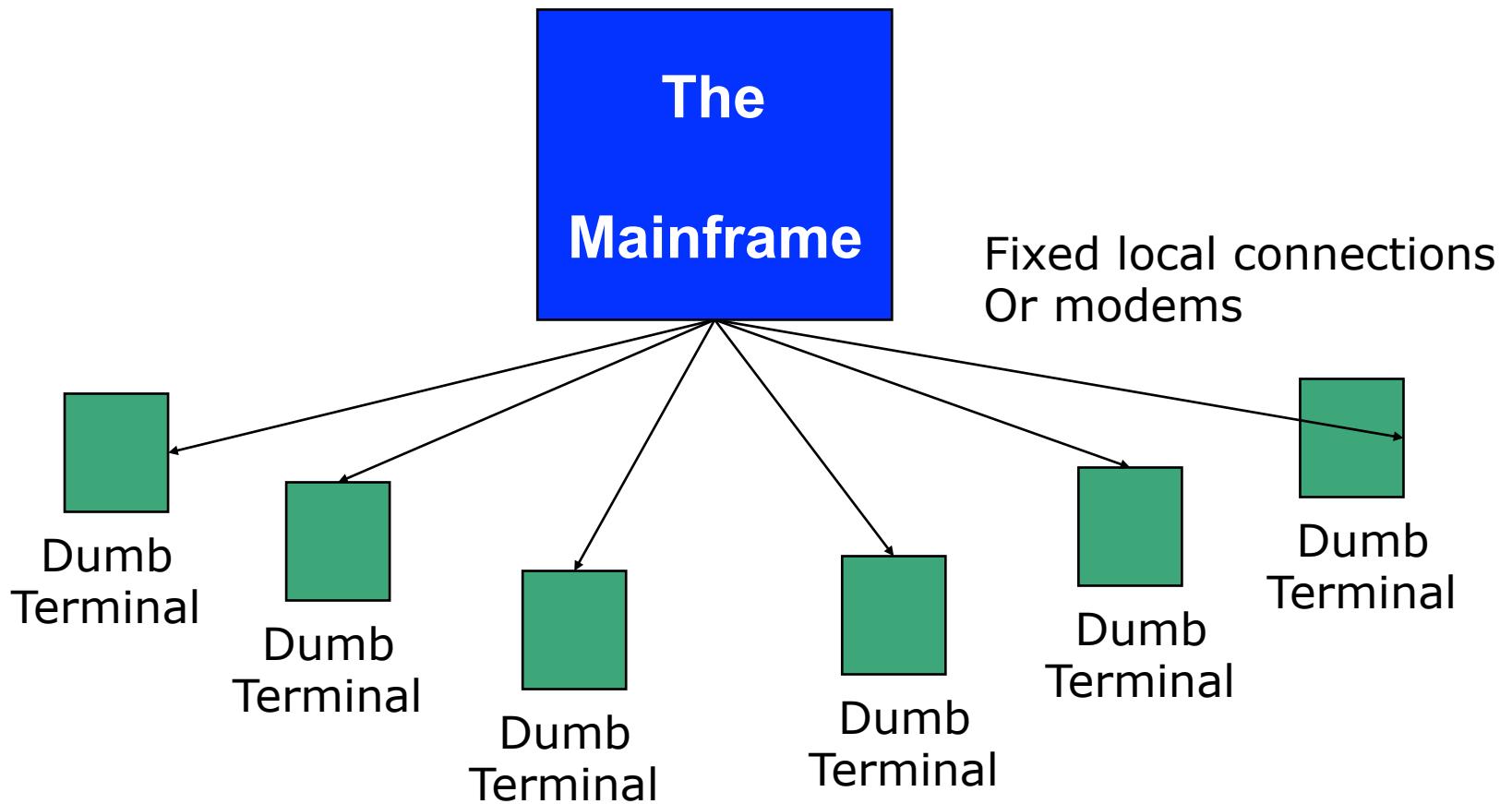




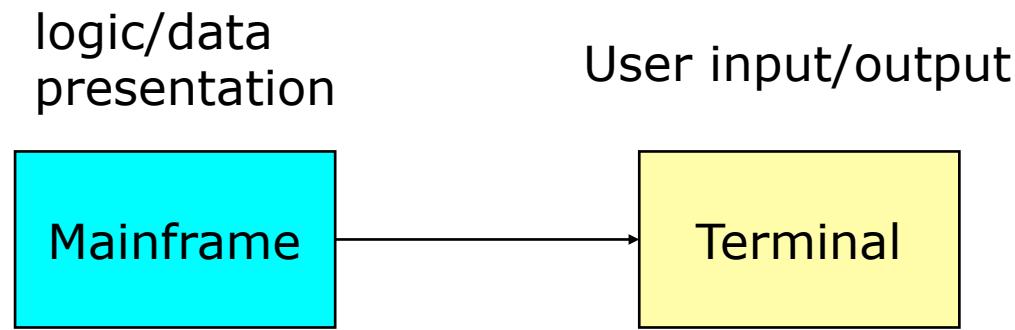
Distributed systems: an architectural view

Once upon a time...

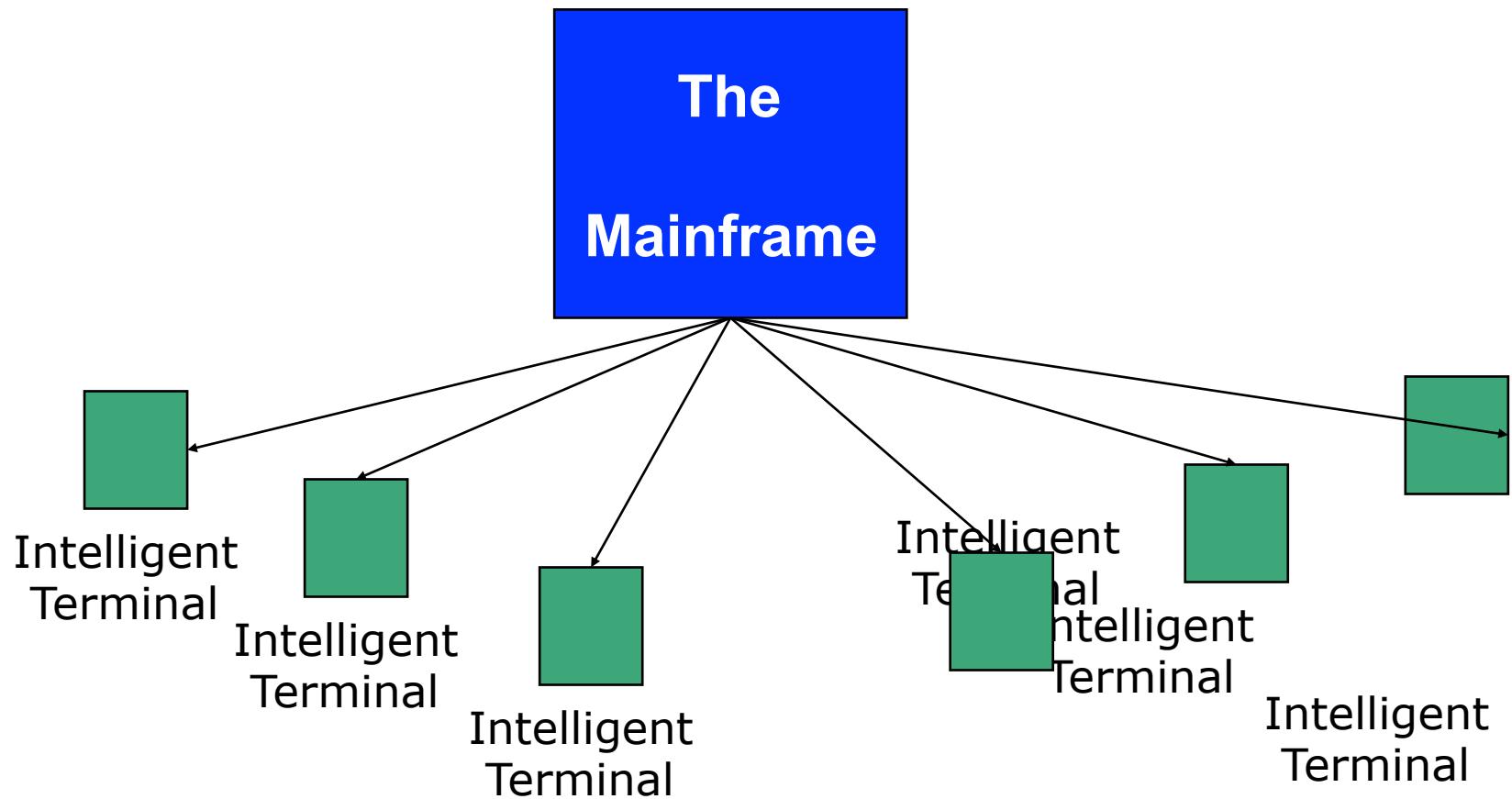


All of the work is done at the center

Mainframe

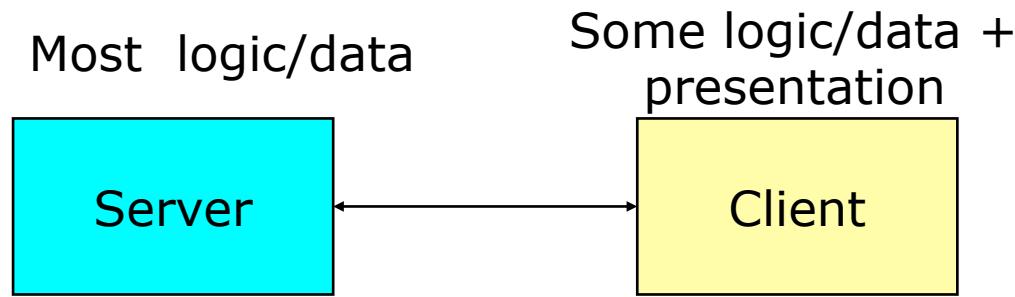


Once upon a time...



