# Episode 16 (Overview of the Internet Shop)

Fox! What's server-side scripting?

A server is the software that provides the service. A server machine refers to the PC that provides the service, i.e., the hardware. Side, needless to say, is the "side. Scripts are program code, or programs. In summary, it is a program that runs on the server side. This program does not appear in the public eye and is executed behind the scenes, so we don't feel much appreciation for it, but it does a very important job.
In today's Internet society, without server-side scripts, all online sales and business transactions would come to a halt!

If Amazon, Rakuten, Yahoo Shopping, etc. disappear, I won't be able to buy products online, and that's a problem for me.
Kitsune, please tell us a little more about how it works.
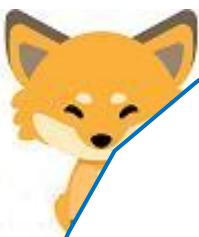
OK! Tanuki, the next time you shop online, you can learn something by looking at the last file extension displayed in the URL. For example,
[https://www.shns-m.com/abc.asp], or
[https://www.shns-m.com/abc.php], and so on,
 [https://www.shns-m.com/abc.jsp].
The vermilion extension part refers to the language used to create the server-side script.
ASP (Active Server Pages) typically uses a Windows server as the operating system and an SQL server as the database server.
PHP (HypertextPreprocessor) can be used on either Windows or Linux, and MySQL or PostgreSQL can be used as the database server. JSP (Java Server Pages) are, needless to say, Java servlets.Tomcat is required to interpret and execute servlets.

Kitsune, it's tedious to study three different kinds. Can you tell me just one of them?

Tanuki, the basic idea is the same for all three types, so you only need to study one to grasp the concept. So, I thought about which one to choose.

The cheapest rental servers support WordPress, which offers a wide variety of themes and plug-ins to easily create web applications, including sales systems. Some of them are paid, but even free ones are enough to build a good site. The server-side script used by WordPress is PHP, and the database server is MySQL. So, I'm going to cover PHP and MySQL because they are directly related to practice. A web application with a database server in the background is also called a 3-tier client-server system (hereafter referred to as 3-tier C/S).
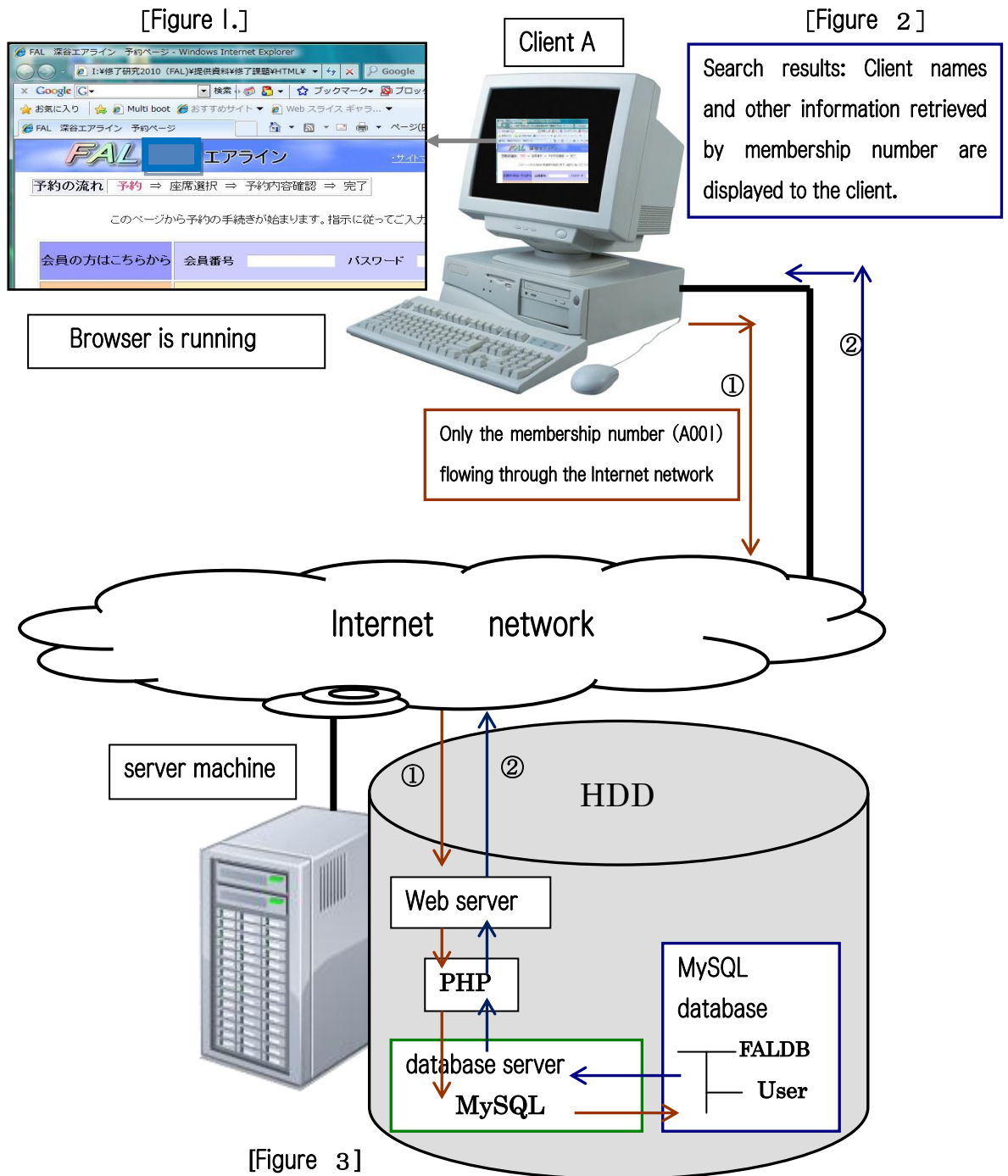
PHP and MySQL, sounds interesting.
By the way, I've never heard of a 3−tier client−server before, what is it?
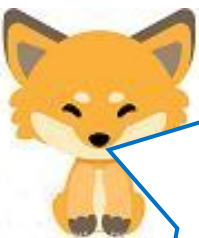
Simply put, there are three layers (parts) of programs to be executed: the first is the part of the program (HTML, etc.) that is executed on the user's terminal (browser) and is called the presentation layer; the second is the part of the web server and PHP that interprets and executes PHP scripts and is called the application layer; and the third is the database layer maintained by MySQL. The third is the database layer maintained by MySQL. The third is the database layer, maintained by MySQL, which is the most important part of the database server. This is where customer information, such as purchases, is stored. This is also the part that hackers target if security is lax. I'll illustrate below.

