



# Pemrograman Web

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## Modul ke-1

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M. Udin Harun Al Rasyid, S.Kom, Ph.D

<http://udinharun.lecturer.pens.ac.id/>

[udinharun@pens.ac.id](mailto:udinharun@pens.ac.id)

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# Outline

- Konsep Client-Server
- Arsitektur Client Server
- Instalasi Web Server

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# Tujuan

- Memahami konsep client server.
- Memahami arsitektur client server.
- Dapat melakukan instalasi web server.

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# Client Server Concept

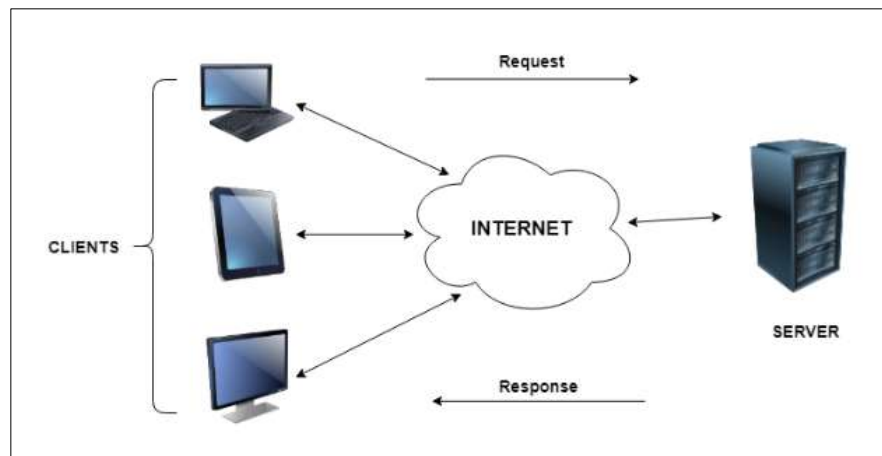
- The client-server model is a **distributed communication framework** of network processes among **service requestors, clients** and **service providers**.
- The **client-server connection** is established through a **network** or the **Internet**.
- The client-server model is a **core network computing** concept also building functionality for **email exchange** and **Web/database access**.



<https://creativemarket.com/SergeyVasutin/2855977-Client-Server-Model-Concept>

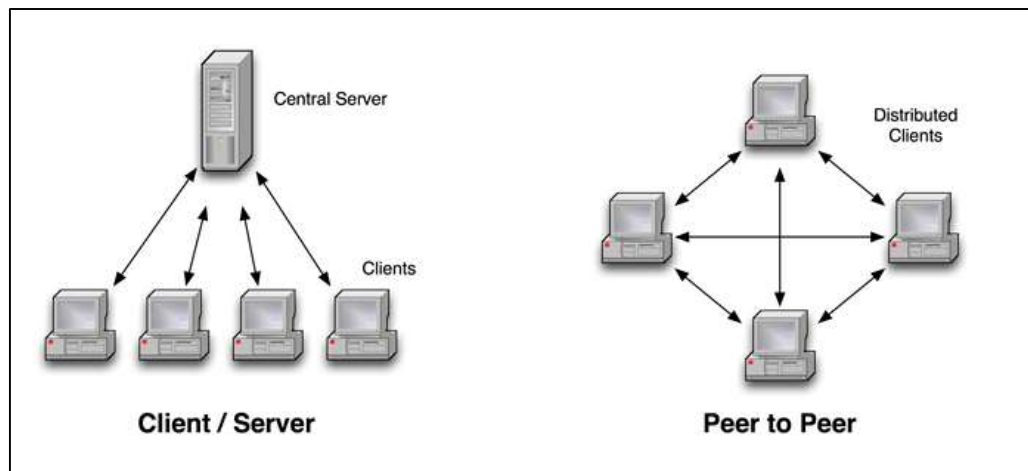
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- **Web technologies** and **protocols** built around the client-server model are:
    - Hypertext Transfer Protocol (HTTP)
    - Domain Name System (DNS)
    - Simple Mail Transfer Protocol (SMTP)
    - Telnet
  
  - **Clients include** Web browsers, chat applications, and email software, among others. Servers include Web, database, application, chat and email, etc.

- A **server** manages most processes and stores all data.
- A **client** requests specified data or processes.
- The **server** relays process output to the client.
- **Clients** sometimes handle processing, but require server data resources for completion.



<https://www.tutorialspoint.com/Client-Server-Computing>

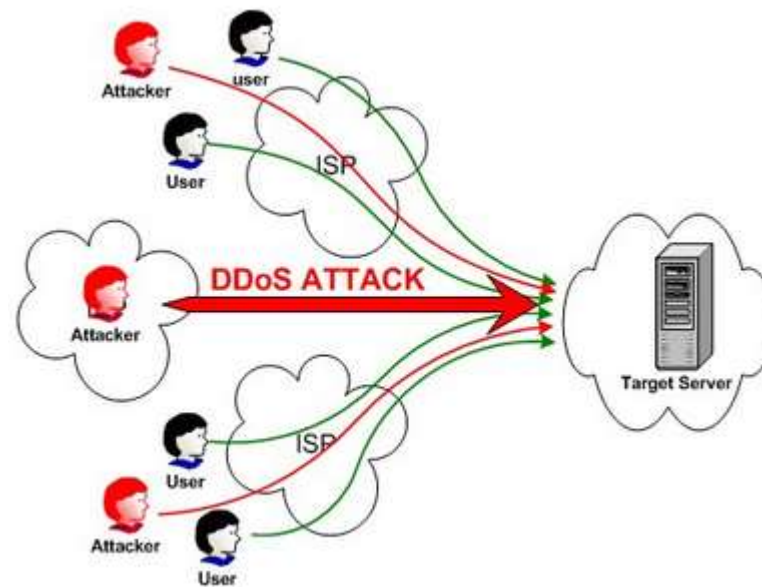
- The **client-server model** differs from a **peer-to-peer (P2P)** model where communicating systems are the client or server, each with equal status and responsibilities.
- The **P2P model** is **decentralized** networking. The **client-server model** is **centralized** networking.