Some work is done on the periphery: the client-server paradigm

Client server



Enabled by:

- the Personal Computer / Workstation
- the Internet (TCP/IP)

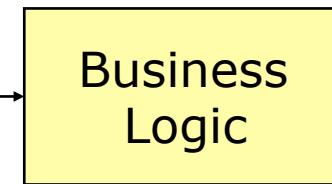
Client server - evolution

Three tier architecture

The Model

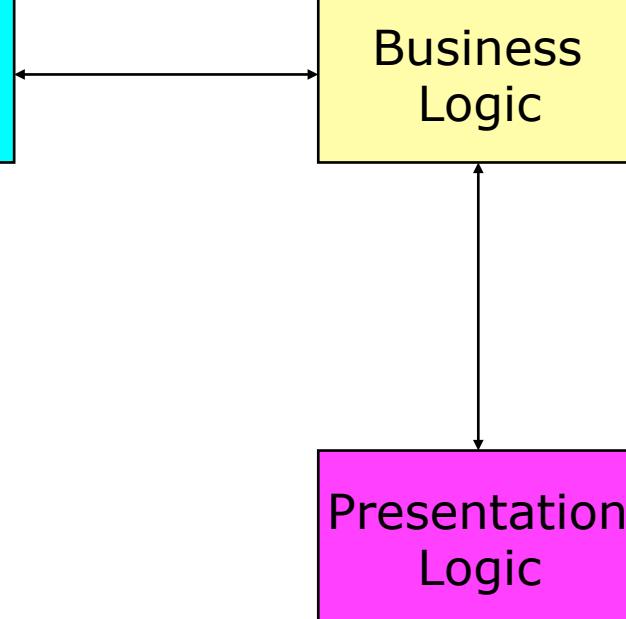


The Controller



Presentation Logic

The View

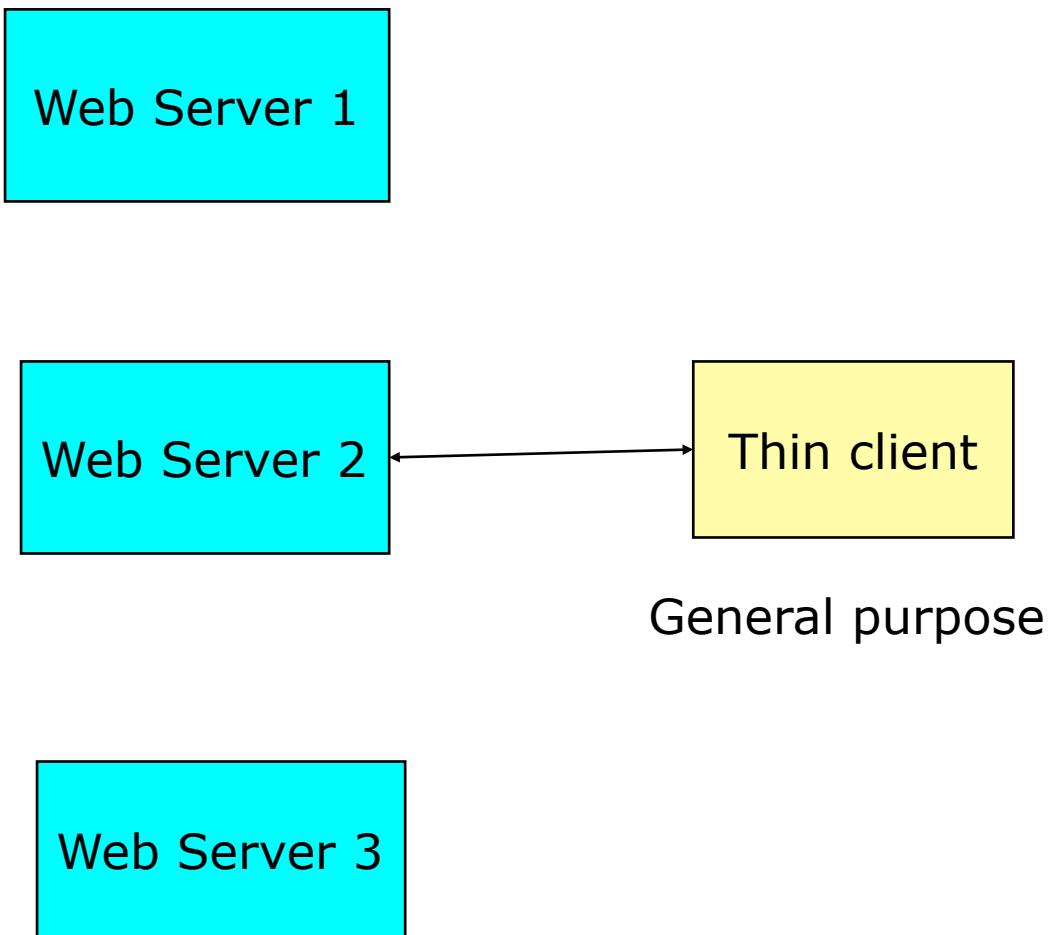


Client server - problems

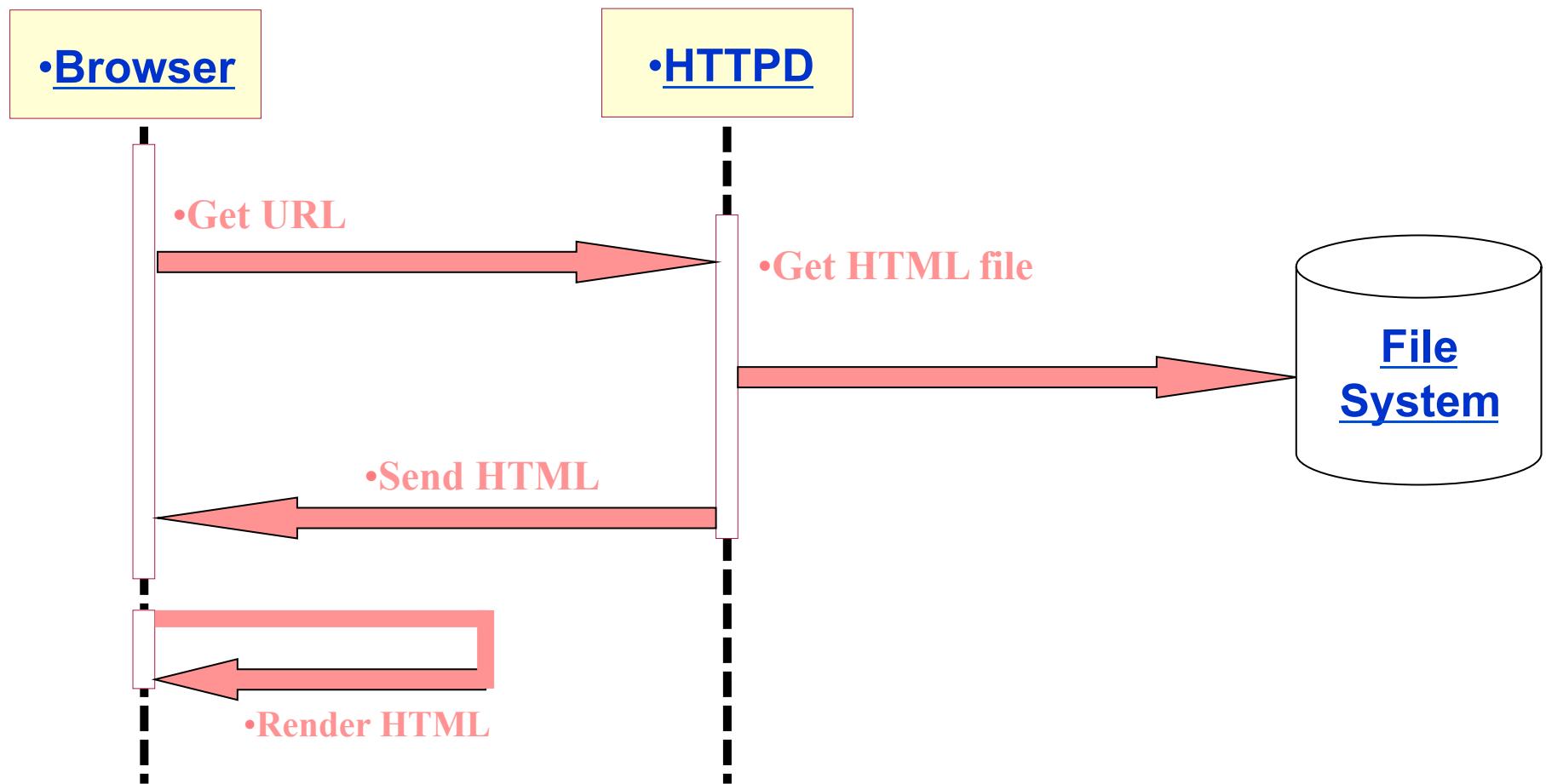
Part of the BUSINESS LOGIC is performed on the periphery:

The new version nightmare...

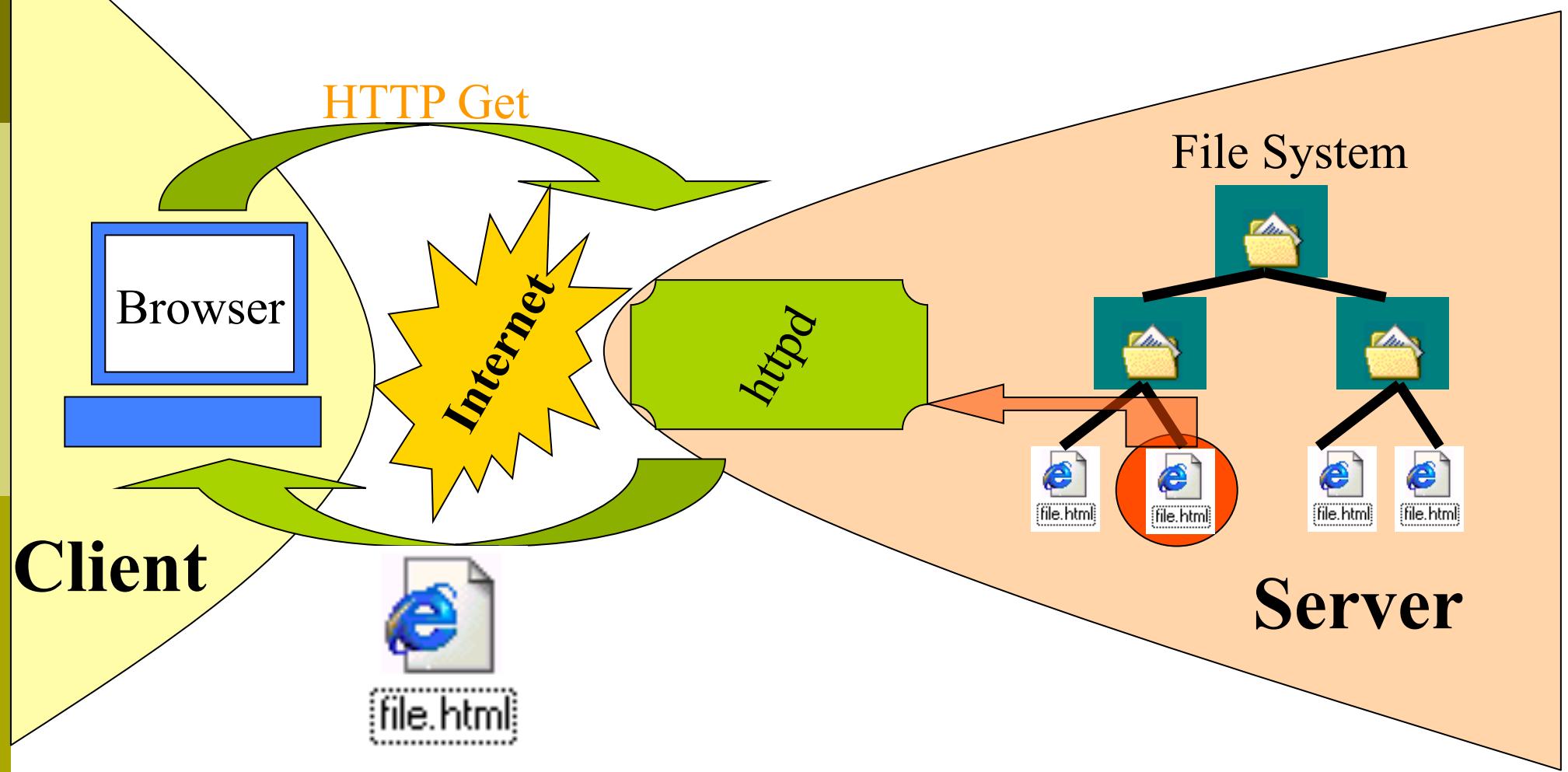
The Web – Back to the old model!



