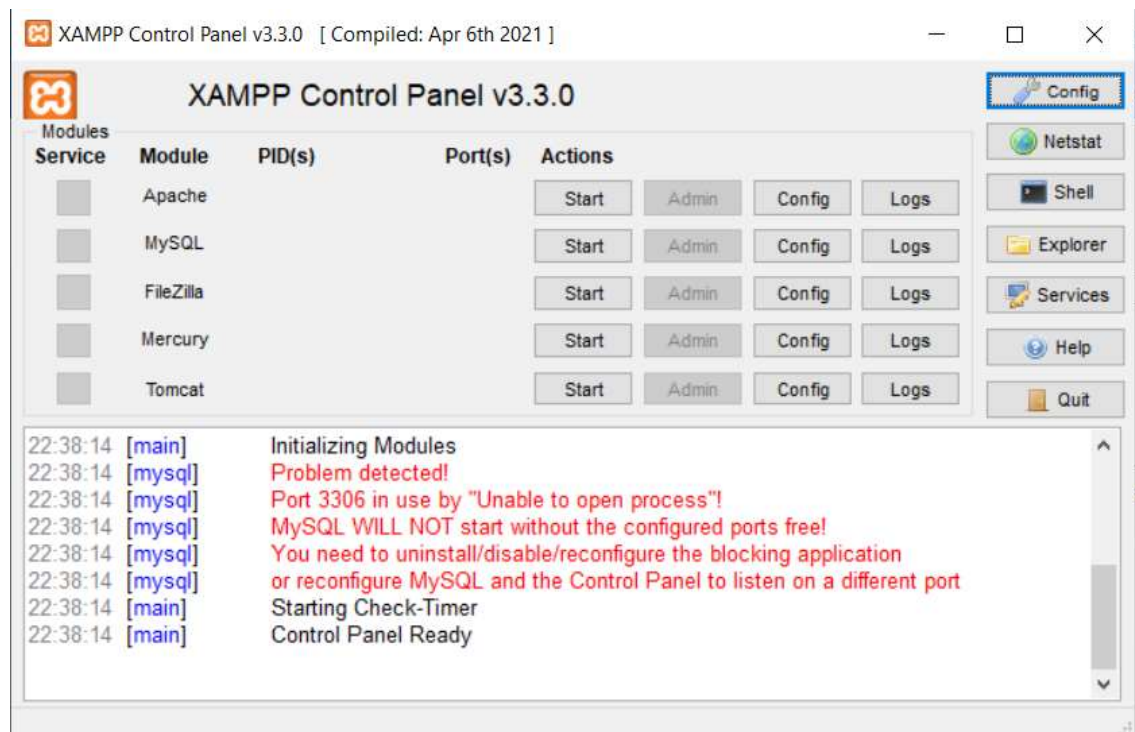
->

a) Installing XAMPP server.