<https://blog.peer5.com/the-p2p-witch-hunt/>



- One client-server model **drawback** is having too many client requests underrun a server and lead to improper functioning or total shutdown.
- Hackers often use such tactics to terminate specific organizational services through **distributed denial-of-service** (DDoS) attacks.

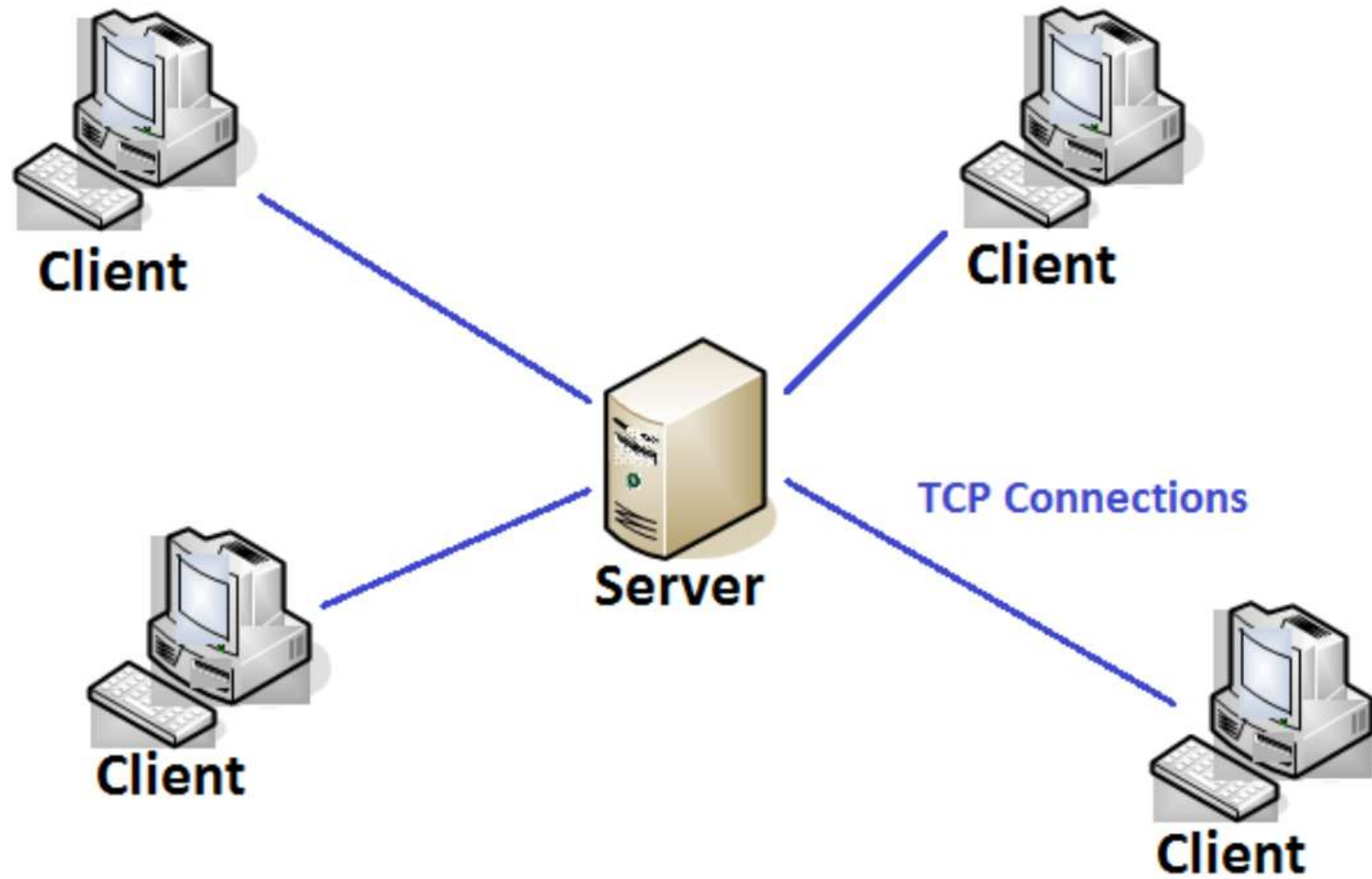


<https://idcloudhost.com/mengenal-serangan-ddos-distributed-denial-of-service-attack/>

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# Client Server Architecture

- **Client Server Architecture** is a **computing model** in which the server hosts, delivers and manages most of the resources and services to be consumed by the client.
- This type of architecture **has one or more client computers connected** to a **central server** over a network or internet connection. This system shares computing resources.
- **Client/server architecture** is also known as a **networking computing model** or **client/server network** because all the requests and services are delivered over a network



<https://practice.geeksforgeeks.org/problems/explain-client-server-architecture>

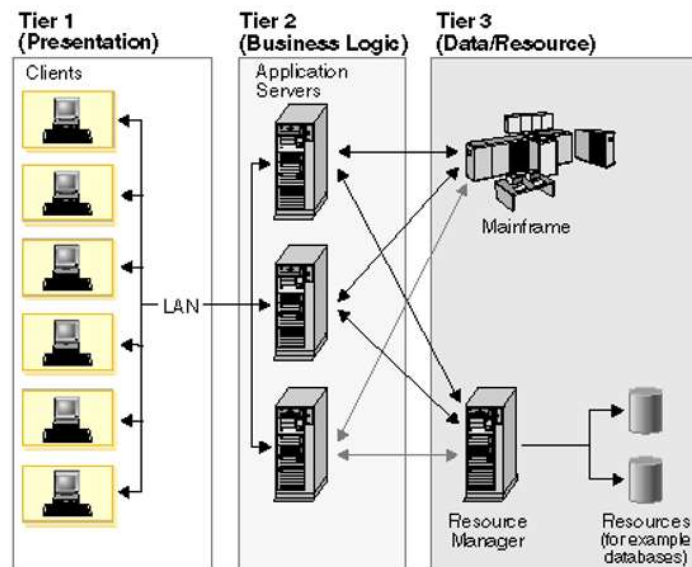
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## Characteristics of a Client-Server Architecture

- ❑ Client and server machines need different amount of **hardware and software resources**.
- ❑ Client and server machines **may belong to different vendors**.
- ❑ **Horizontal** scalability (**increase of the client machines**) and **vertical** scalability (migration to a **more powerful server** or to a multiserver solution)
- ❑ A client or server application interacts directly with a **transport layer protocol** to **establish communication** and to **send** or **receive information**.
- ❑ The transport protocol then uses **lower layer protocols** to **send or receive individual messages**. Thus, a computer needs a complete stack of protocols to run either a client or a server.
- ❑ A single server-class computer can **offer multiple services** at the same time; a separate server program is needed for each service.

