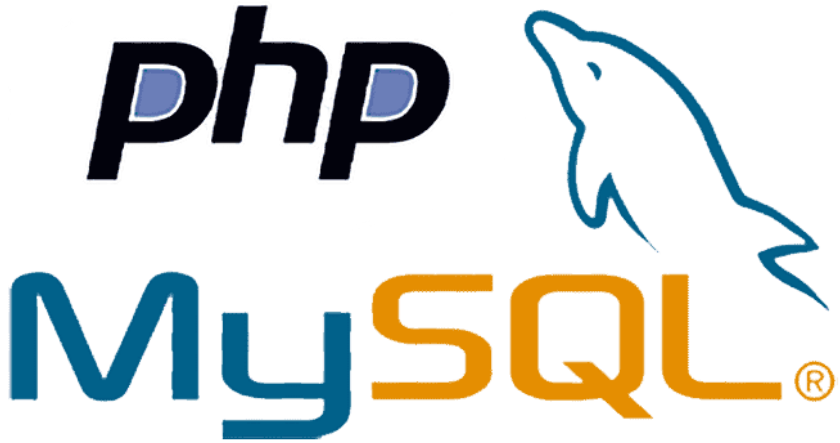
2021 – 2022



Introduction to Web Development

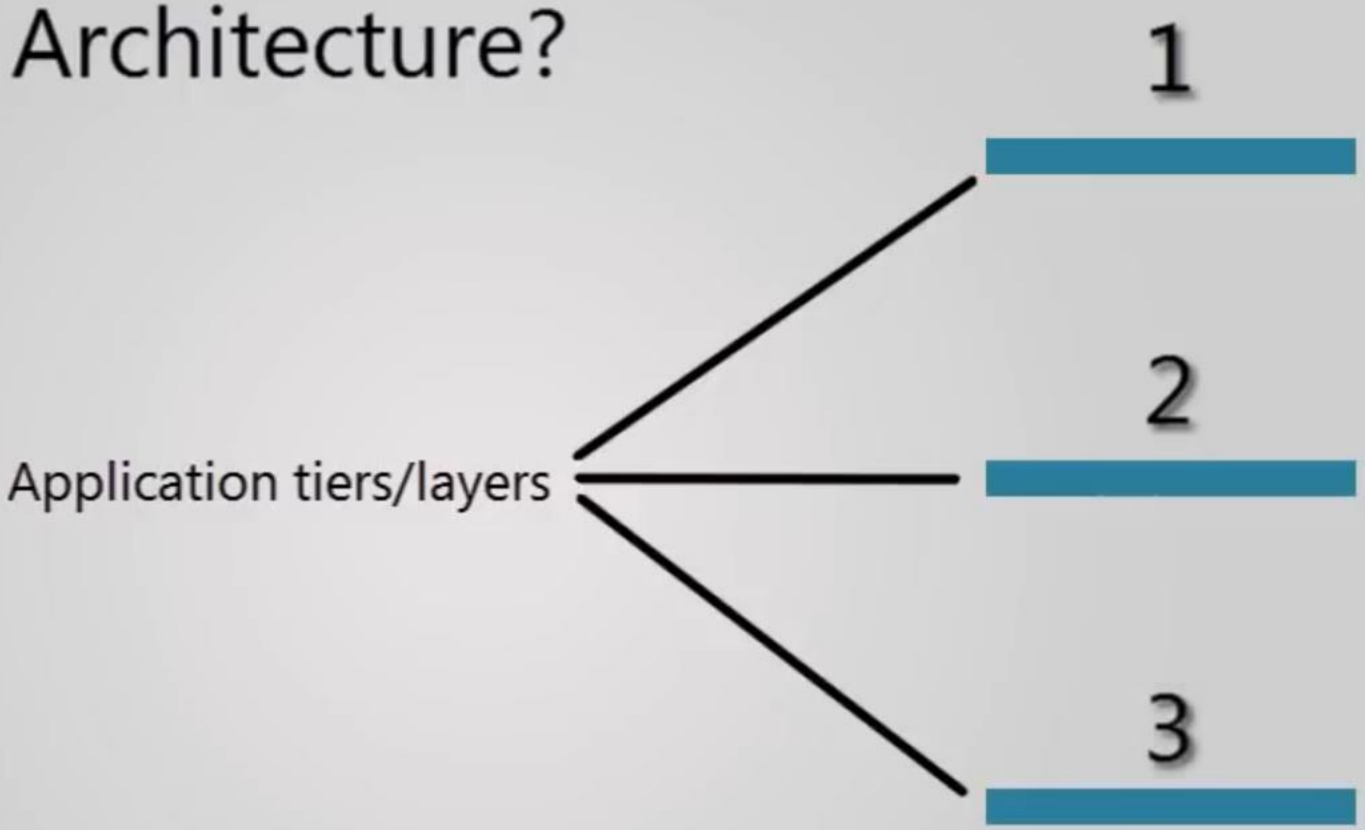
Eng. Hazem A. Alrakhawi, Dr. Tawfiq S Barhoom