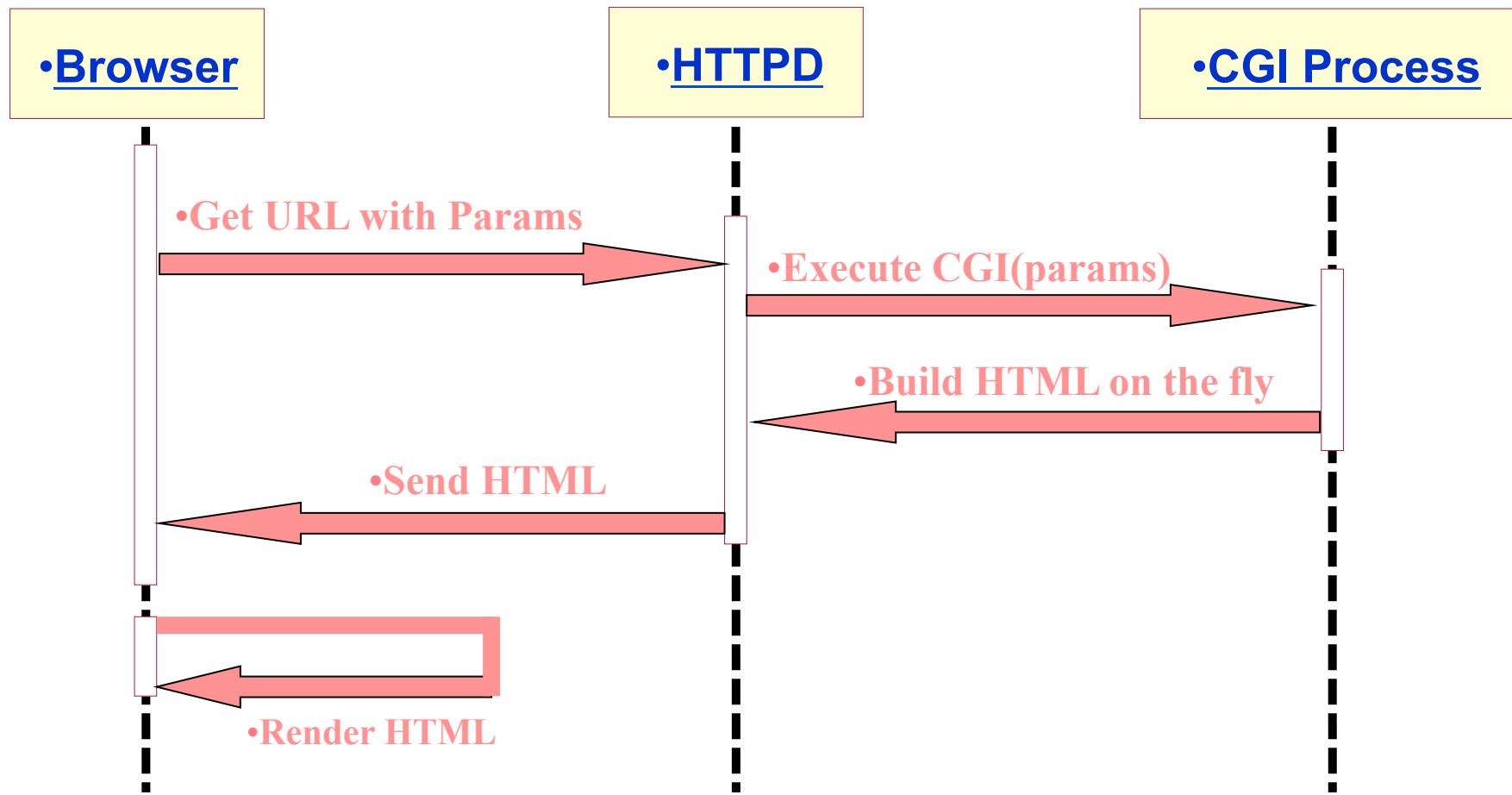
The primitive Web model



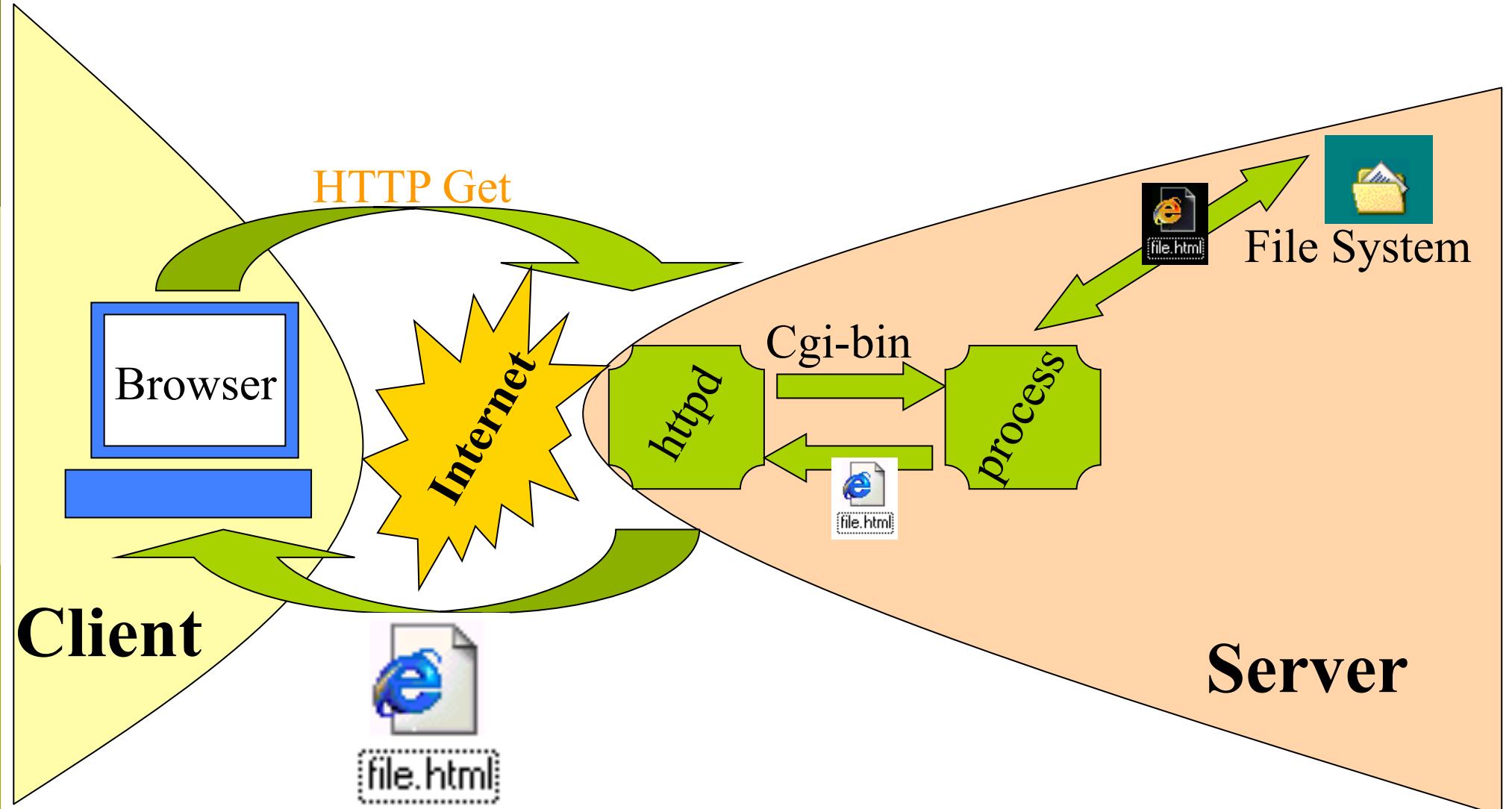
The primitive Web model



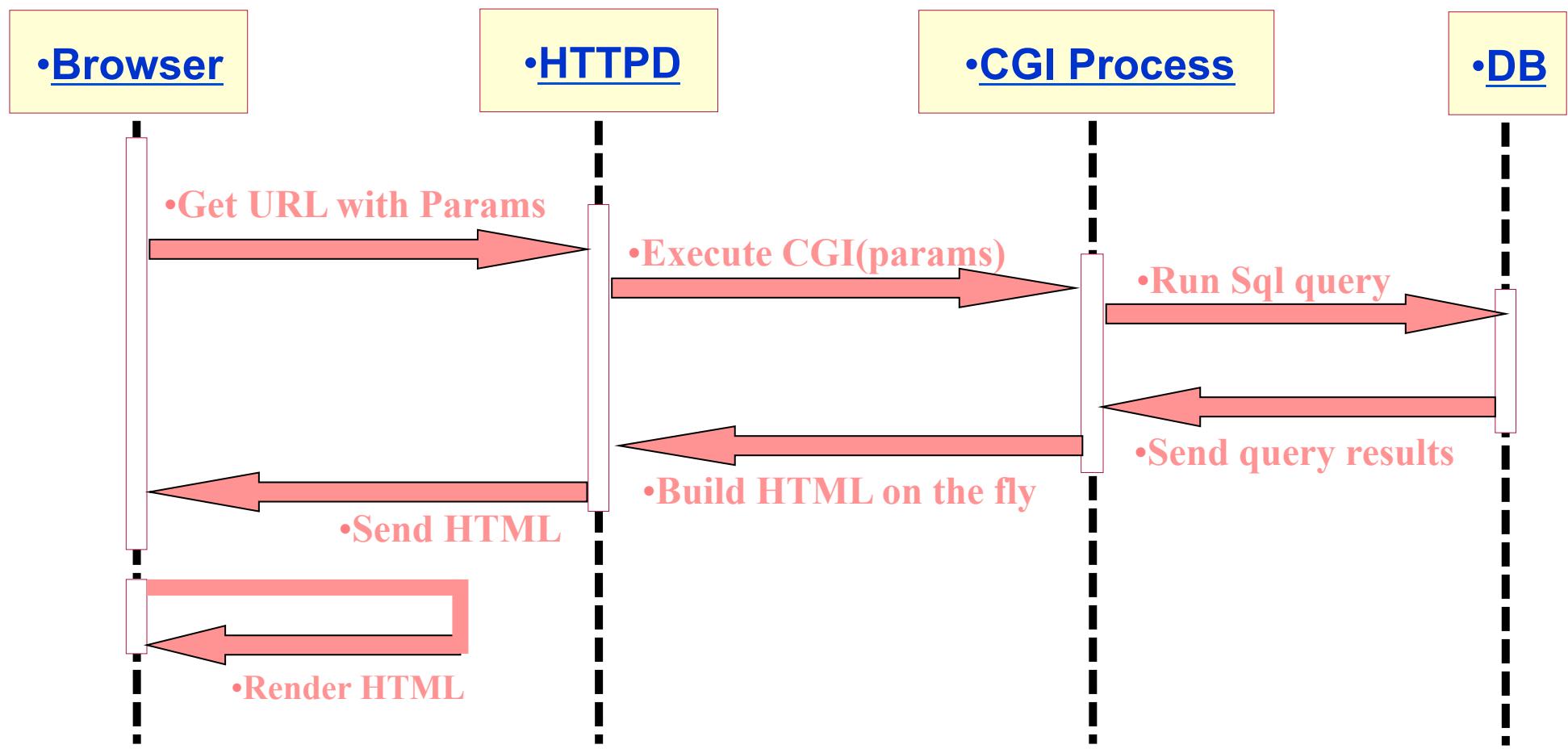
A simple interactive Web model



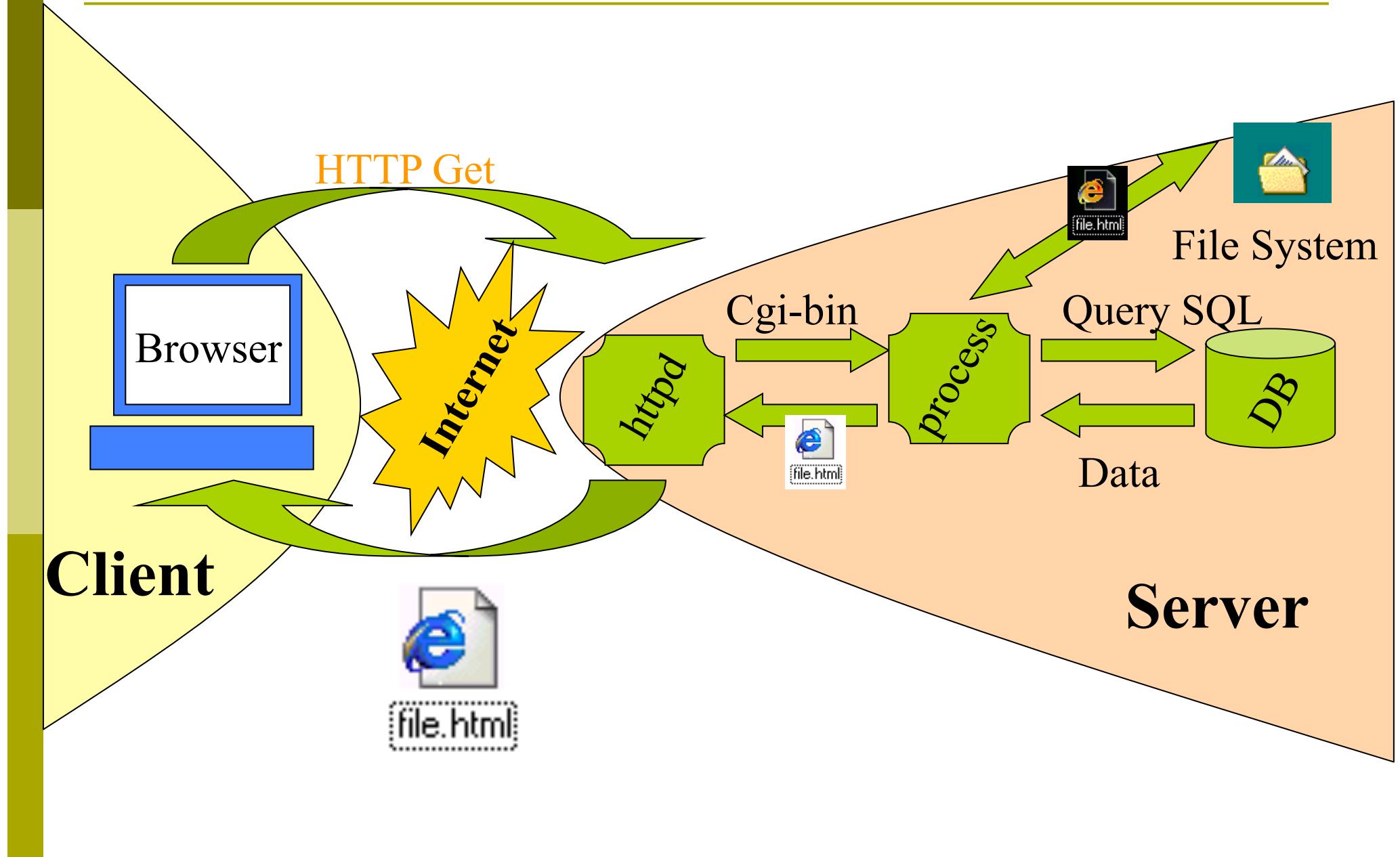