Diagram of a 3-tier client-server system

[Figure 1.]

[Figure 2]

Search results: Client names and other information retrieved by membership number are displayed to the client.

Client A

Browser is running

① Only the membership number (A001) flowing through the Internet network

②

Internet network

server machine

① ② HDD

Web server

PHP

database server
MySQL

MySQL database
├─ **FALDB**
└─ **User**

[Figure 3]

Tanuki, let me explain the above diagram: In the case of a 3-tier C/S, necessary data such as membership numbers are entered into an HTML file [Figure 1] that is downloaded from the Web server to the browser and sent (①). The web server receives the data coming through the Internet network and passes it to a server-side script (PHP file); the database server (MySQL) searches, adds, updates, and deletes the corresponding database according to the SQL statements in the PHP file [Figure 3], The SQL statements are issued within the server, thus reducing the traffic on the Internet network. This is a feature and advantage of 3-layer C/S.

Fox, what's an SQL statement?

SQL statement is a language for database operations. The SELECT statement is used to search for data, the INSERT statement to insert data, the UPDATE statement to update data, and the DELETE statement to delete data. It is very easy because it consists of only these four commands. You don't need any more commands to manipulate a database.

Now that you have a general idea of how an Internet store works, we will start with a simple point-of-sale system in the next installment

(Episode 17). However, I will proceed on the assumption that a DNS server, a web server, PHP (application server), and MySQL (database server) are installed on the virtual machine CentOS7, and that the four servers are well coordinated. Up to that point, Tanuki, you can try to build it on your own while browsing the Internet.

So many behind-the-scenes mechanisms are needed to run a web application? I thought that I could do everything by creating a single program. I guess not knowing is a scary thing.

Kitsune, I know it sounds like a lot of work, but give me about a month to try to build it.

Translated at DeepL