What is N-tier Architecture?

N-tier architecture is also called multi-tier architecture because the software is engineered to have the processing, data management, and presentation functions physically and logically separated.

That means that these different functions are hosted on several machines or clusters, ensuring that services are provided without resources being shared and, as such, these services are delivered at top capacity.

What is n-Tier Architecture?



What is n-Tier Architecture?

Presentation Layer

Application Layer

Data Layer

Presentation tier

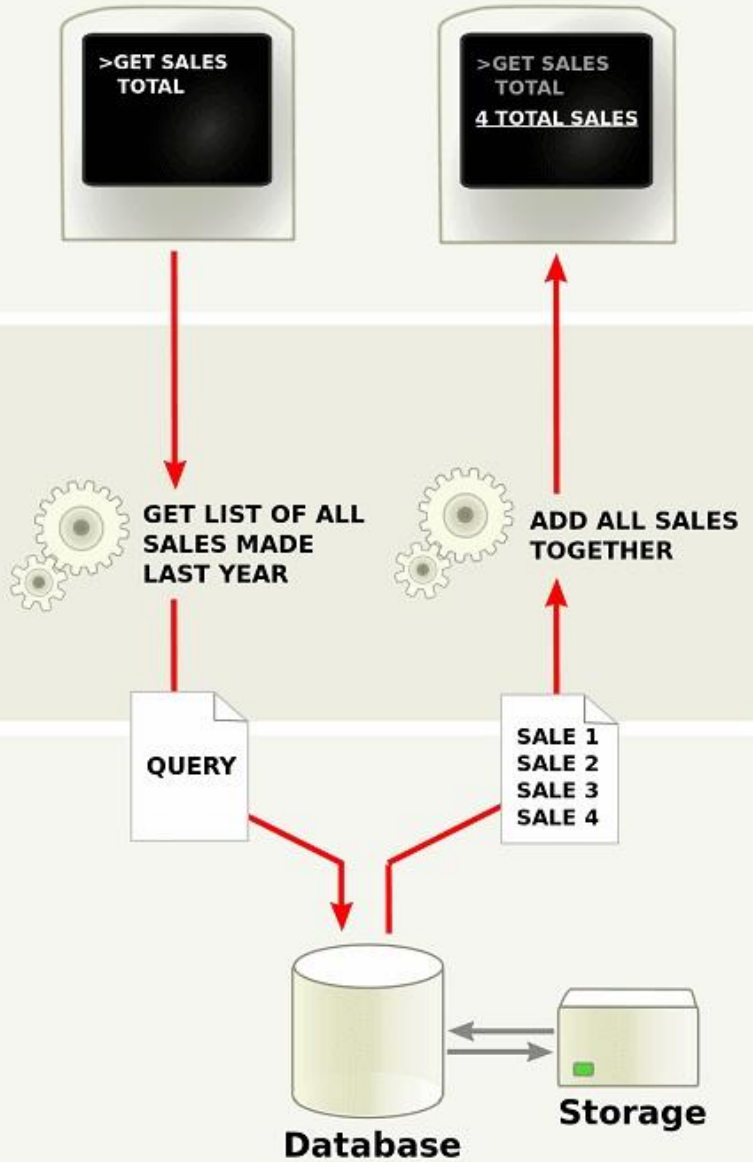
The top-most level of the application is the user interface. The main function of the interface is to translate tasks and results to something the user can understand.

