



Lisbon School  
of Economics  
& Management  
Universidade de Lisboa



LISBOA

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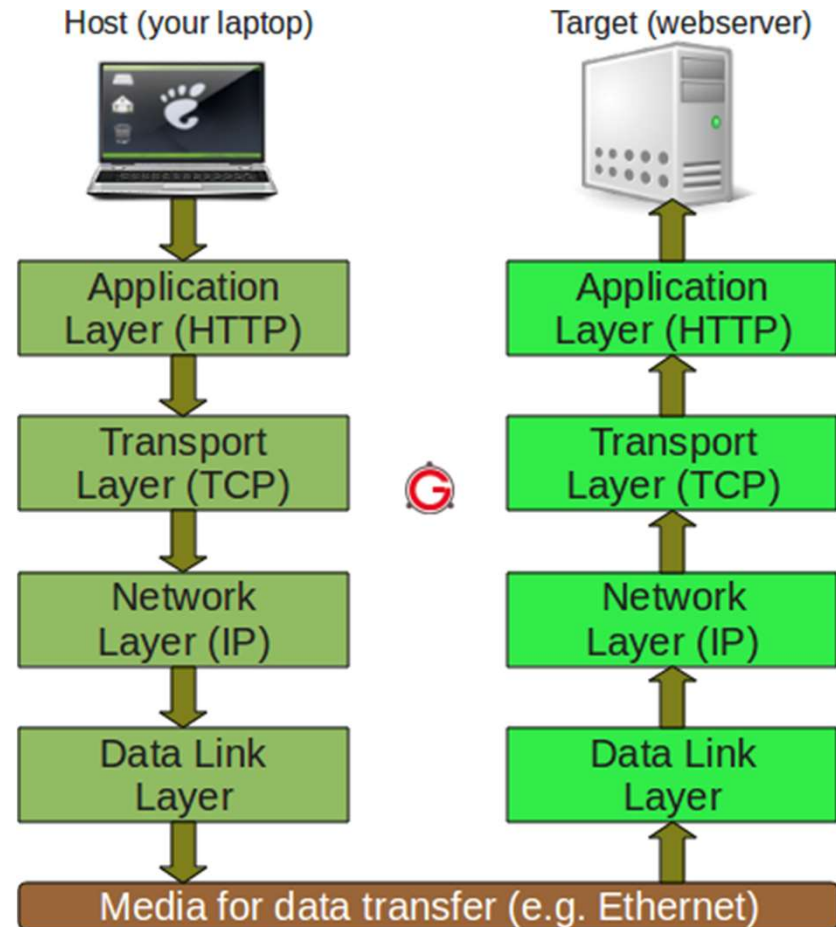
**CARLOS J. COSTA**

# **BASE DE DADOS NA WEB**



# Protocols

- Protocols:
  - HTTP (hipertext Transfer Protocol)
  - TCP (Transmission Control Protocol )
  - IP (Internet Protocol)
  - Ethernet



# DHCP

- Servidor de DHCP (Dynamic Host Configuration Protocol)
  - tem por propósito atribuição de IP