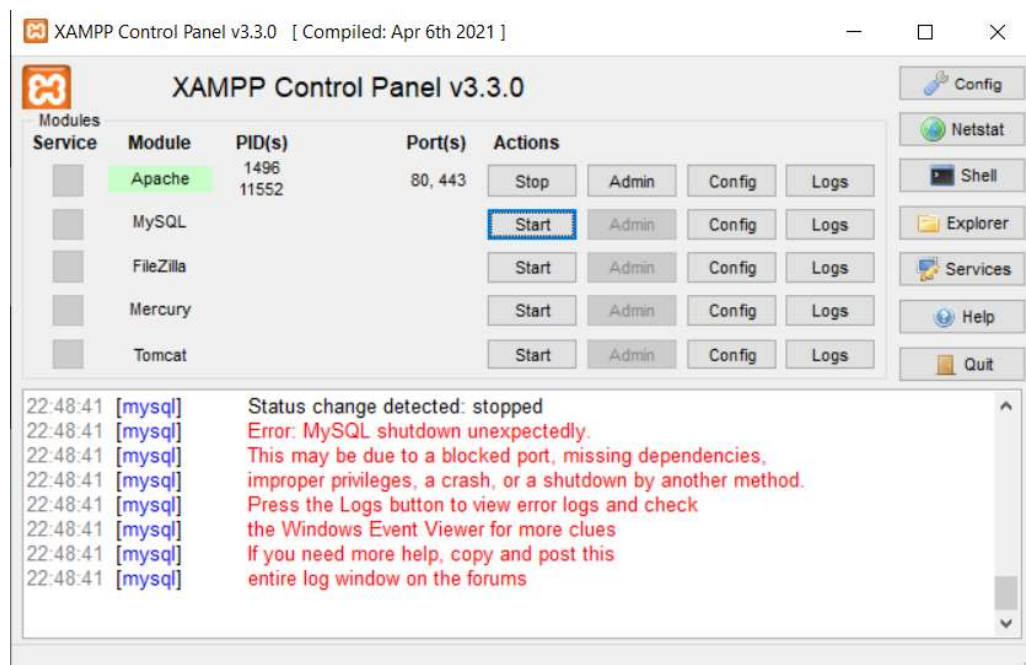




## XAMPP Window.



## Starting Apache HTTP server in XAMPP,



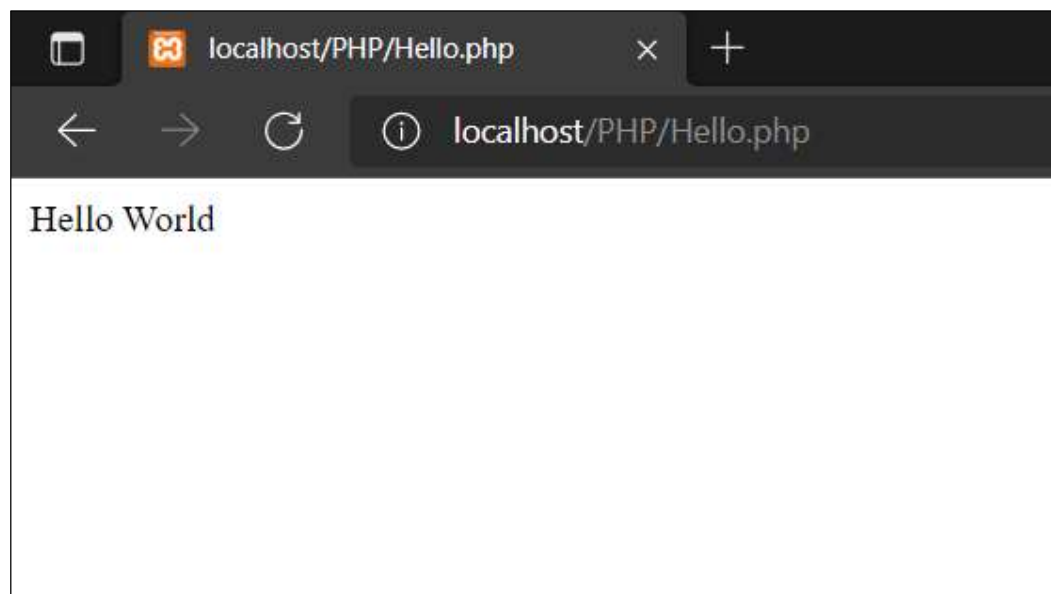
Sample php program,



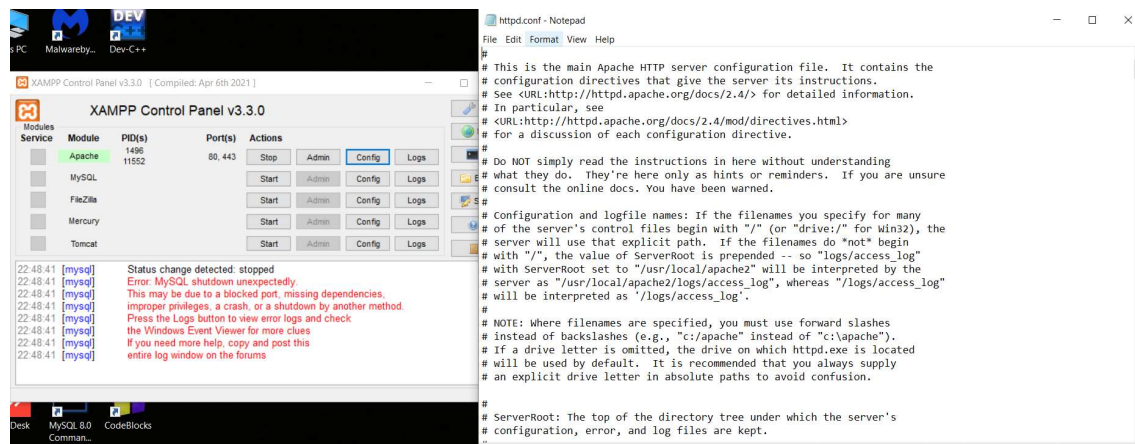
A screenshot of the Sublime Text editor interface. The title bar shows the file path 'C:\xampp\htdocs\PHP\Hello.php' and the text 'Sublime Text (UNREGISTERED)'. The menu bar includes 'File', 'Edit', 'Selection', 'Find', 'View', 'Goto', 'Tools', 'Project', 'Preferences', and 