Logic tier

This layer coordinates the application, processes commands, makes logical decisions and evaluations, and performs calculations. It also moves and processes data between the two surrounding layers.

Data tier

Here information is stored and retrieved from a database or file system. The information is then passed back to the logic tier for processing, and then eventually back to the user.



How does N-tier Architecture help you?

How does n-Tier Architecture help you?

1. Better Security

How does n-Tier Architecture help you?

2. Scalability

What is Scalability?

- **Scalability** is the measure of a system's ability to increase or decrease in performance and cost in response to changes in application and system processing demands.

- Enterprises that are growing rapidly should pay special attention to scalability when evaluating hardware and software.

How does n-Tier Architecture help you?

2. Scalability

How does n-Tier Architecture help you?

3. Simple Maintenance

How does n-Tier Architecture help you?

3. Simple Maintenance

How does n-Tier Architecture help you?

4. Easily Enhanced

How does n-Tier Architecture help you?

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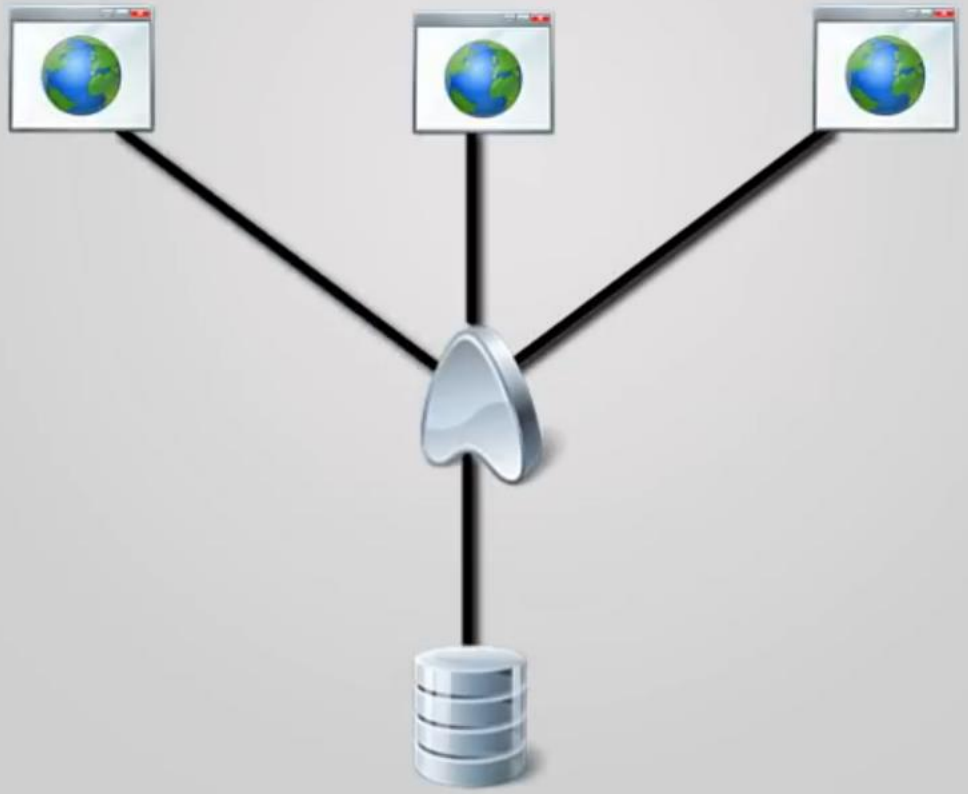
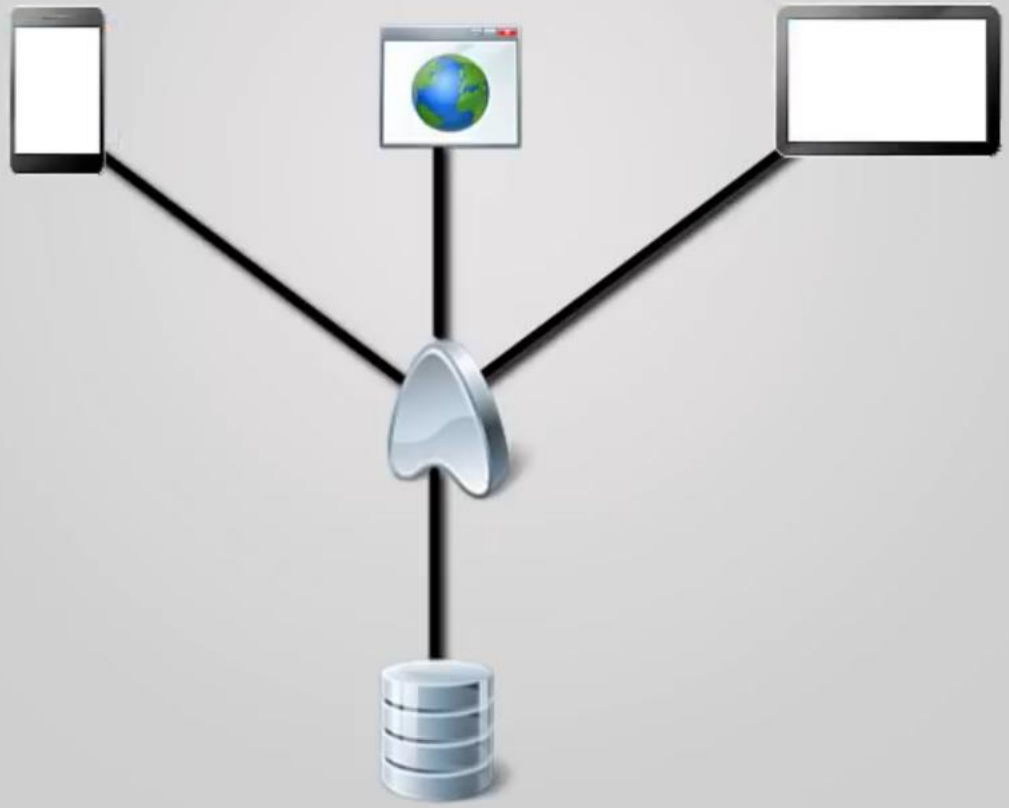
4. Easily Enhanced