## Three-tier Client Server Architecture

- The traditional client/server architecture involves **two levels**, a client level and a server level. Another common design of client/server systems uses **three tiers**:
  - A client that interacts with the user
  - An application server that contains the business logic of the application
  - A resource manager that stores data



<https://cio-wiki.org/wiki/File:ClientServerArchitecture.png>

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# Web Server Installation

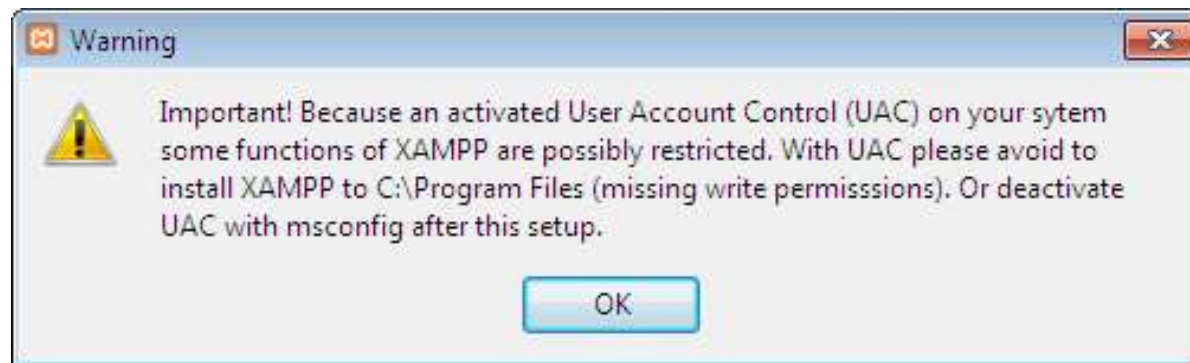
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# XAMPP

- Xampp adalah perangkat yang menggabungkan tiga aplikasi kedalam satu paket, yaitu Apache, MySQL, dan PHPMyAdmin. Dengan Xampp pekerjaan anda sangat dimudahkan karena dapat menginstalasi dan mengkonfigurasi ketiga aplikasi tersebut dengan sekaligus dan otomatis.

# Cara Instalasi XAMPP

- Jika ingin melakukan instalasi yang versi 1.8.3, dapat mengunduh instaler XAMPP versi tersebut dengan mengunjungi url download dibawah ini.  
<http://www.filehorse.com/download-xampp/16688/>  
Atau anda ingin men-download yang versi terbaru dengan mengunjungi url halaman:  
<https://www.apachefriends.org/download.html>
- Jika sudah mengunduh installer Xampp, maka klik 2x pada installer tersebut. Untuk pengguna Windows 7, Anda akan melihat jendela pop up, peringatan tentang User Account Control (UAC) yang aktif pada sistem. Klik "OK" untuk melanjutkan instalasi.





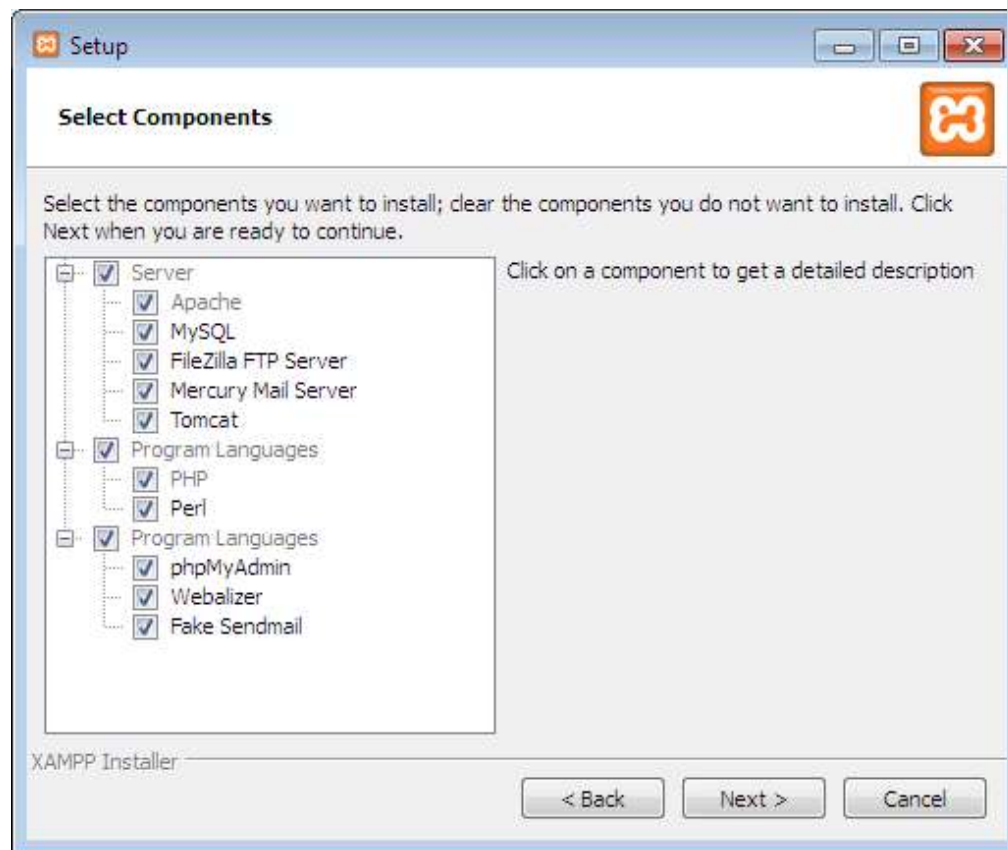
# Instalasi XAMPP

- Selanjutnya klik Next.