'Help'. There are two tabs open: 'StudentManage.java' and 'Hello.php'. The 'Hello.php' tab is active, displaying the following code:

```
1 <html>
2 <body>
3 <?php
4 echo "Hello World";
5 ?>
6 </body>
7 </html>
```

Running server locally ,



## b) Locating and studying apache(httpd.conf) config file.

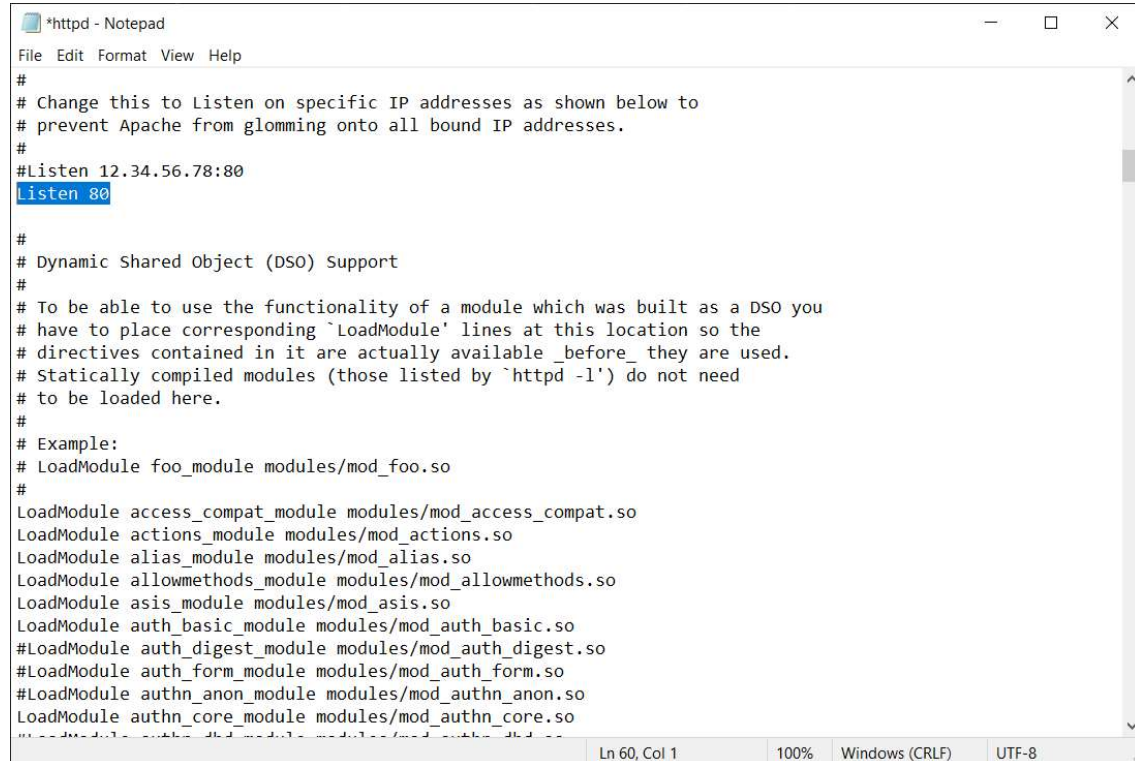


## c) Changing port number in the configuration file to any other valid port number. And rerun the server locally using newly assigned port number.