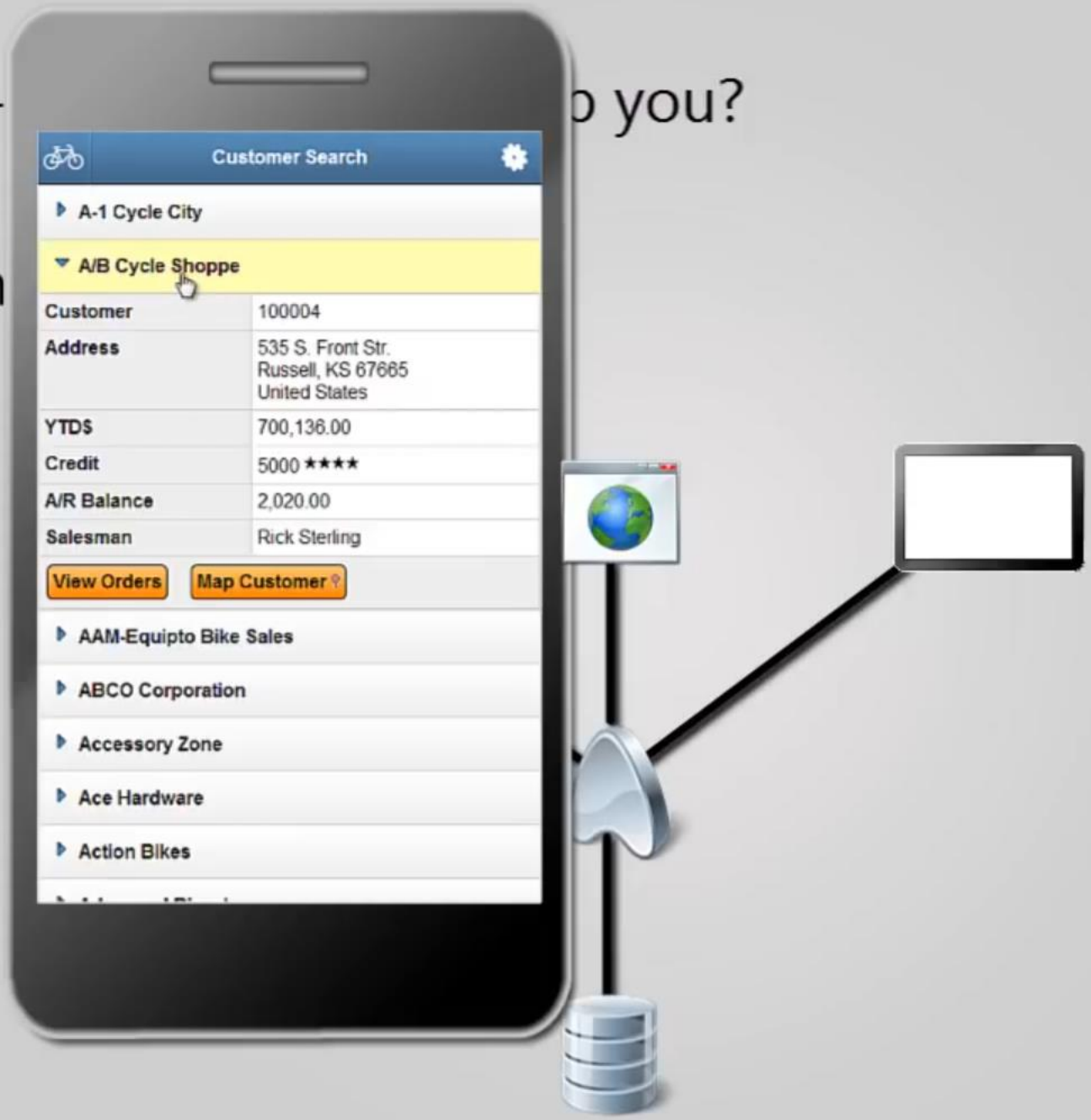
How does n-Tier Architecture help you?