# DHCP

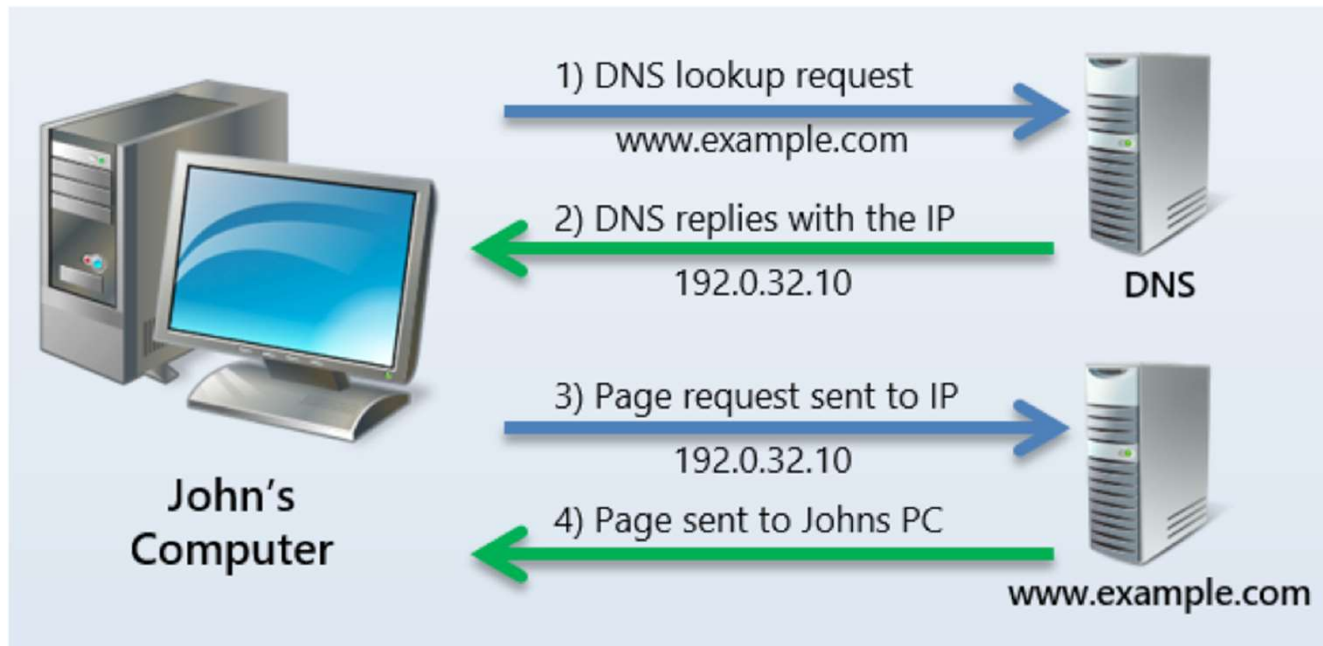
- Comandos para saber o IP do nosso computador
  - No DOS/Windows:  
`ipconfig`
  - No Linux/Mac:  
`ifconfig`

# IP

- Computadores têm IP
- IP privado
- IP público
- Servidores também têm IP
  - Exemplo: <http://193.136.144.100/>

# DNS

- DNS (Domain Name System)

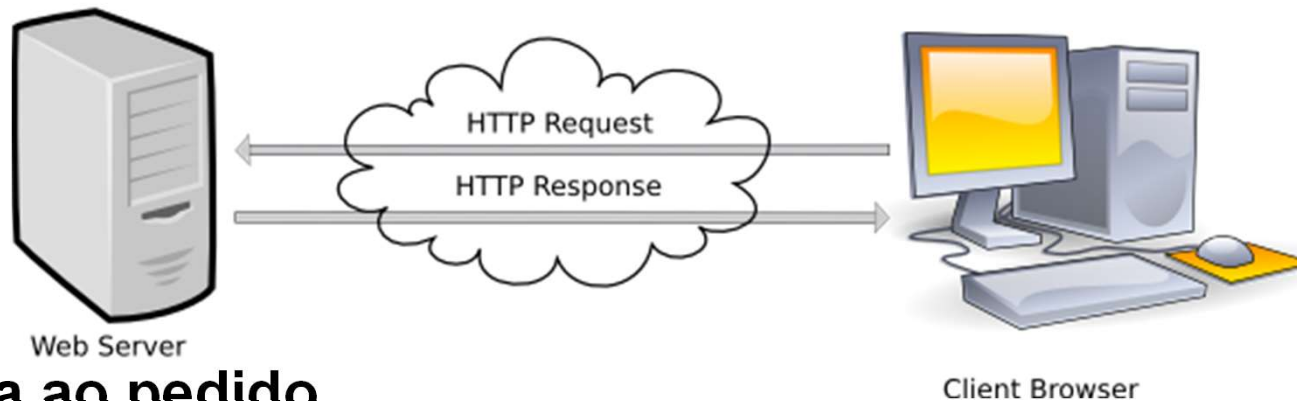


# HTTP

## 2 – Pedido recebido

Pode existir: execução de programas, acesso base de dados...

1 – Pedido HTTP (escrevendo URL na barra de endereço)