->

### In httpd.conf file,

### Exiting Port Number : 80 & ServerName : localhost : 80



```
*httpd - Notepad
```

File Edit Format View Help

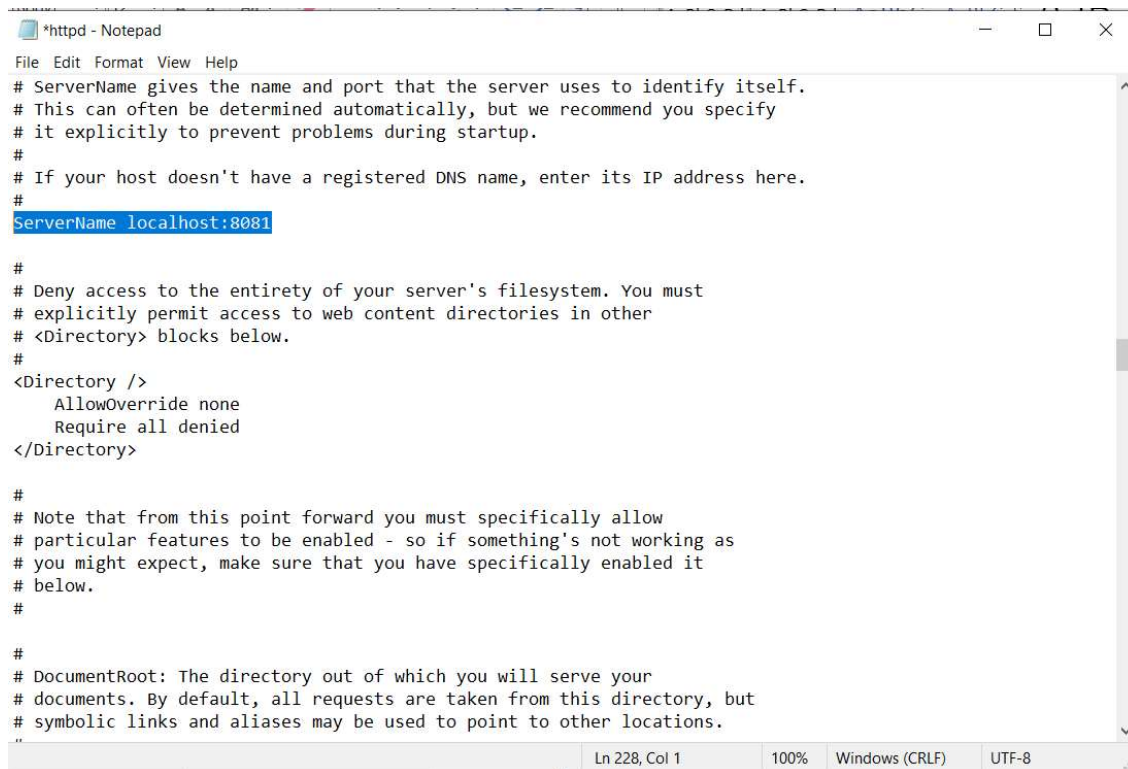
```
# ServerName gives the name and port that the server uses to identify itself.  
# This can often be determined automatically, but we recommend you specify  
# it explicitly to prevent problems during startup.  
#  
# If your host doesn't have a registered DNS name, enter its IP address here.  
#  
ServerName localhost:80  
  
#  
# DocumentRoot is the directory out of which you will serve your  
# documents. By default, all requests are taken from this directory, but  
# symbolic links and aliases may be used to point to other locations.
```