4. Easily Enhanced



How does n- o you?

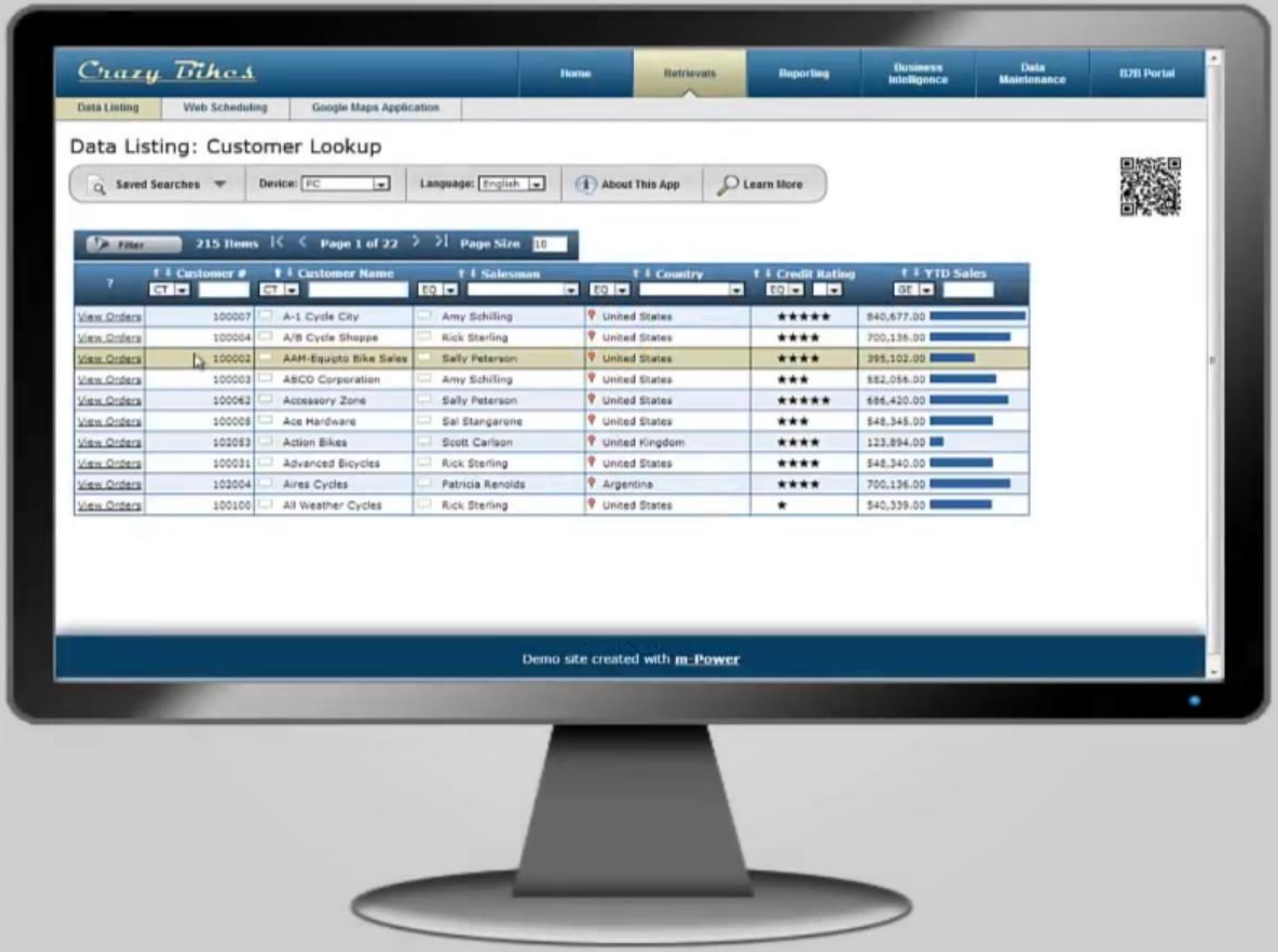
4. Easily En



How does n-Tier Architec

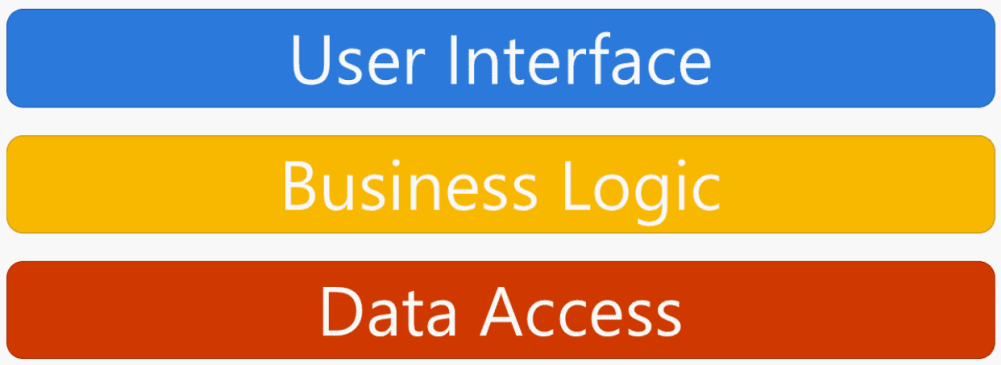
4. Easily Enhanced

How does n-Tier Architecture help you?



N-tier Architecture Benefits:

- More Secure
- Easily Scalable
- Easily Maintained
- Easily Enhanced



Other Benefits Include:

- **More efficient development.** N-tier architecture is very friendly for development, as different teams may work on each tier. This way, you can be sure the design and presentation professionals work on the presentation tier and the database experts work on the data tier.
- **Easy to add new features.** If you want to introduce a new feature, you can add it to the appropriate tier without affecting the other tiers.
- **Easy to reuse.** Because the application is divided into independent tiers, you can easily reuse each tier for other software projects. For instance, if you want to use the same program, but for a different data set, you can just replicate the logic and presentation tiers and then create a new data tier.