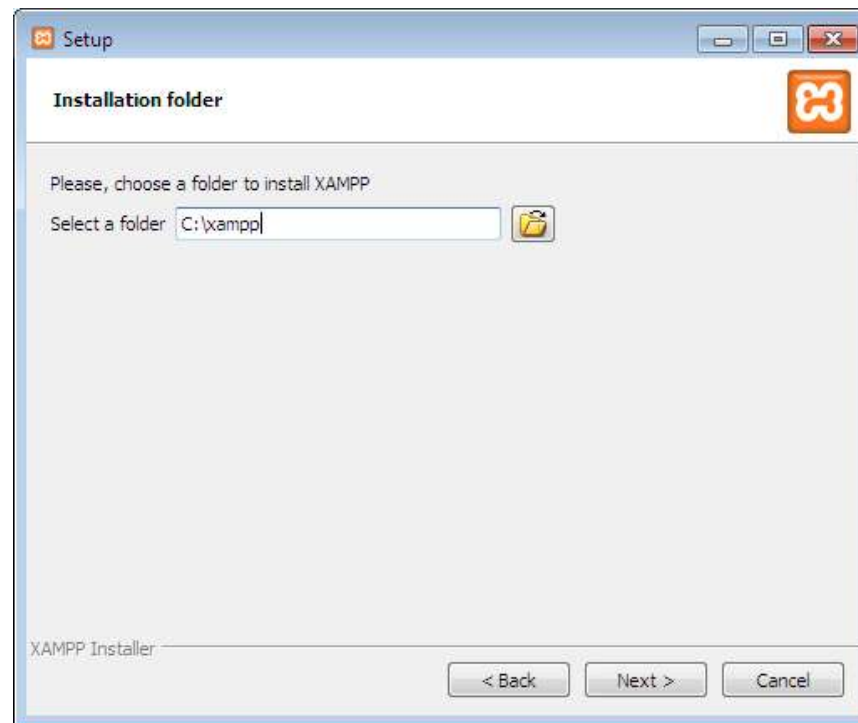
# Instalasi XAMPP

- Di sini, dapat memilih komponen yang ingin diinstal. klik Next.



# Instalasi XAMPP

- Pilih folder sebagai tempat XAMPP akan diinstal, di folder ini akan menampung semua file aplikasi web, jadi pastikan untuk memilih drive yang memiliki banyak ruang(space). Klik Next.



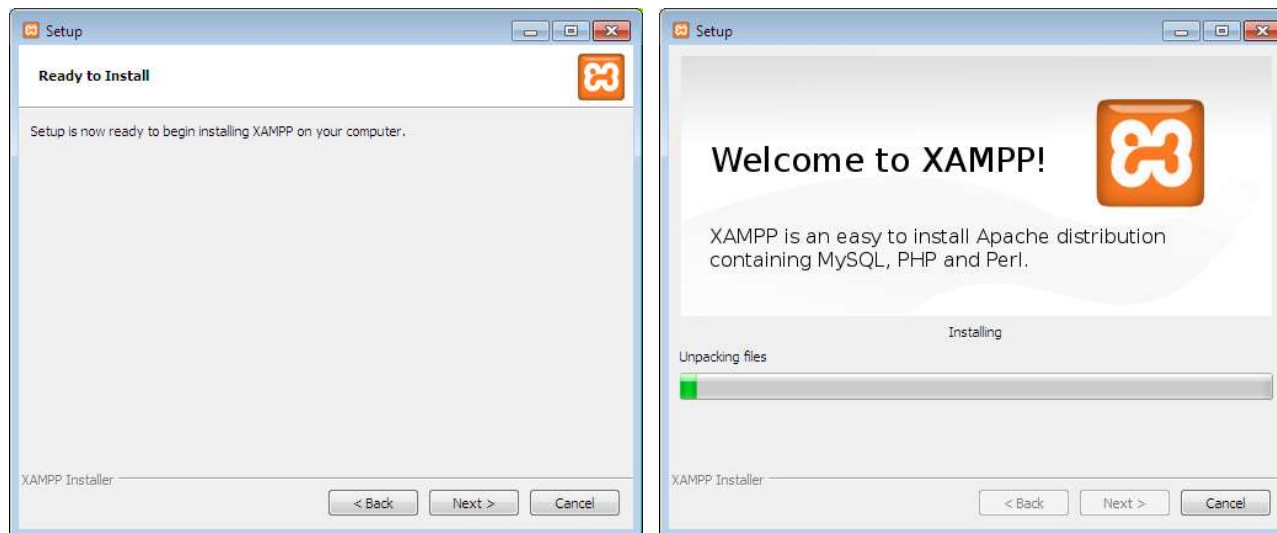
# Instalasi XAMPP

- Layar berikutnya adalah promo untuk BitNami, sebuah toko aplikasi untuk server perangkat lunak. Pada kotak centang 'Learn more about BitNami for XAMPP', bisa dicentang atau dihapus saja. Klik Next.