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**Modified Port Number : 8081 & ServerName : localhost:8081**

```
*httpd - Notepad
File Edit Format View Help
#
# Change this to Listen on specific IP addresses as shown below to
# prevent Apache from glomming onto all bound IP addresses.
#
#Listen 12.34.56.78:80
Listen 8081
#
# Dynamic Shared Object (DSO) Support
#
# To be able to use the functionality of a module which was built as a DSO you
# have to place corresponding 'LoadModule' lines at this location so the
# directives contained in it are actually available _before_ they are used.
# Statically compiled modules (those listed by `httpd -l`) do not need
# to be loaded here.
#
# Example:
# LoadModule foo_module modules/mod_foo.so
#
LoadModule access_compat_module modules/mod_access_compat.so
LoadModule actions_module modules/mod_actions.so
LoadModule alias_module modules/mod_alias.so
LoadModule allowmethods_module modules/mod_allowmethods.so
LoadModule asis_module modules/mod_asis.so
LoadModule auth_basic_module modules/mod_auth_basic.so
#LoadModule auth_digest_module modules/mod_auth_digest.so
#LoadModule auth_form_module modules/mod_auth_form.so
#LoadModule authn_anon_module modules/mod_authn_anon.so
LoadModule authn_core_module modules/mod_authn_core.so
#LoadModule authn_dbm_module modules/mod_authn_dbm.so
Ln 60, Col 1    100% Windows (CR LF) UTF-8
```

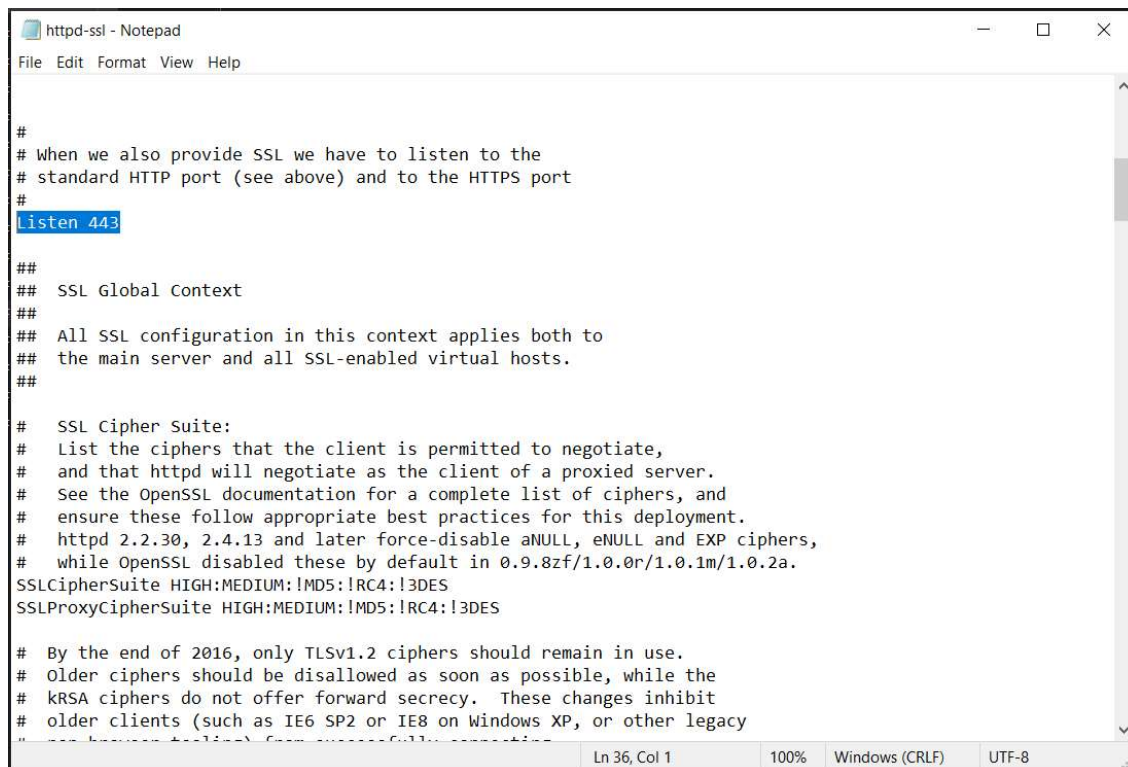




```
*httpd - Notepad
File Edit Format View Help
# ServerName gives the name and port that the server uses to identify itself.
# This can often be determined automatically, but we recommend you specify
# it explicitly to prevent problems during startup.
#
# If your host doesn't have a registered DNS name, enter its IP address here.
#
Listen localhost:8081
#
# Deny access to the entirety of your server's filesystem. You must
# explicitly permit access to web content directories in other
# <Directory> blocks below.
#
<Directory />
    AllowOverride none
    Require all denied
</Directory>
#
# Note that from this point forward you must specifically allow
# particular features to be enabled - so if something's not working as
# you might expect, make sure that you have specifically enabled it
# below.
#
#
# DocumentRoot: The directory out of which you will serve your
# documents. By default, all requests are taken from this directory, but
# symbolic links and aliases may be used to point to other locations.
"
```