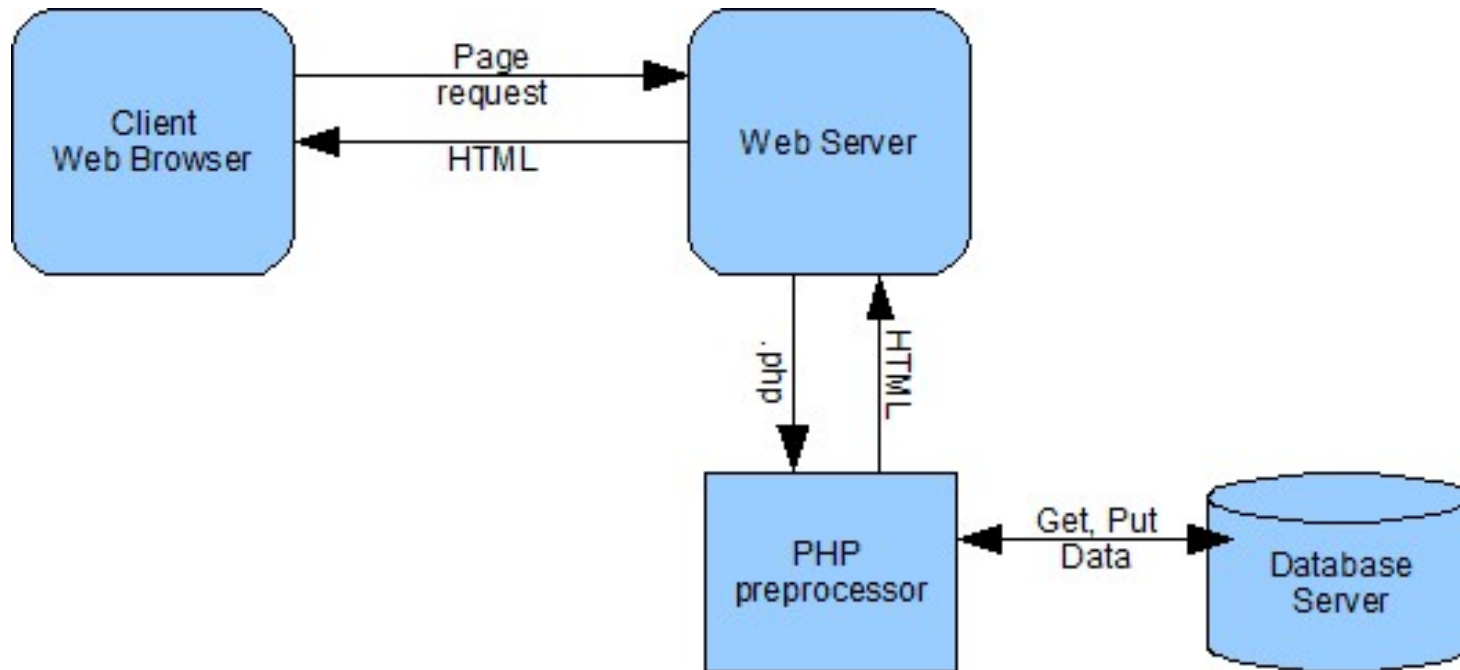


## 3- Reposta ao pedido

4 – Recebido reposta (ficheiros texto, imagens, etc)

5 – Interpretação do código

# Wed Server/DB Server





# Browser

- Fazer pedido HTTP
- Interpretar repostas (HTML, CSS, Javascript)
- Renderizar e Mostrar no Ecã
- Também tem ferramentas de desenvolvimento



# Solução



- XAMPP:

- <https://www.apachefriends.org/index.html>

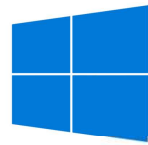
- <https://youtu.be/h6DEDm7C37A>

# XAMPP



- XAMPP

- X

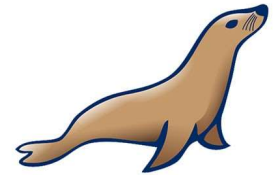


- Apache



APACHE  
HTTP SERVER

- MariaDB (ou MySQL)



MariaDB



MySQL®

- PHP



- Perl



# XAMPP

XAMPP Control Panel v3.2.2 [ Compiled: Nov 12th 2015 ]

**XAMPP Control Panel v3.2.2**

Service	Module	PID(s)	Port(s)	Actions
<input type="checkbox"/>	Apache	13508 10116	80, 443	Stop Admin Config Logs
<input type="checkbox"/>	MySQL	13432	3306	Stop Admin Config Logs
<input type="checkbox"/>	FileZilla			Start Admin Config Logs
<input type="checkbox"/>	Mercury			Start Admin Config Logs
<input type="checkbox"/>	Tomcat			Start Admin Config Logs

16:02:55 [main] All prerequisites found  
16:02:55 [main] Initializing Modules  
16:02:55 [main] Starting Check-Timer  
16:02:55 [main] Control Panel Ready  
16:03:03 [Apache] Attempting to start Apache app...  
16:03:03 [Apache] Status change detected: running  
16:03:03 [mysql] Attempting to start MySQL app...  
16:03:04 [mysql] Status change detected: running

Config Netstat Shell Explorer Services Help Quit

# XAMPP

- Se o XAMPP estiver a correr no nosso computador deve-se colocar no browser:

<http://localhost>

- Se o XAMPP estiver a correr em outro computador, temos que saber o IP desse computador. Se for, por exemplo, 192.168.1.11, então deve escrever-se:

<http://192.168.1.11>

# phpmyadmin

The screenshot displays the phpMyAdmin web interface in a browser window. The address bar shows 'localhost/phpmyadmin/'. The interface includes a top navigation menu with options like 'Databases', 'SQL', 'Status', 'User accounts', 'Export', 'Import', 'Settings', 'Replication', 'Variables', 'Charsets', 'Engines', and 'Plugins'. A left sidebar shows a tree view of databases: 'information\_schema', 'mysql', 'performance\_schema', 'phpmyadmin', and 'test'. The main content area is divided into three panels: 'General settings' (Server connection collation: utf8mb4\_unicode\_ci), 'Appearance settings' (Language: English, Theme: pmahomme, Font size: 82%), and 'Database server' (Server: 127.0.0.1 via TCP/IP, Server type: MariaDB, Server version: 10.1.28-MariaDB - mariadb.org binary distribution, Protocol version: 10, User: root@localhost, Server charset: UTF-8 Unicode (utf8)). A 'Web server' panel shows details like Apache/2.4.29 (Win32) OpenSSL/1.0.2l PHP/7.1.11. A 'phpMyAdmin' panel provides version information (4.7.4, latest stable version: 4.7.5) and links to documentation, official homepage, contribute, get support, list of changes, and license. A blue banner at the bottom of the interface states: 'A newer version of phpMyAdmin is available and you should consider upgrading. The newest version is 4.7.5, released on 2017-10-23.' A 'Console' tab is visible at the bottom left.

# phpmyadmin

- Criar base de dados
- Criar tabelas

Cliente (idCliente, nome, eMail)

Artigo (codigoArtigo, *idCliente*, descricao, valor)

localhost/phpmyadmin/db\_structure.php?db=dbcliente

Server: 127.0.0.1 » Database: dbcliente » Table: cliente

Table name: cliente Add 1 column(s) Go

Name	Type	Length/Values	Default	Collation	Attributes	Null	Index	A.I.	Comments	Virtual
idCliente	INT		None			<input type="checkbox"/>	PRIMARY	<input type="checkbox"/>		<input type="checkbox"/>
eMail	TEXT		None			<input type="checkbox"/>	---	<input type="checkbox"/>		<input type="checkbox"/>
nome	TEXT		None			<input type="checkbox"/>	---	<input type="checkbox"/>		<input type="checkbox"/>
	INT		None			<input type="checkbox"/>	---	<input type="checkbox"/>		<input type="checkbox"/>
	INT		None			<input type="checkbox"/>	---	<input type="checkbox"/>		<input type="checkbox"/>

Table comments: Collation: Storage Engine: InnoDB

PARTITION definition:

```

Partition by: ( Expression or column list )
Console
Press Ctrl+Enter to execute query
>CREATE TABLE `dbcliente`.`cliente` ( `idCliente` INT NOT NULL , `eMail` TEXT NOT NULL , PRIMARY KEY (`idCliente`)) ENGINE = InnoDB;
>

```



localhost/phpmyadmin/db\_structure.php?server=1&db=dbcliente&table=cliente

Server: 127.0.0.1 » Database: dbcliente » Table: cliente

Table structure

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
<input type="checkbox"/>	1	idCliente	int(11)		No	None		Primary Unique Index Spatial Fulltext Distinct values	Change Drop Primary Unique Index Spatial Fulltext Distinct values More
<input type="checkbox"/>	2	eMail	text latin1_swedish_ci		No	None		Primary Unique Index Spatial Fulltext Distinct values	Change Drop Primary Unique Index Spatial Fulltext Distinct values More
<input type="checkbox"/>	3	nome	text latin1_swedish_ci		No	None		Primary Unique Index Spatial Fulltext Distinct values	Change Drop Primary Unique Index Spatial Fulltext Distinct values More

Check all With selected: Browse Change Drop Primary Unique Index Add to central columns Remove from central columns

Print Propose table structure Track table Move columns Improve table structure

Add 1 column(s) after nome Go

Indexes

Action	Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null	Comment
Edit Drop	PRIMARY	BTREE	Yes	No	idCliente	0	A	No	

Create an index on 1 columns Go

Partitions

No partitioning defined!