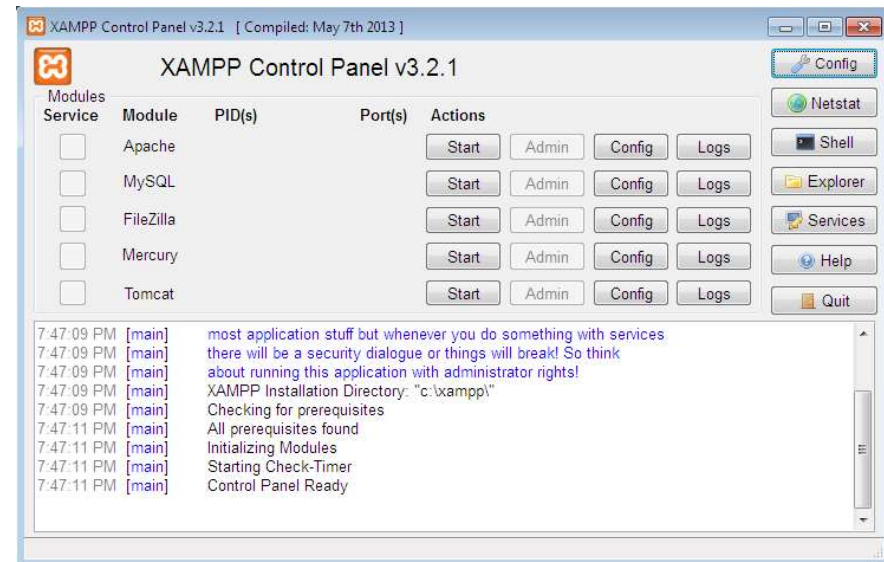
# Instalasi XAMPP

- Sekarang Setup sudah siap untuk menginstall XAMPP. Klik Next dan tunggu installer untuk membongkar paket-nya dan memasang komponen yang dipilih. Mungkin memakan waktu beberapa menit. Nanti mungkin akan diminta untuk menyetujui akses Firewall untuk komponen tertentu (seperti Apache) selama proses instalasi.



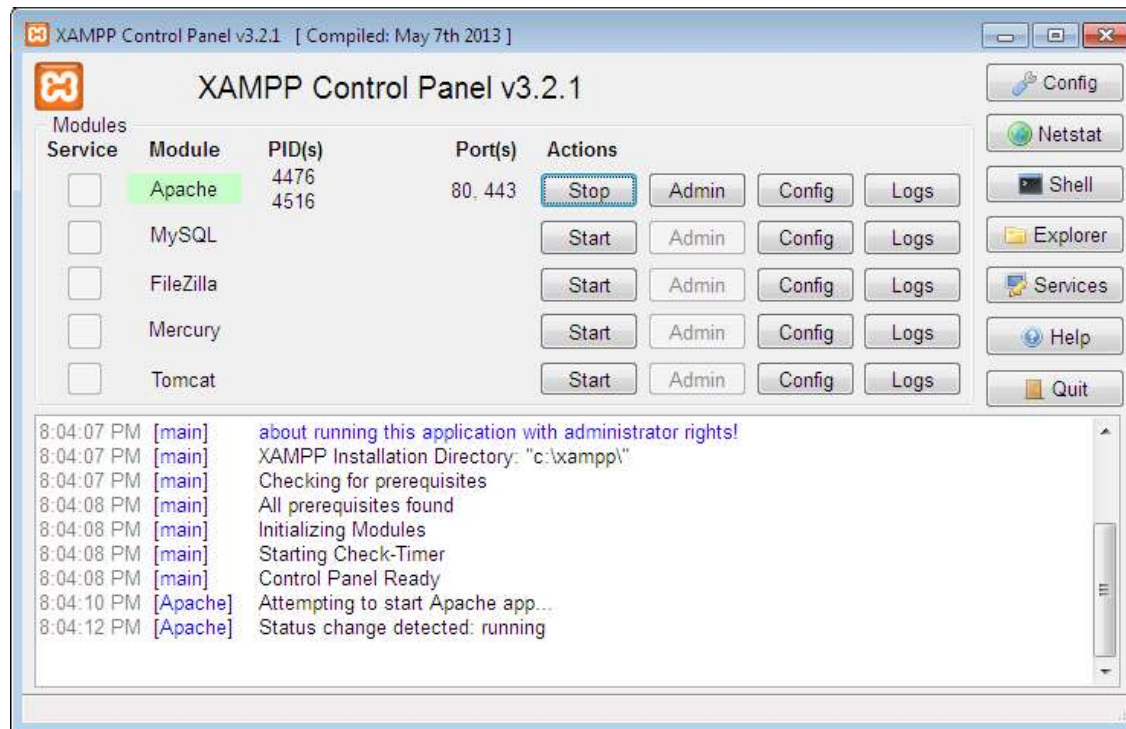
# Instalasi XAMPP

- Proses Install sudah selesai! Pilih Kotak centang 'Do you want to start the Control Panel now?' untuk membuka kontrol panel XAMPP.



# Testing Apache

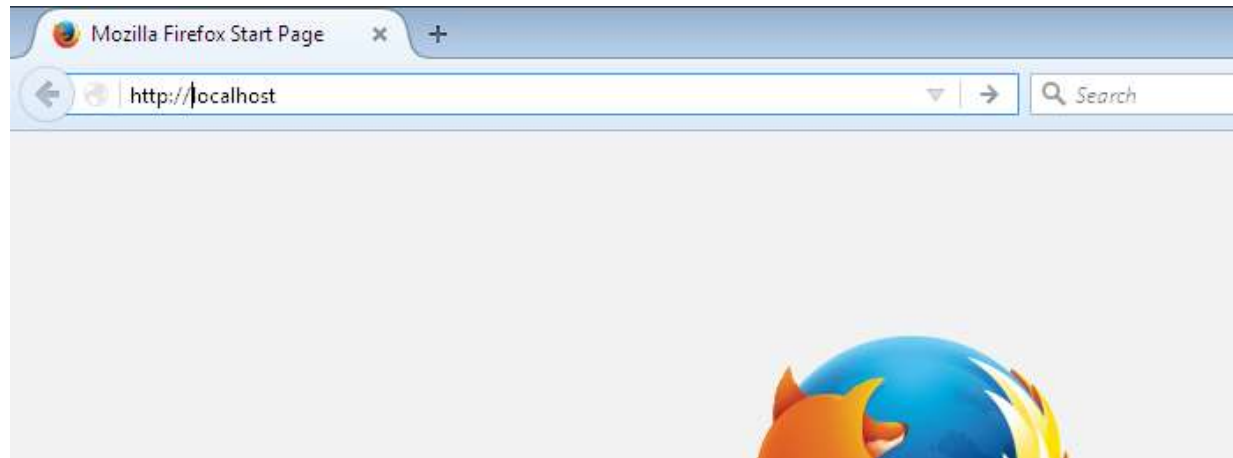
- Di control panel XAMPP, klik tombol 'Start' di bawah tulisan 'Actions' untuk modul Apache. Hal ini menginstruksikan XAMPP untuk memulai web server Apache.