A simple interactive Web model



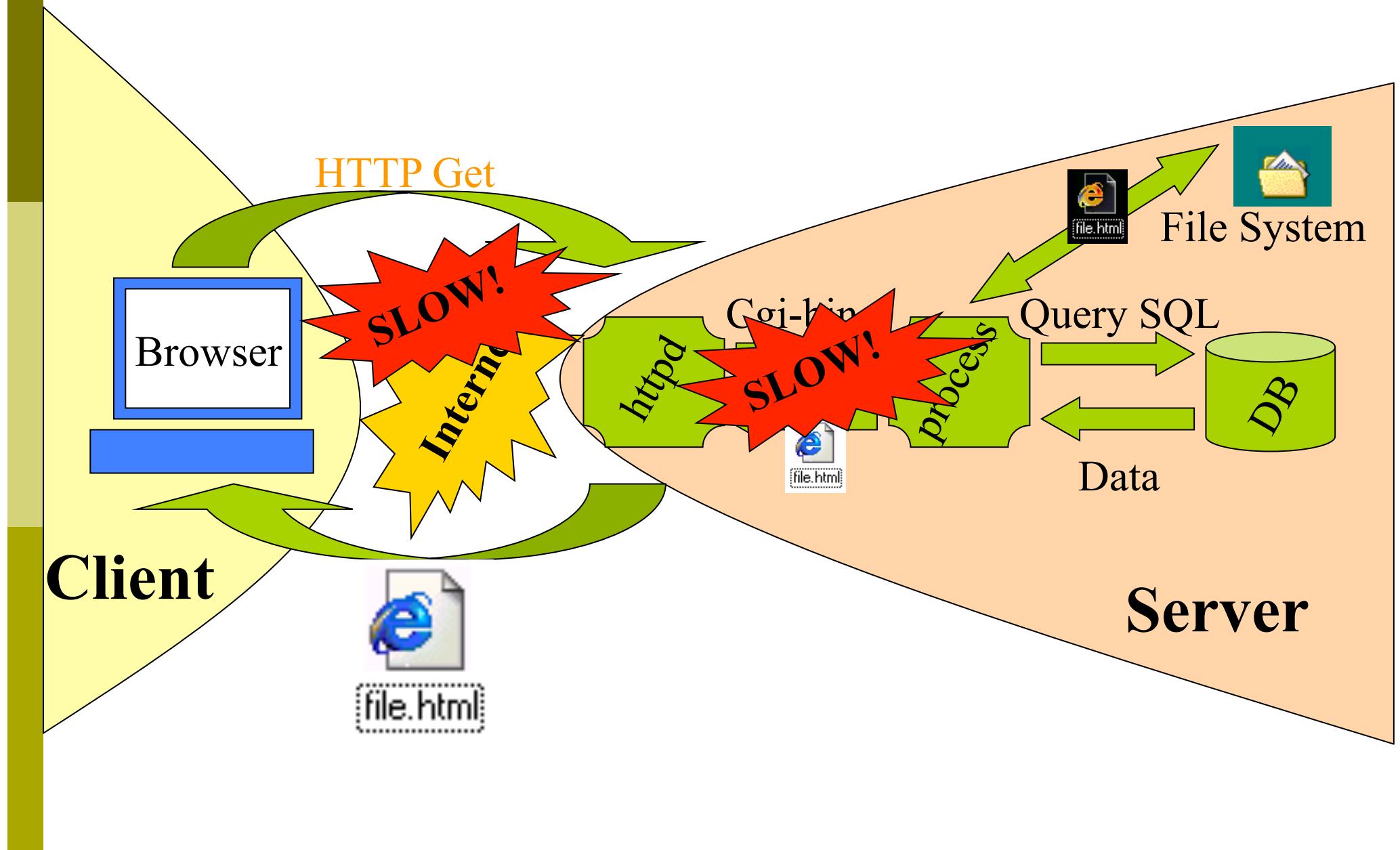
An evolved interactive Web model



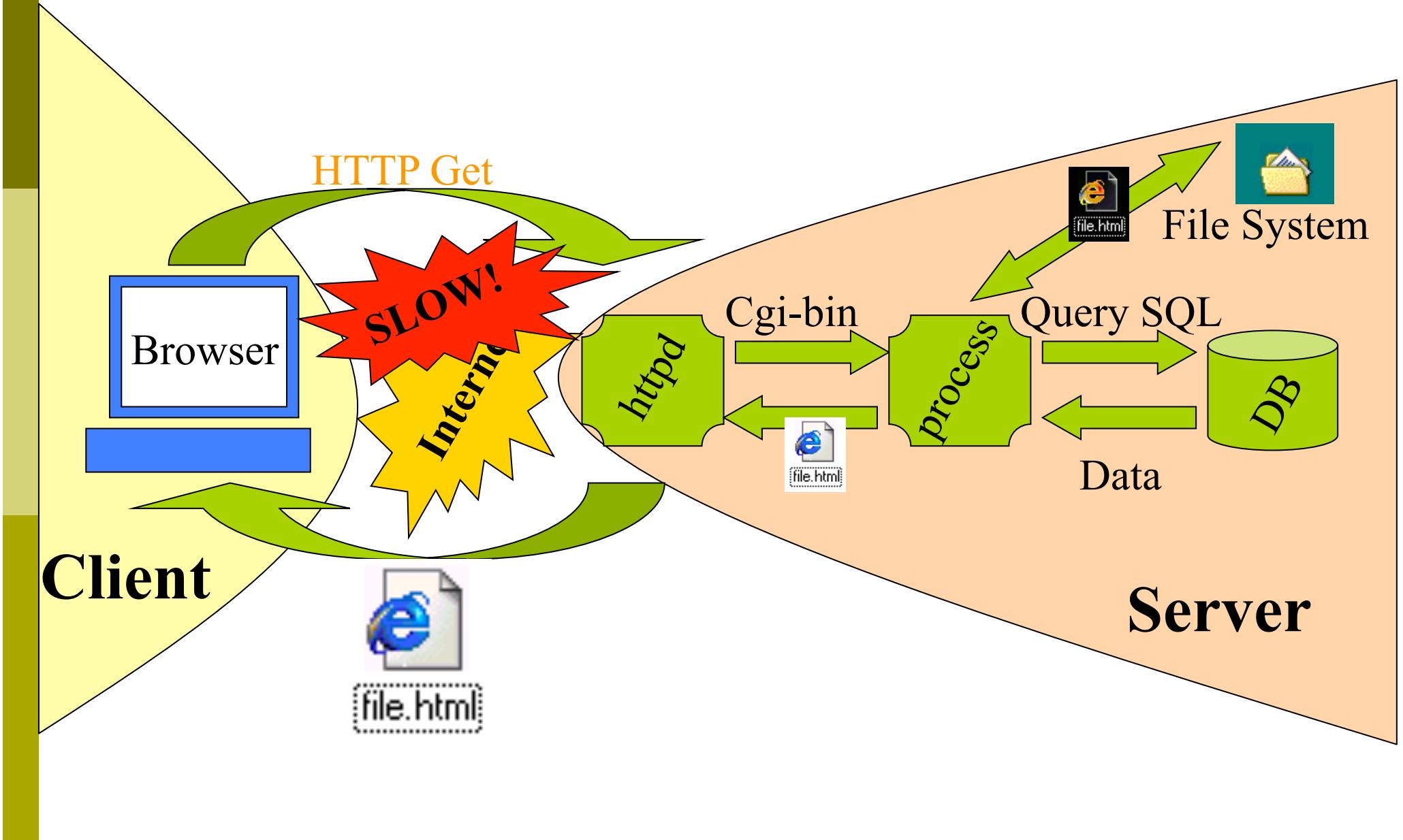
An evolved interactive Web model



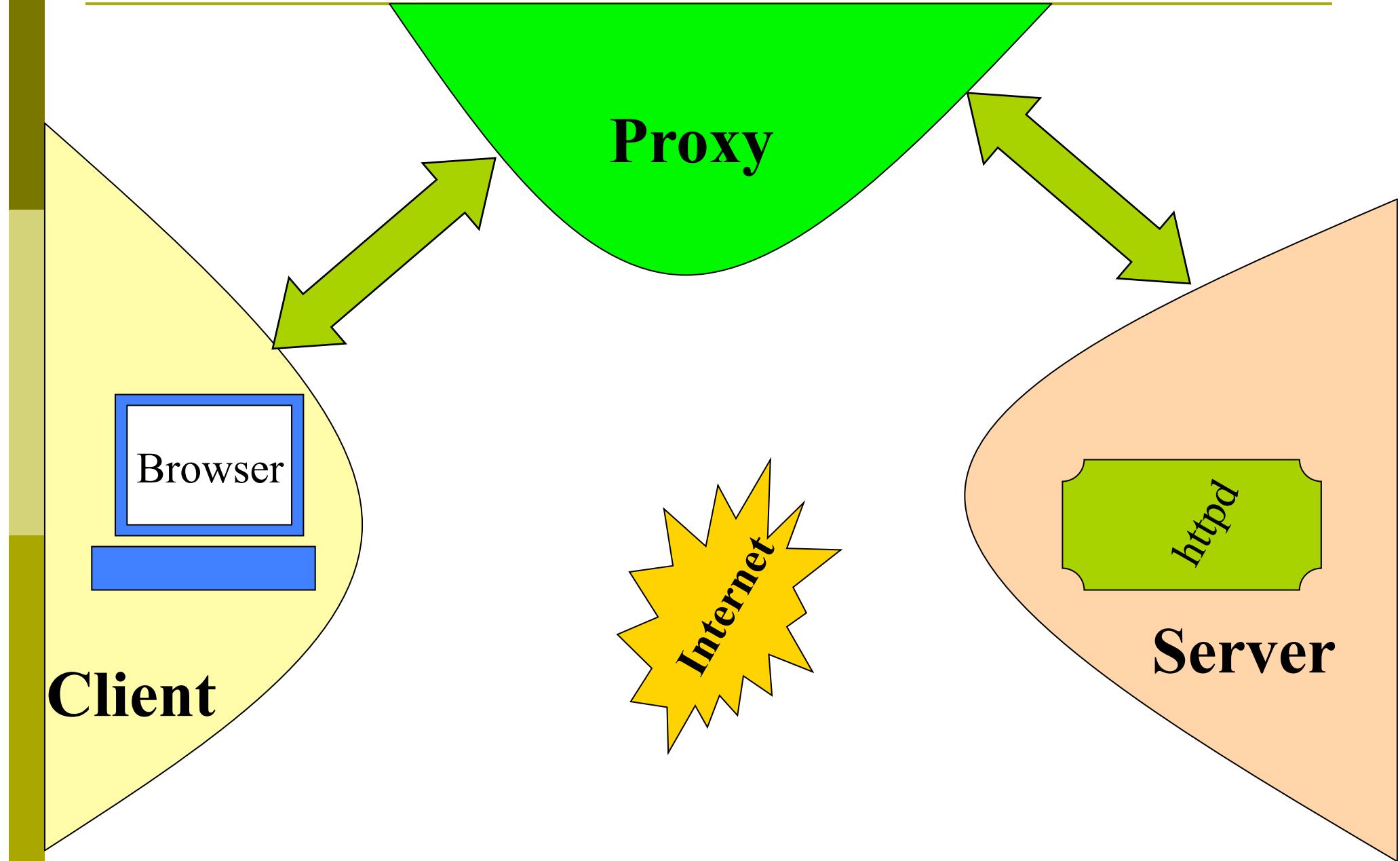
The Bottlenecks