Console

```

Press Ctrl+Enter to execute query
>CREATE TABLE `dbcliente`.`cliente` ( `idCliente` INT NOT NULL , `eMail` TEXT NOT NULL , `nome` TEXT NOT NULL , PRIMARY KEY (`idCliente`)) ENGINE = InnoDB;
>CREATE TABLE `dbcliente`.`cliente` ( `idCliente` INT NOT NULL , `eMail` TEXT NOT NULL , `nome` TEXT NOT NULL , PRIMARY KEY (`idCliente`)) ENGINE = InnoDB;
>

```

localhost/phpmyadmin/tbl\_structure.php?server=1&db=dbcliente&table=artigo#

Server: 127.0.0.1 » Database: dbcliente » Table: artigo

Table structure

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
<input type="checkbox"/>	1	codigoArtigo	int(11)		No	None		Primary Unique Index Spatial Fulltext Distinct values	Change Drop Primary Unique Index Spatial Fulltext Distinct values More
<input type="checkbox"/>	2	idCliente	int(11)		No	None		Primary Unique Index Spatial Fulltext Distinct values	Change Drop Primary Unique Index Spatial Fulltext Distinct values More
<input type="checkbox"/>	3	descricao	text	latin1_swedish_ci	No	None		Primary Unique Index Spatial Fulltext Distinct values	Change Drop Primary Unique Index Spatial Fulltext Distinct values More
<input type="checkbox"/>	4	valorArtigo	float		No	None		Primary Unique Index Spatial Fulltext Distinct values	Change Drop Primary Unique Index Spatial Fulltext Distinct values More

Check all With selected: Browse Change Drop Primary Unique Index Add to central columns Remove from central columns

Print Propose table structure Track table Move columns Improve table structure Index

Add 1 column(s) after valorArtigo Go

Indexes

Action	Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null	Comment
Edit Drop	PRIMARY	BTREE	Yes	No	codigoArtigo	0	A	No	
Edit Drop	idCliente	BTREE	No	No	idCliente	0	A	No	

Create an index on 1 columns Go

Partitions

Console

```

>SELECT * FROM `artigo`
>SELECT * FROM `artigo`
>SELECT * FROM `cliente`
>

```

localhost/phpmyadmin/db\_designer.php?db=dbcliente

phpMyAdmin

Server: 127.0.0.1 » Database: dbcliente

Structure SQL Search Query Export Import Operations Privileges Routines Events Triggers Tracking More

Untitled \*

Recent Favorites

- New
  - dbcliente
    - New
      - artigo
      - cliente
  - information\_schema
  - mysql
  - performance\_schema
  - phpmyadmin
  - test

Show/Hide tables list

View in fullscreen

New page

Open page

Save page

Save page as

Delete pages

Create table

**Create relationship**

Choose column to display

Reload

Help

Angular links / Direct links

Snap to grid

Small/Big All

Toggle small/big

Toggle relationship lines

Export schema

Move Menu

Pin text

Console

```
>ALTER TABLE `artigo` ADD INDEX(`idCliente`);
>ALTER TABLE `artigo` ADD INDEX(`idCliente`);
>SELECT * FROM `artigo`
>SELECT * FROM `artigo`
```

Bookmarks Options History Clear

localhost/phpmyadmin/db\_designer.php?db=dbcliente#

dbcliente cliente
idCliente : int(11)
eMail : text
nome : text

dbcliente artigo
codigoArtigo : int(11)
# idCliente : int(11)
descricao : text
# valorArtigo : float

```
CREATE TABLE `artigo` (  
  `codigoArtigo` int(11) NOT NULL,  
  `idCliente` int(11) NOT NULL,  
  `descricao` text NOT NULL,  
  `valorArtigo` float NOT NULL  
) ENGINE=InnoDB DEFAULT CHARSET=latin1;
```

```
CREATE TABLE `cliente` (  
  `idCliente` int(11) NOT NULL,  
  `eMail` text NOT NULL,  
  `nome` text NOT NULL  
) ENGINE=InnoDB DEFAULT CHARSET=latin1;
```

```
ALTER TABLE `artigo`  
  ADD PRIMARY KEY (`codigoArtigo`),  
  ADD KEY `idCliente` (`idCliente`);
```

```
ALTER TABLE `cliente`  
  ADD PRIMARY KEY (`idCliente`);
```

```
ALTER TABLE `artigo`  
  ADD CONSTRAINT `artigo_ibfk_1` FOREIGN KEY (`idCliente`) REFERENCES `cliente` (`idCliente`);
```

# Exercicio

## 1. Criar a seguinte base de dados:

Participante (codParticipante, nome, sexo, email)

Participa (codParticipante, codigoFesta)

Festa (codFesta, data, descricao)

Patrocinio (idPatocinio, codFesta, codPatrocinador, valor)

Patrocinador (codPatrocinador, firma, morada, sector)

## 2. Inserir dados

## 3. Gerar SQL