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# Testing Apache

- Buka browser web dan pada address bar ketik: `http://localhost` atau `http://127.0.0.1`





# Testing Apache

- Selanjutnya akan muncul halaman seperti gambar dibawah. Pilih bahasa dari halaman tersebut.



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# Testing Apache

- Selanjutnya akan melihat layar seperti gambar dibawah. Ini berarti telah berhasil menginstall XAMPP dan web server Apache di komputer.



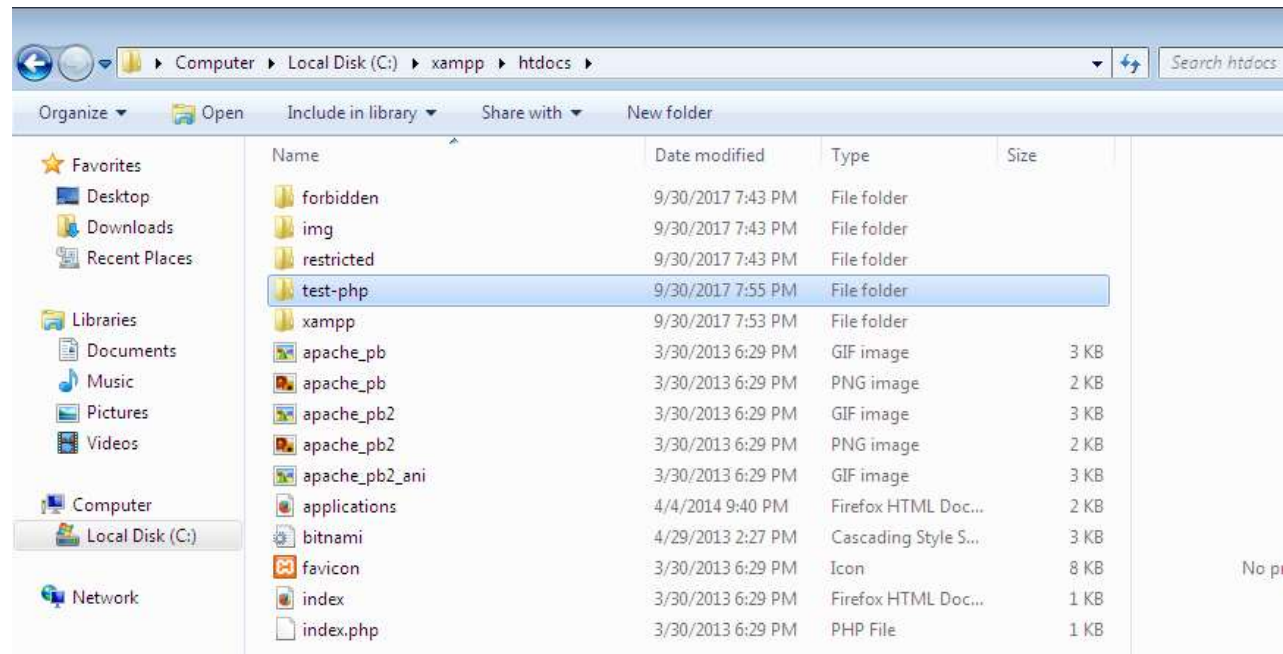
# Testing Apache

- Di control panel XAMPP, klik tombol 'Start' di bawah tulisan 'Actions' untuk modul Apache. Hal ini menginstruksikan XAMPP untuk memulai web server Apache.



# Testing Apache

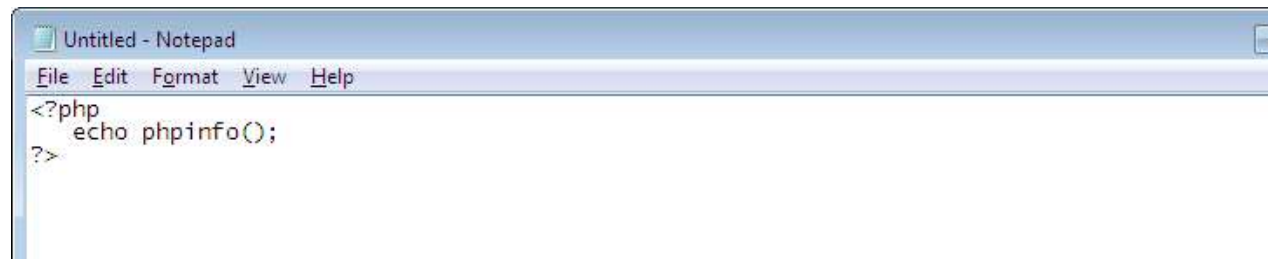
- Masuk ke dalam folder instalasi, kemudian masuk ke dalam folder htdocs (Misalnya : c:\xampp\htdocs\), lalu buat folder dan berikan nama folder tersebut. (Misalnya : test-php).