### In httpd-ssl file,

**Existing Port Number : 443 & ServerName : www.example.com:443**



```
httpd-ssl - Notepad
File Edit Format View Help
#
# When we also provide SSL we have to listen to the
# standard HTTP port (see above) and to the HTTPS port
#
Listen 443
##
##  SSL Global Context
##
##  All SSL configuration in this context applies both to
##  the main server and all SSL-enabled virtual hosts.
##
#
#  SSL Cipher Suite:
#  List the ciphers that the client is permitted to negotiate,
#  and that httpd will negotiate as the client of a proxied server.
#  See the OpenSSL documentation for a complete list of ciphers, and
#  ensure these follow appropriate best practices for this deployment.
#  httpd 2.2.30, 2.4.13 and later force-disable aNULL, eNULL and EXP ciphers,
#  while OpenSSL disabled these by default in 0.9.8zf/1.0.0r/1.0.1m/1.0.2a.
SSLCipherSuite HIGH:MEDIUM:!MD5:!RC4:!3DES
SSLProxyCipherSuite HIGH:MEDIUM:!MD5:!RC4:!3DES
#
#  By the end of 2016, only TLSv1.2 ciphers should remain in use.
#  Older ciphers should be disallowed as soon as possible, while the
#  kRSA ciphers do not offer forward secrecy. These changes inhibit
#  older clients (such as IE6 SP2 or IE8 on Windows XP, or other legacy
#  web browser versions) from successfully negotiating
"
```

```
*httpd-ssl - Notepad
File Edit Format View Help

# Seconds before valid OCSP responses are expired from the cache
#SSLStaplingStandardCacheTimeout 3600

# Seconds before invalid OCSP responses are expired from the cache
#SSLStaplingErrorCacheTimeout 600

##
## SSL Virtual Host Context
##

<VirtualHost _default_:443>

# General setup for the virtual host
DocumentRoot "C:/xampp/htdocs"
ServerName www.example.com:443
ServerAdmin admin@example.com
ErrorLog "C:/xampp/apache/logs/error.log"
TransferLog "C:/xampp/apache/logs/access.log"

# SSL Engine Switch:
# Enable/Disable SSL for this virtual host.
SSLEngine on

# Server Certificate:
# Point SSLCertificateFile "conf/ssl.crt/server.crt"
# the certificate is encrypted, then you will be prompted for a
# pass phrase. Note that a kill -HUP will prompt again. Keep
# in mind that if you have both an RSA and a DSA certificate you
# may configure both in parallel (this also allows the use of RSA
# keys with the new DH param generation algorithm)
#SSLCertificateKeyFile conf/ssl.key/server.key
#SSLCertificateChainFile conf/ssl.crt/ca-bundle.crt

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```

## Modified Port Number : 8090 & ServerName : www.example.com:8090

```
*httpd-ssl - Notepad
File Edit Format View Help

#
# When we also provide SSL we have to listen to the
# standard HTTP port (see above) and to the HTTPS port
#
Listen 8090

##
## SSL Global Context
##
## All SSL configuration in this context applies both to
## the main server and all SSL-enabled virtual hosts.
##

# SSL Cipher Suite:
# List the ciphers that the client is permitted to negotiate,
# and that httpd will negotiate as the client of a proxied server.
# See the OpenSSL documentation for a complete list of ciphers, and
# ensure these follow appropriate best practices for this deployment.
# httpd 2.2.30, 2.4.13 and later force-disable aNULL, eNULL and EXP ciphers,
# while OpenSSL disabled these by default in 0.9.8zf/1.0.0r/1.0.1m/1.0.2a.
SSLCipherSuite HIGH:MEDIUM:!MD5:!RC4:!3DES
SSLProxyCipherSuite HIGH:MEDIUM:!MD5:!RC4:!3DES