The Bottleneck – part I

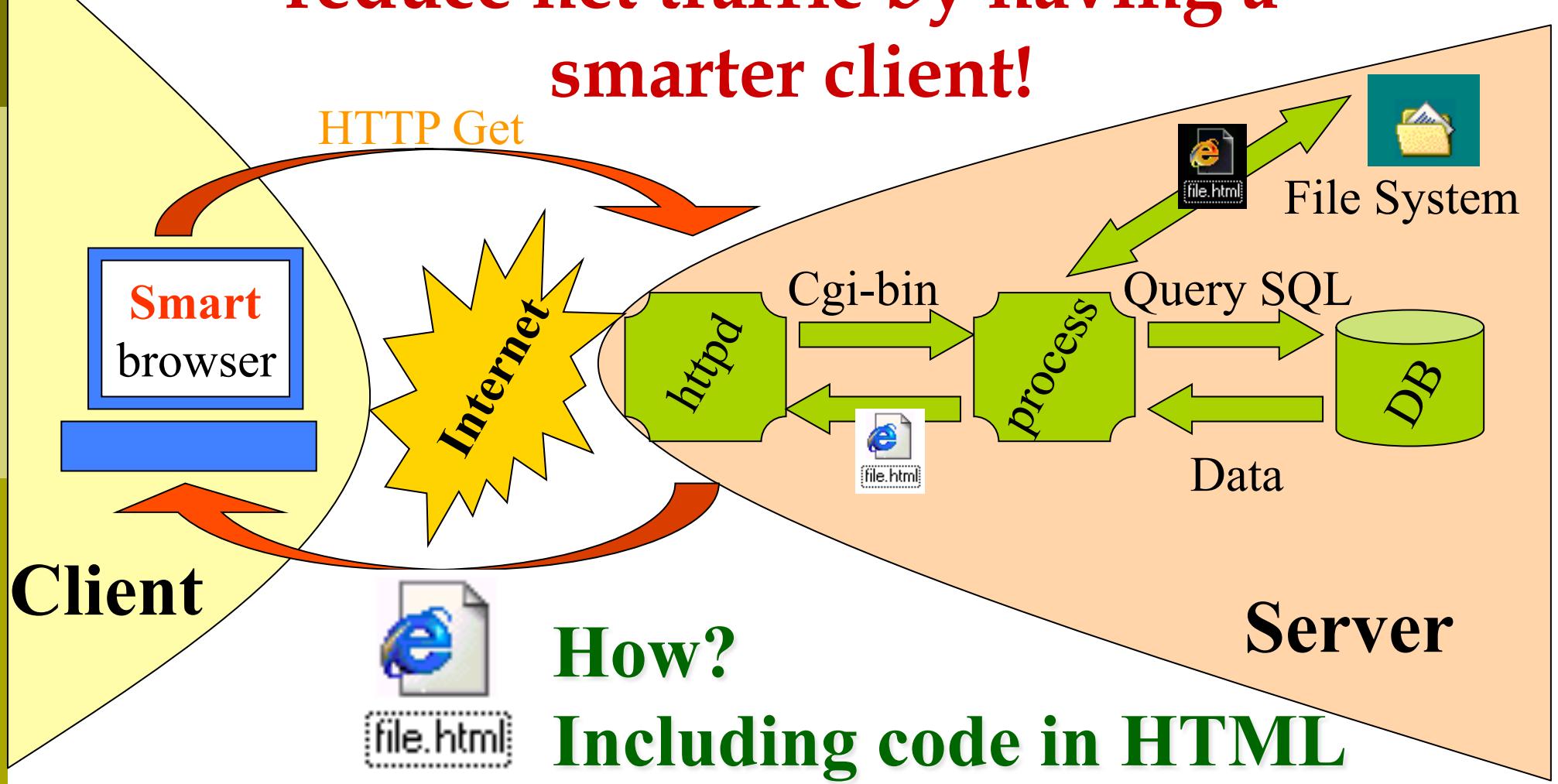


The Proxy

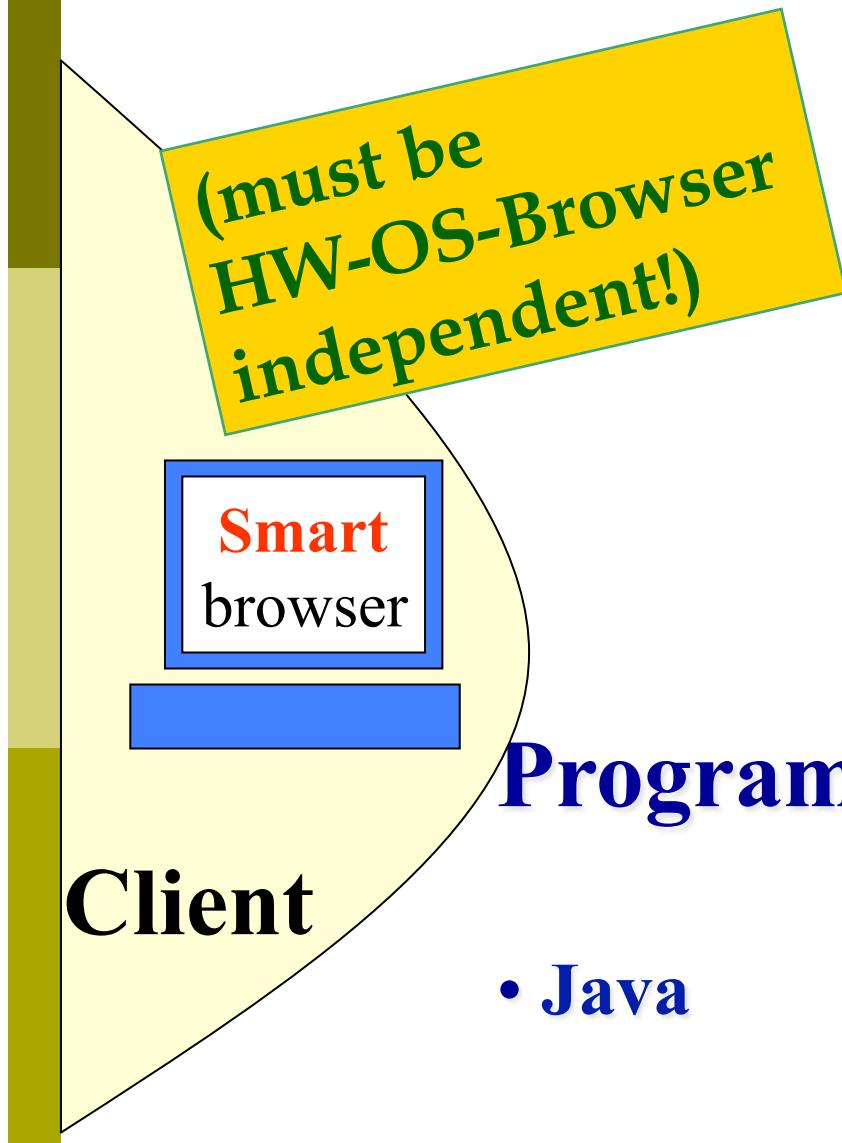


The solution:

reduce net traffic by having a
smarter client!



Enabling technologies



Programming languages

- Java