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# Testing Apache

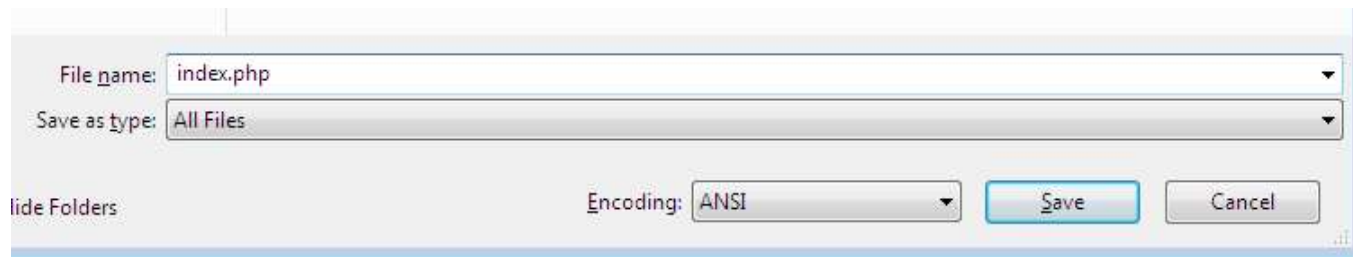
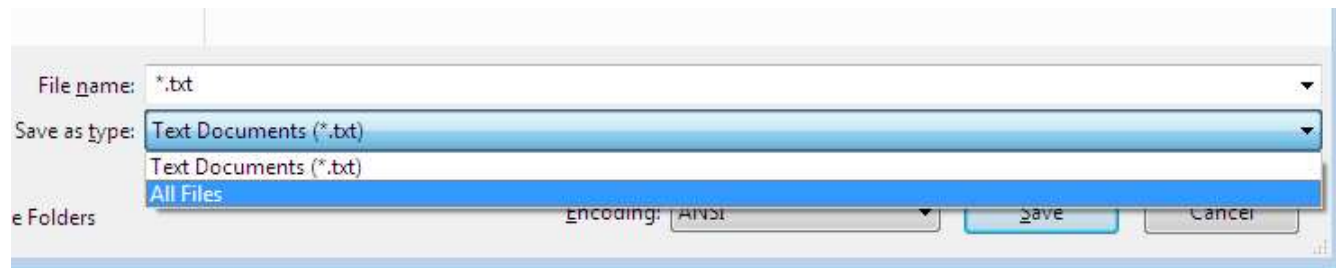
- Buka Aplikasi Notepad atau text editor lainnya seperti Notepad++, Sublime, atau Atom. Kemudian ketik seperti gambar di bawah ke dalam dokumen baru Notepad.



```
Untitled - Notepad
File Edit Format View Help
<?php
echo phpinfo();
?>
```

# Testing Apache

- Simpan dokumen baru tersebut di folder yang telah dibuat sebelumnya. (Misalnya : c:\xampp\htdocs\test-php\). Pada saat akan menyimpan file tersebut, di bagian “Save as type” pilih yang “All Files”, kemudian simpan sebagai ‘index.php’ pada bagian “File name”.



# Testing Apache

- Arahkan halaman browser ke <http://localhost/test-php/>. Jika berhasil dalam halaman browser akan menampilkan halaman seperti gambar dibawah, yaitu halaman yang berisi tentang informasi PHP yang telah diinstall.

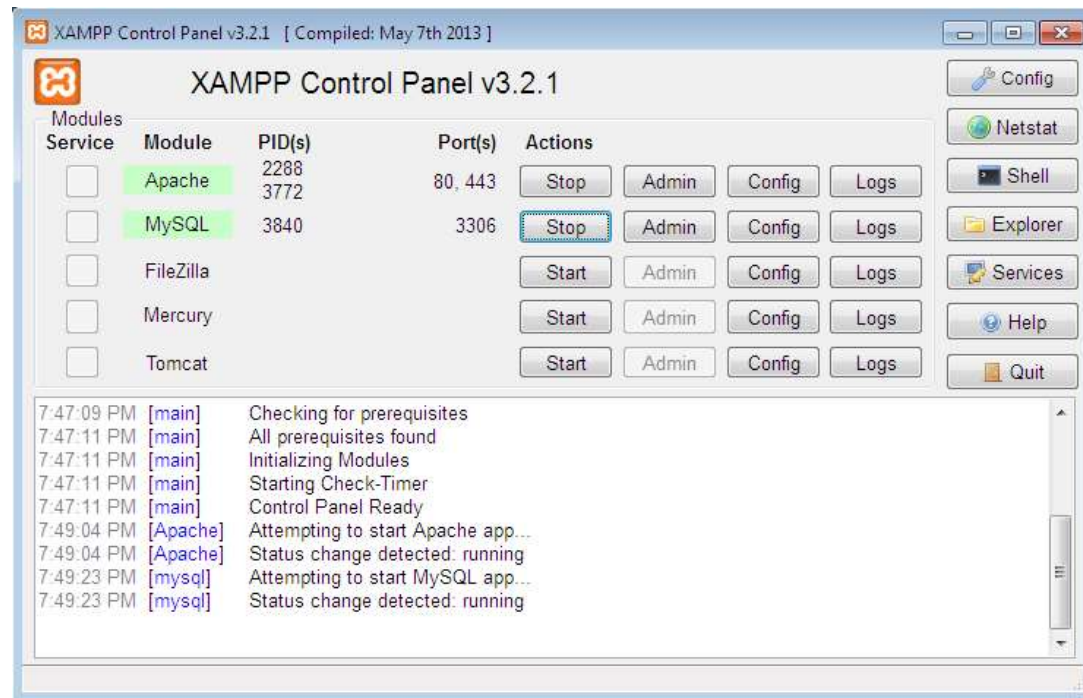


The screenshot shows a web browser window with the address bar set to [localhost/test-php/](http://localhost/test-php/). The page content displays the PHP logo and version information, followed by a table of system and configuration details.

PHP Version 5.5.11	
System	Windows NT ARCGIS-PC 6.1 build 7601 (Windows 7 Home Premium Edition Service Pack 1) i586
Build Date	Apr 8 2014 15:01:59
Compiler	MSVC11 (Visual C++ 2012)
Architecture	x86
Configure Command	cscrip /nologo configure.js "--enable-snapshot-build" "--disable-isapi" "--enable-debug-pack" "--without-mssql" "--without-pdo-mssql" "--without-pi3web" "--with-pdo-oci=C:\php-sdk\oracle\x86\instantclient10\jdk,shared" "--with-oci8=C:\php-sdk\oracle\x86\instantclient10\jdk,shared" "--with-oci8-11g=C:\php-sdk\oracle\x86\instantclient11\jdk,shared" "--enable-object-out-dir=.\obj" "--enable-com-dotnet=shared" "--with-mcrypt=static" "--disable-static-analyze" "--with-pgo"
Server API	Apache 2.0 Handler
Virtual Directory Support	enabled
Configuration File (php.ini) Path	C:\Windows
Loaded Configuration File	C:\xampp\php\php.ini
Scan this dir for additional .ini	(none)