# By the end of 2016, only TLSv1.2 ciphers should remain in use.
# Older ciphers should be disallowed as soon as possible, while the
# kRSA ciphers do not offer forward secrecy. These changes inhibit
# older clients (such as IE6 SP2 or IE8 on Windows XP, or other legacy
# browsers) from successfully negotiating a secure connection.
#SSLProtocol -all +TLSv1.2
```



```
*httpd-ssl - Notepad
File Edit Format View Help

# Seconds before valid OCSP responses are expired from the cache
#SSLStaplingStandardCacheTimeout 3600

# Seconds before invalid OCSP responses are expired from the cache
#SSLStaplingErrorCacheTimeout 600

##
## SSL Virtual Host Context
##

<VirtualHost _default_:443>

# General setup for the virtual host
DocumentRoot "C:/xampp/htdocs"
ServerName www.example.com:8090
ServerAdmin admin@example.com
ErrorLog "C:/xampp/apache/logs/error.log"
TransferLog "C:/xampp/apache/logs/access.log"

# SSL Engine Switch:
# Enable/Disable SSL for this virtual host.
SSLEngine on

# Server Certificate:
# Point SSLCertificateFile "conf/ssl.crt/server.crt"
# the certificate is encrypted, then you will be prompted for a
# pass phrase. Note that a kill -HUP will prompt again. Keep
# in mind that if you have both an RSA and a DSA certificate you
# can use both in parallel (to also allow the use of RSA
# or DSA for different purposes)

Ln 125, Col 1 100% Windows (CRLF) UTF-8
```

## Also changing default port to 8090,

```
*httpd-ssl - Notepad
File Edit Format View Help

# Seconds before valid OCSP responses are expired from the cache
#SSLStaplingStandardCacheTimeout 3600

# Seconds before invalid OCSP responses are expired from the cache
#SSLStaplingErrorCacheTimeout 600

##
## SSL Virtual Host Context
##

<VirtualHost _default_:443>

# General setup for the virtual host
DocumentRoot "C:/xampp/htdocs"
ServerName www.example.com:8090
ServerAdmin admin@example.com
ErrorLog "C:/xampp/apache/logs/error.log"
TransferLog "C:/xampp/apache/logs/access.log"

# SSL Engine Switch:
# Enable/Disable SSL for this virtual host.
SSLEngine on

# Server Certificate:
# Point SSLCertificateFile "conf/ssl.crt/server.crt"
# the certificate is encrypted, then you will be prompted for a
# pass phrase. Note that a kill -HUP will prompt again. Keep
# in mind that if you have both an RSA and a DSA certificate you
# can use both in parallel (to also allow the use of RSA
# or DSA for different purposes)