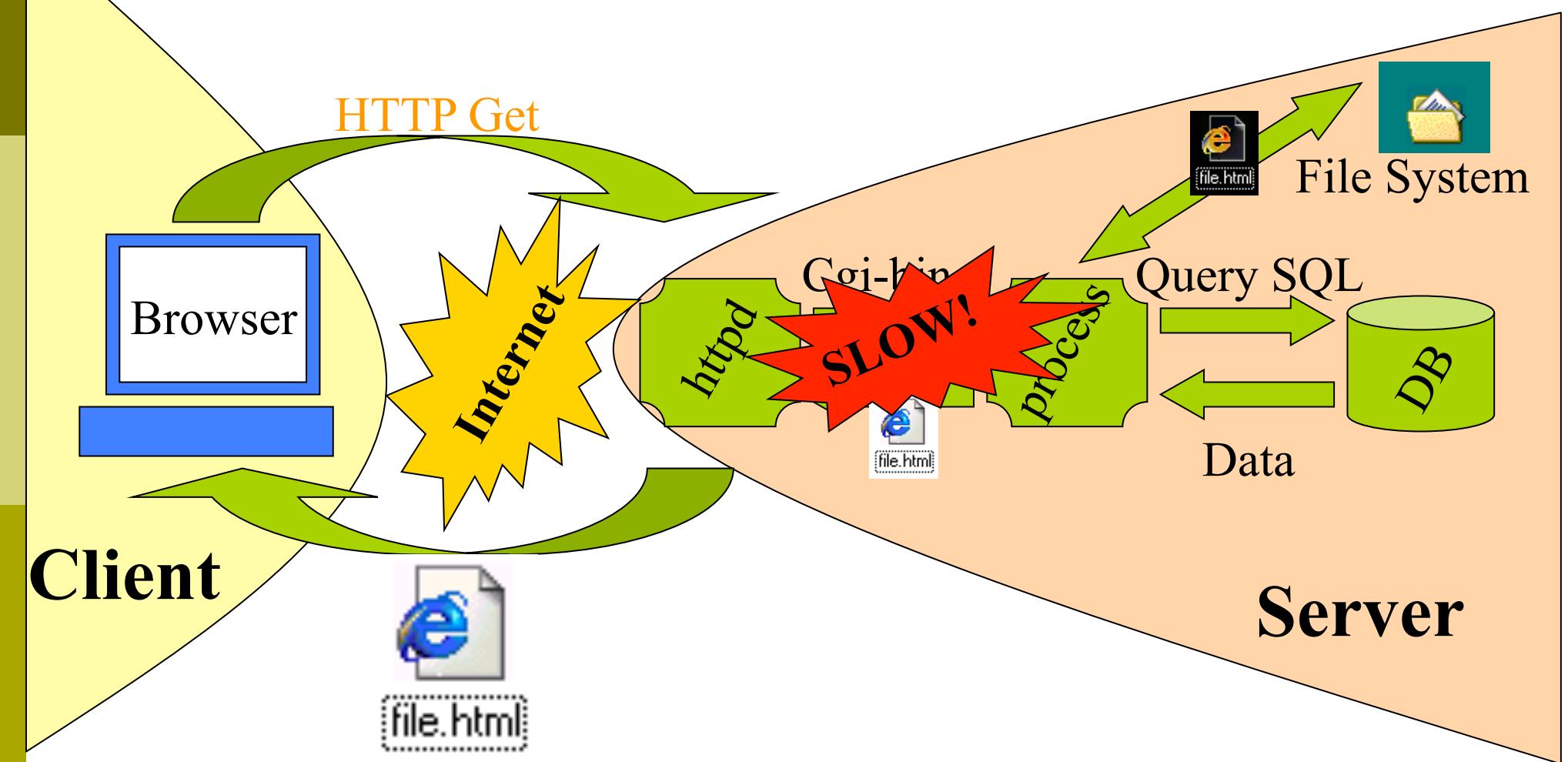
Scripting languages

- Javascript (+ Ajax)
- Vbscript
- Perlscript
- Python
- ...

Interpreted:
Source code travels

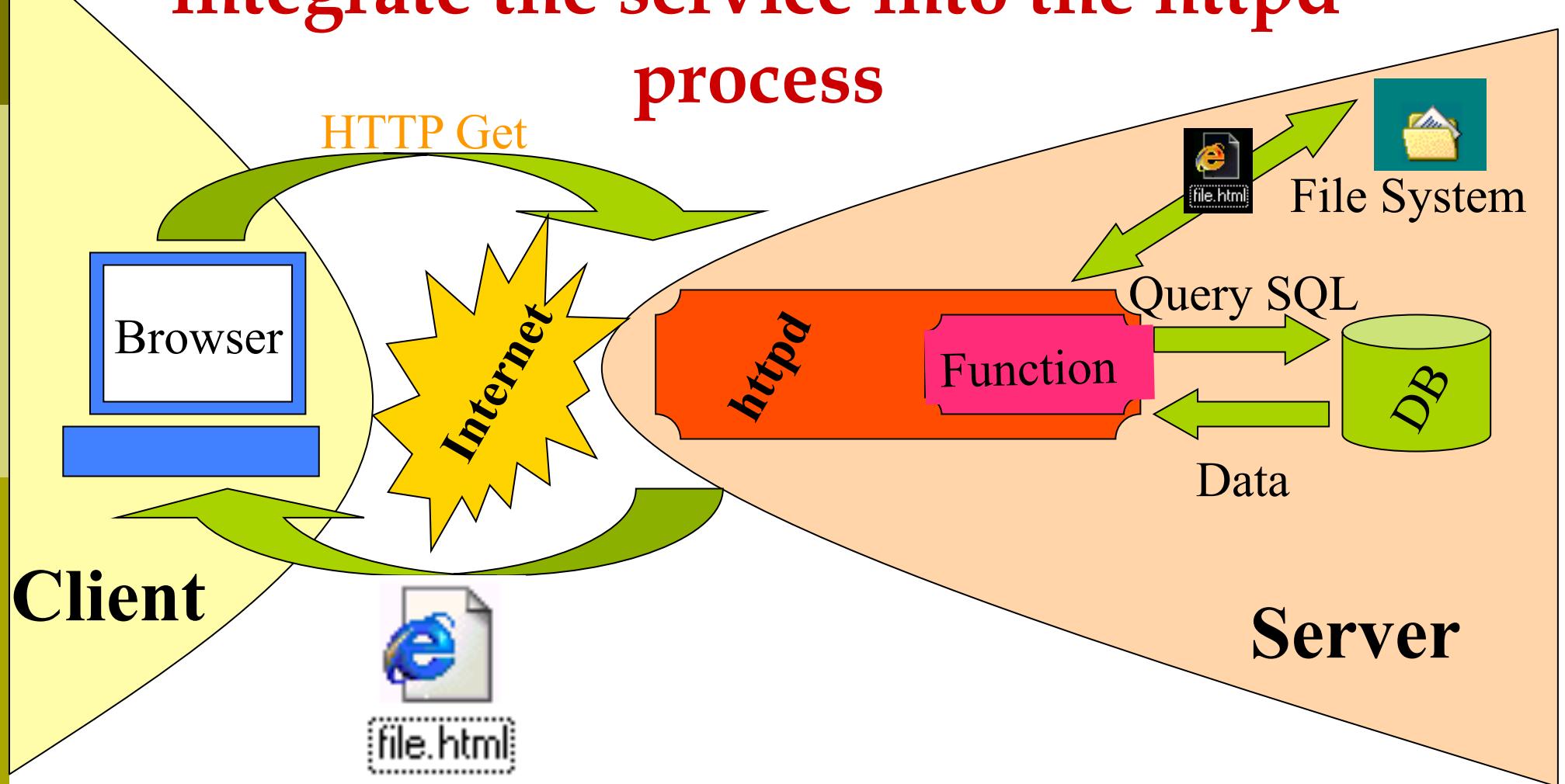
Compiled:
Executable travels

The Bottleneck – part II



The solution:

integrate the service into the httpd process



Enabling technologies

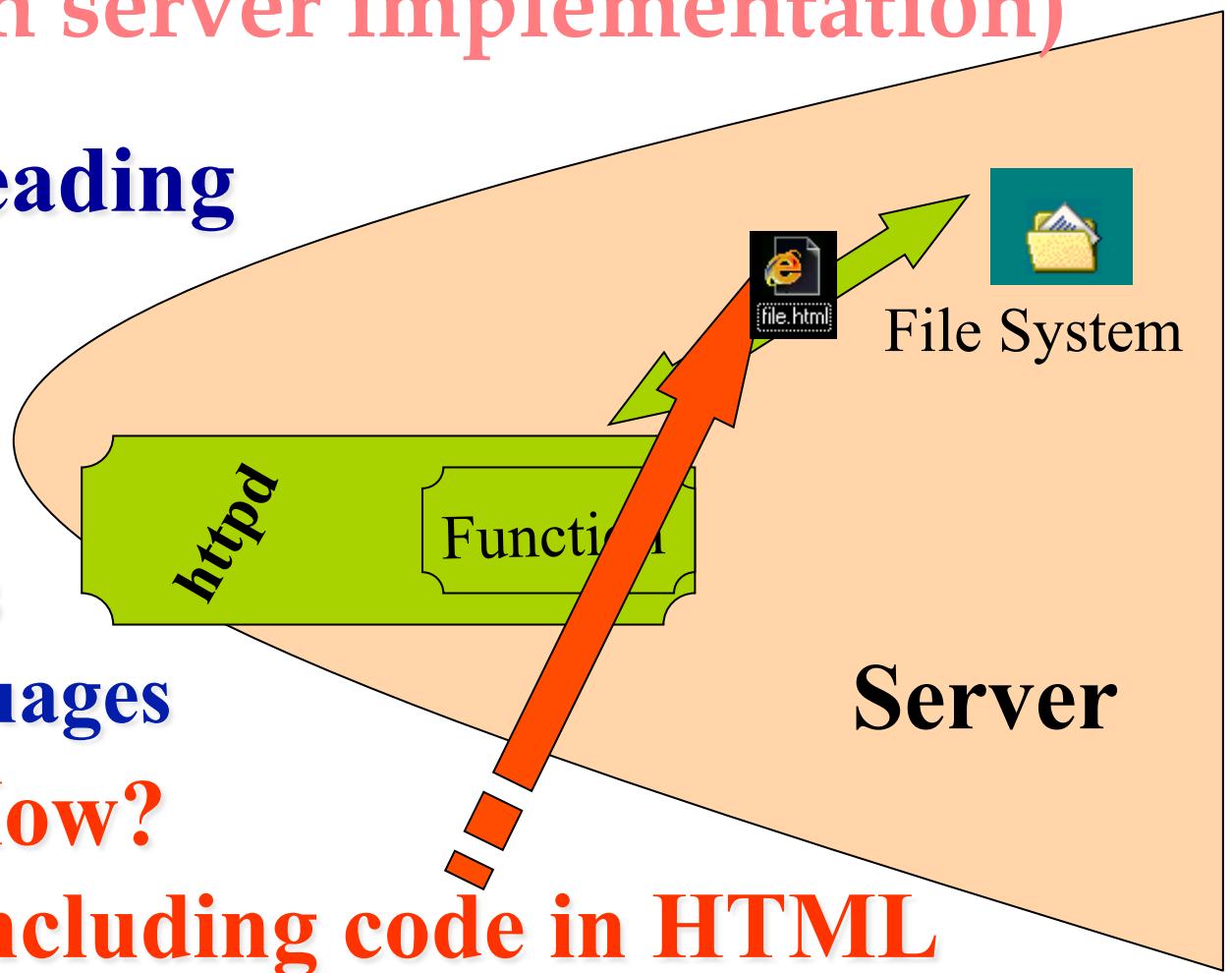
(depending on server implementation)

- Multithreading
- DLL
- Servlets

Using...

- Scripting languages
- Programming languages

How?
Including code in HTML



mixed client- and server-side scripting

```
<HTML>
```

```
...
```

```
<SCRIPT LANGUAGE=VBScript RUNAT=SERVER>
```

```
...VBScript Commands...
```

```
</SCRIPT>
```

```
...
```

```
<%VBScript Commands%>
```

```
...
```

```
<SCRIPT LANGUAGE=JavaScript>
```

```
...JavaScript Commands...
```

```
</SCRIPT>
```

```
...
```