# Testing MySQL

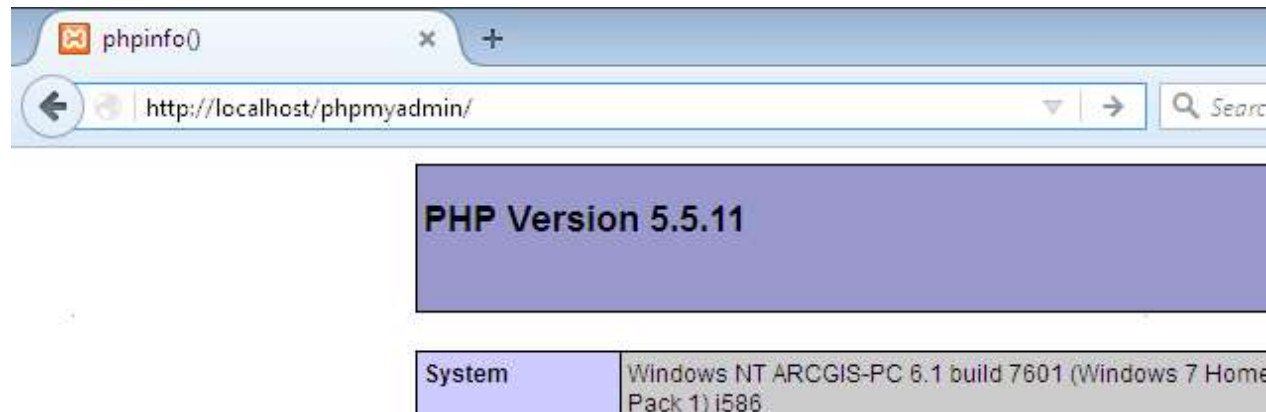
- Di control panel XAMPP, klik tombol 'Start' di bawah tulisan 'Actions' untuk modul Apache dan MySQL. Hal ini menginstruksikan XAMPP untuk memulai web server Apache dan MySQL.





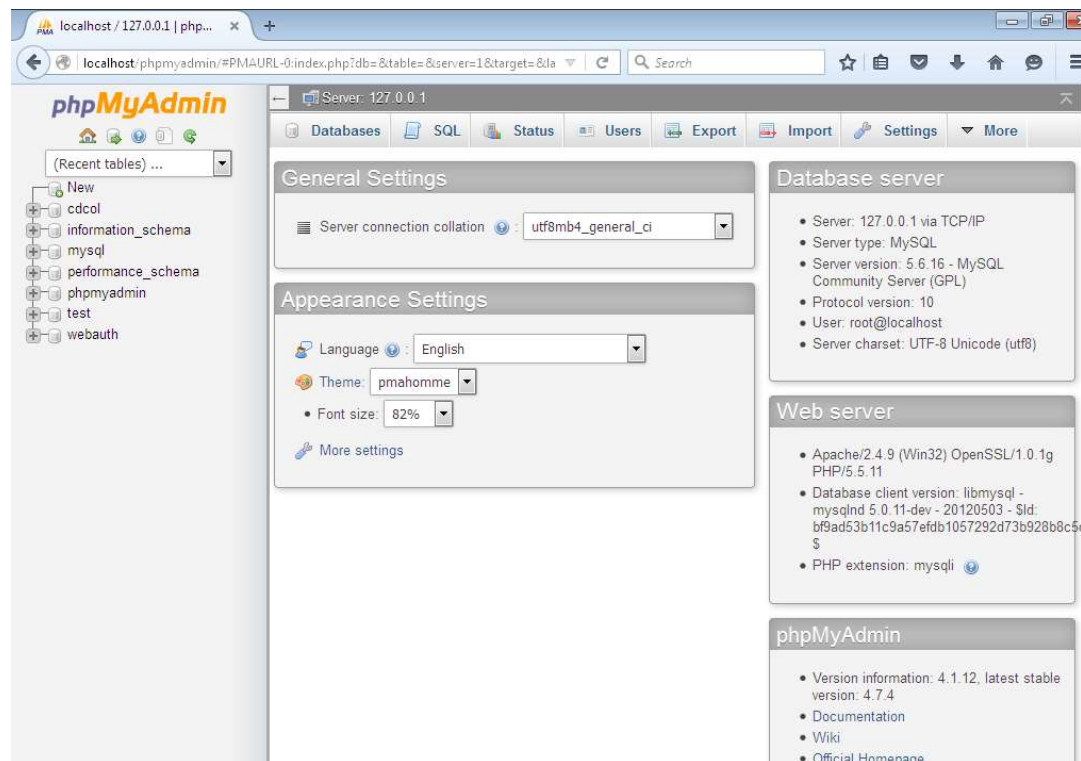
# Testing MySQL

- Arahkan halaman browser ke <http://localhost/phpmyadmin/>. Kemudian tekan Enter.



# Testing MySQL

- Jika berhasil dalam halaman browser akan menampilkan halaman seperti gambar dibawah, yaitu halaman PhpMyAdmin.



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# PhpMyAdmin

- PhpMyAdmin adalah perangkat lunak bebas yang ditulis dalam bahasa pemrograman PHP yang digunakan untuk menangani administrasi MySQL menggunakan browser. PhpMyAdmin mendukung berbagai operasi MySQL, diantaranya (mengelola basis data, tabel-tabel, bidang (fields), relasi (relations), indeks, pengguna (users), perizinan (permissions), dan lain-lain).

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# Tugas Praktikum

- Lakukan instalasi XAMPP di PC Laboratorium atau di Laptop masing-masing.
- Buat laporan file PPT: proses instalasi XAMPP secara detil dan upload file PPT di elearning.

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NEXT

## PHP Programming

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# References

- <https://www.techopedia.com/definition/18321/client-server-model>
- [https://techterms.com/definition/client-server\\_model](https://techterms.com/definition/client-server_model)
- [https://cio-wiki.org/wiki/Client\\_Server\\_Architecture](https://cio-wiki.org/wiki/Client_Server_Architecture)
- <https://bahasaweb.com/cara-install-xampp-windows/>