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```

```
httpd-ssl - Notepad
File Edit Format View Help

# Seconds before valid OCSP responses are expired from the cache
#SSLStaplingStandardCacheTimeout 3600

# Seconds before invalid OCSP responses are expired from the cache
#SSLStaplingErrorCacheTimeout 600

##
## SSL Virtual Host Context
##

<VirtualHost _default_:8090>

# General setup for the virtual host
DocumentRoot "C:/xampp/htdocs"
ServerName www.example.com:8090
ServerAdmin admin@example.com
ErrorLog "C:/xampp/apache/logs/error.log"
TransferLog "C:/xampp/apache/logs/access.log"

# SSL Engine Switch:
# Enable/Disable SSL for this virtual host.
SSLEngine on

# Server Certificate:
# Point SSLCertificateFile "conf/ssl.crt/server.crt"
# the certificate is encrypted, then you will be prompted for a
# pass phrase. Note that a kill -HUP will prompt again. Keep
# in mind that if you have both an RSA and a DSA certificate you
# may need to provide both in a single file using the following syntax
# SSLCertificateFile conf/ssl.crt:conf/ssl.key:conf/ssl.crt:conf/ssl.key

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```

In httpd-vhosts file,

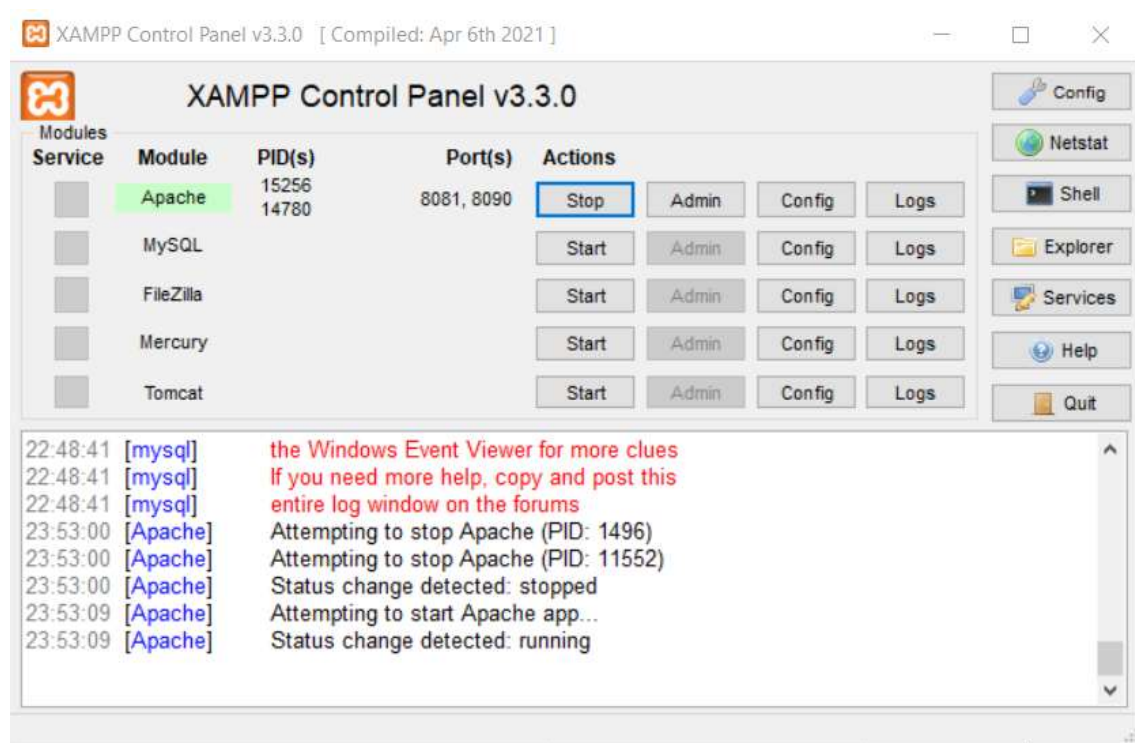
```
*httpd-vhosts - Notepad
File Edit Format View Help

# Use name-based virtual hosting.
#
##NameVirtualHost *:80
#
# VirtualHost example:
# Almost any Apache directive may go into a VirtualHost container.
# The first VirtualHost section is used for all requests that do not
# match a ##ServerName or ##ServerAlias in any <VirtualHost> block.
#
##<VirtualHost *:8081>
##ServerAdmin webmaster@dummy-host.example.com
##DocumentRoot "C:/xampp/htdocs/dummy-host.example.com"
##ServerName dummy-host.example.com
##ServerAlias www.dummy-host.example.com
##ErrorLog "logs/dummy-host.example.com-error.log"
##CustomLog "logs/dummy-host.example.com-access.log" common
##</VirtualHost>

##<VirtualHost *:8090>
##ServerAdmin webmaster@dummy-host2.example.com
##DocumentRoot "C:/xampp/htdocs/dummy-host2.example.com"
##ServerName dummy-host2.example.com
##ErrorLog "logs/dummy-host2.example.com-error.log"
##CustomLog "logs/dummy-host2.example.com-access.log" common
##</VirtualHost>

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```

Port number changed,



Sample PHP program,

```
C:\xampp\htdocs\PHP\Hello.php - Sublime Text (UNREGISTERED)
File Edit Selection Find View Goto Tools Project Preferences Help
StudentManage.java x Hello.php x
1 <html>
2 <body>
3 <?php
4 echo "Hello World";
5 ?>
6 </body>
7 </html>
```

Now, server is running locally on port number 8081 instead of 80.