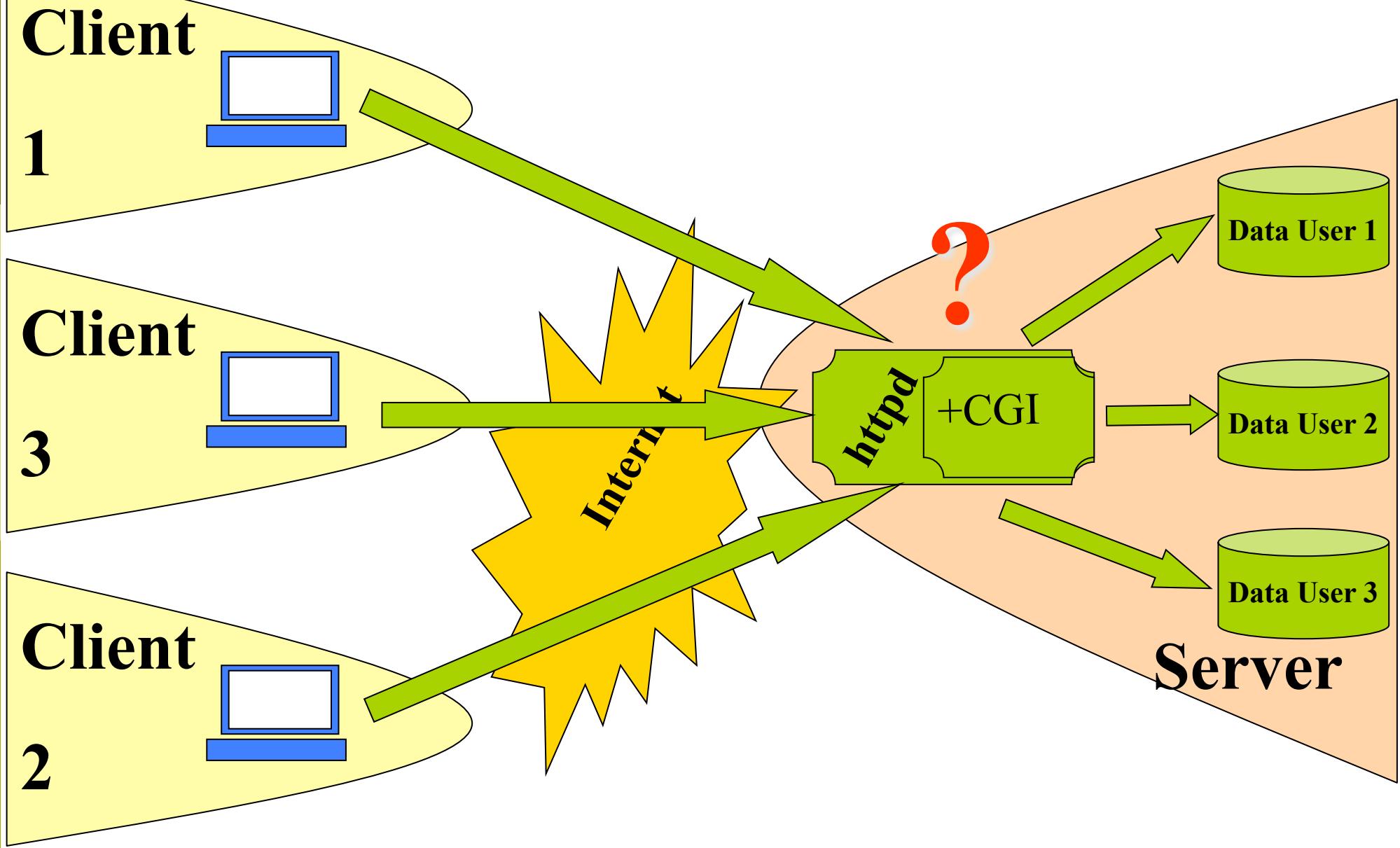
```
</HTML>
```

ASP Syntax

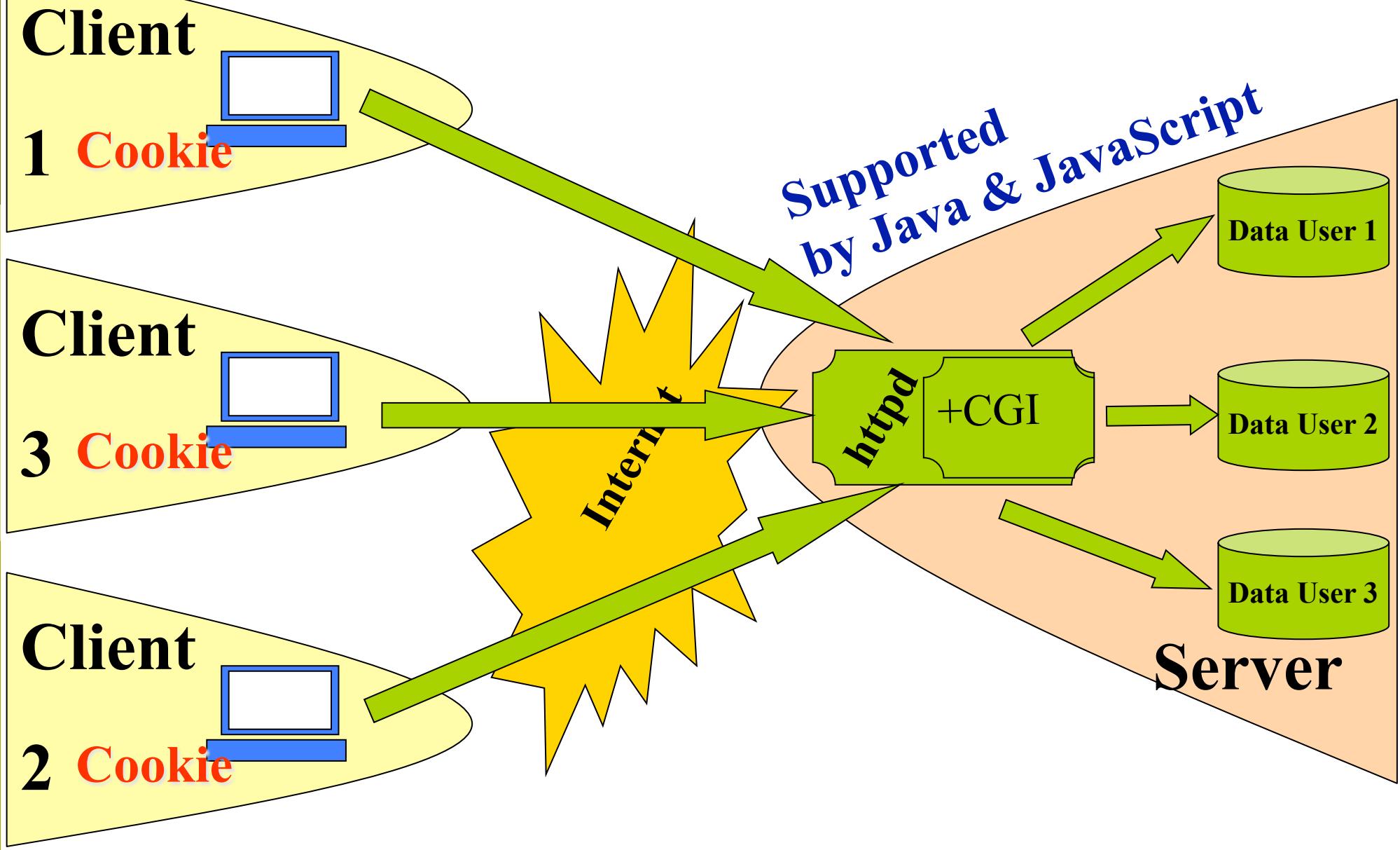
Code executed by the Server BEFORE the page is transferred over the Net

Code transferred to the client and interpreted by the Browser

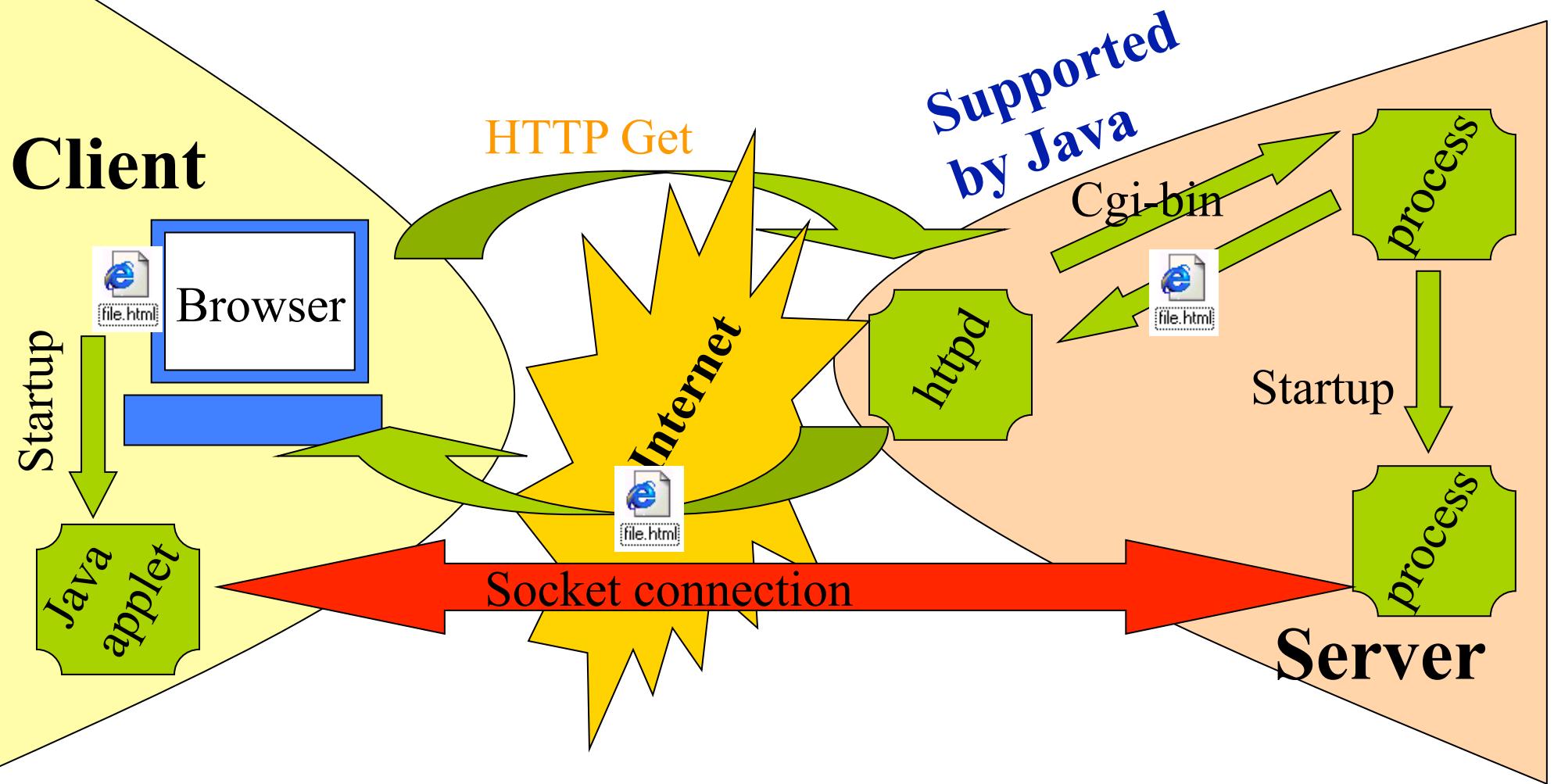
The state problem



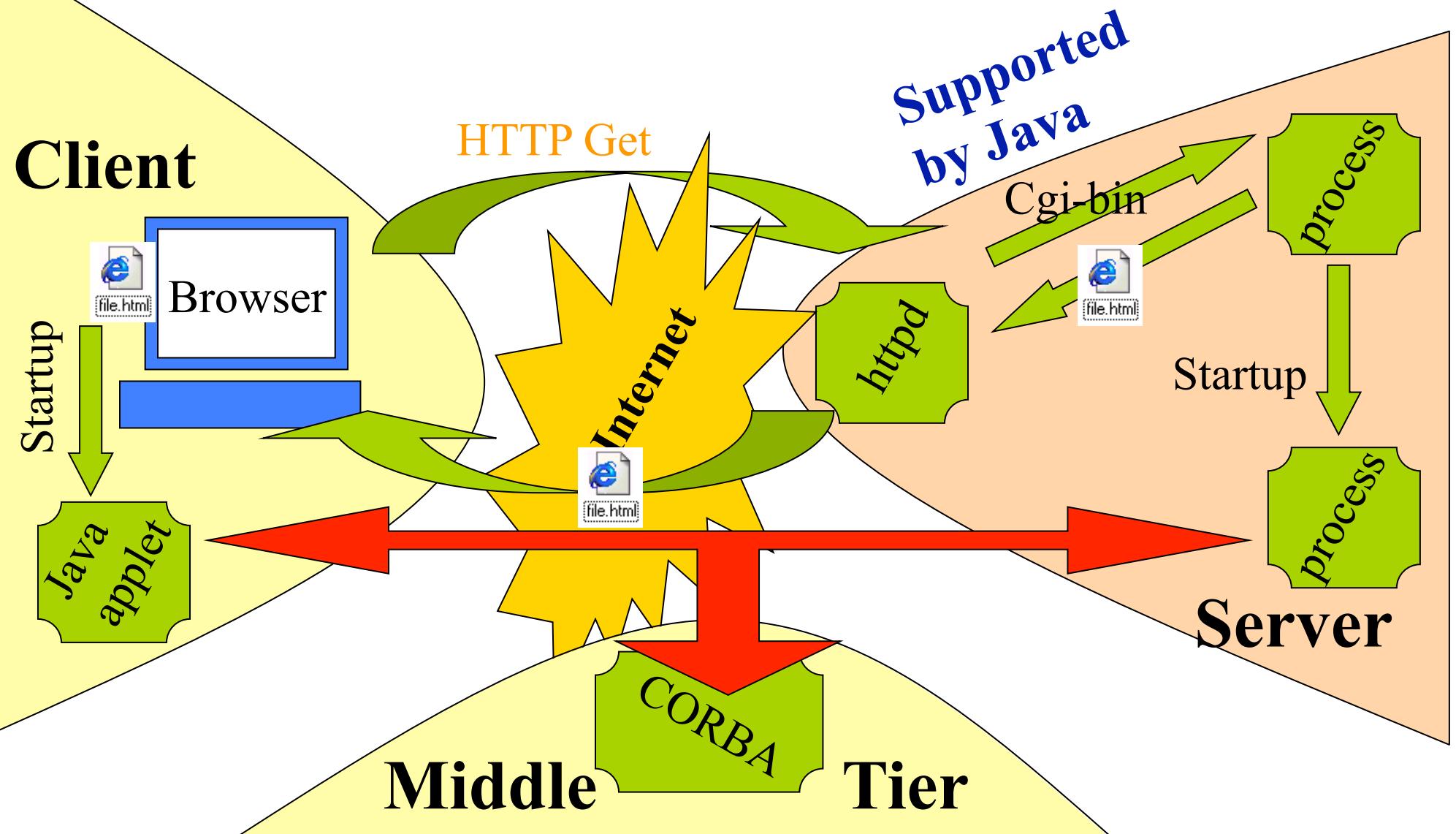
A typical solution



A more radical solution



An even more radical solution



XML Enabled HTTP Server