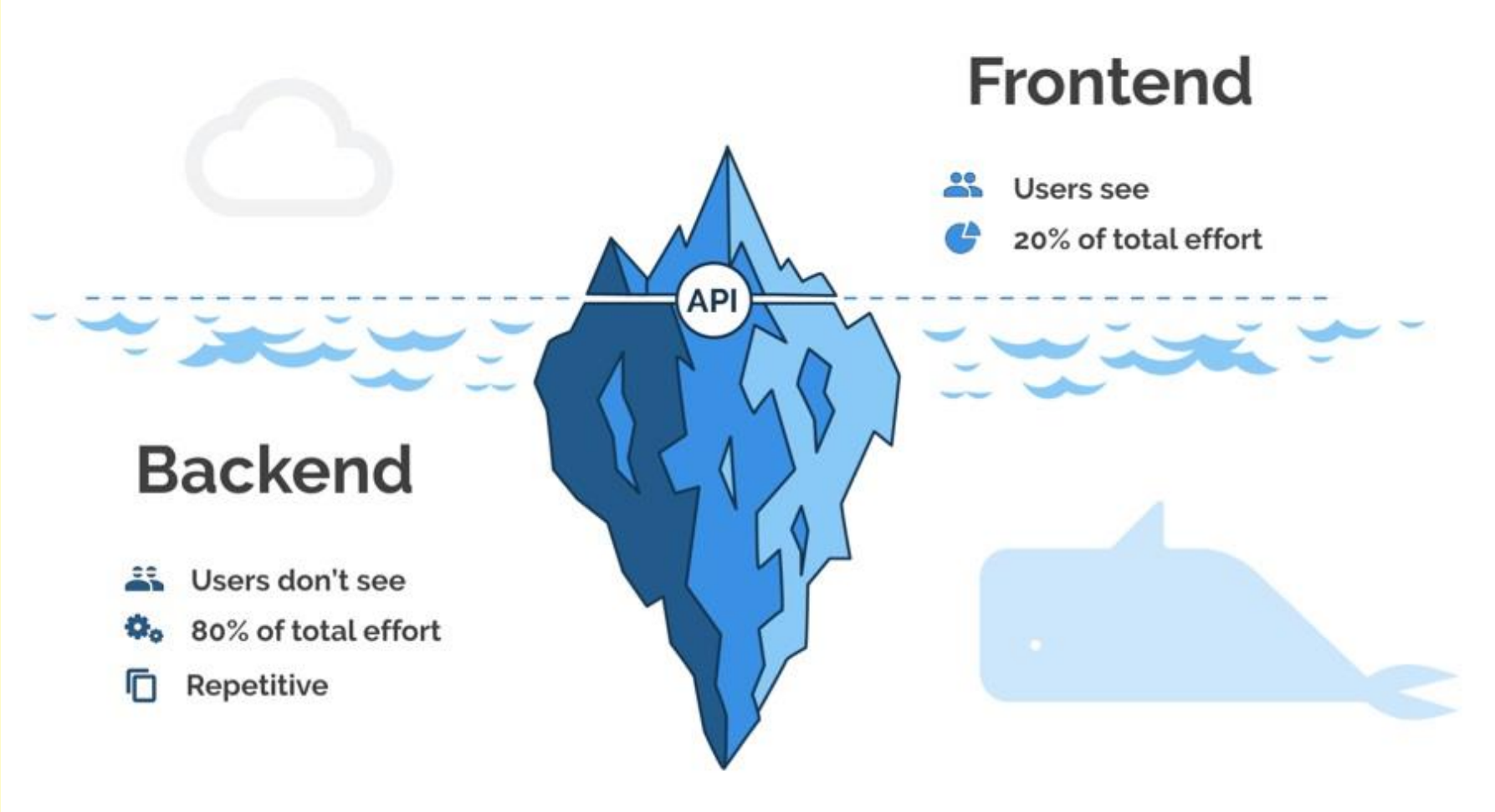
DYNAMIC WEB VS. STATIC WEB

Dynamic Web Vs. Static Web

- **Websites are separated into two different types: static and dynamic.**
- **Static Website** is one that is fixed and displays the same content for every user, usually written exclusively in HTML.

- **Dynamic Website** is one that can display different content and provide user interaction, by making use of advanced programming and databases in addition to HTML. As you can tell, static websites are easier to create, while dynamic websites require more work.

Front-End Vs. Back-End Development



Front-End Vs. Back-End Development

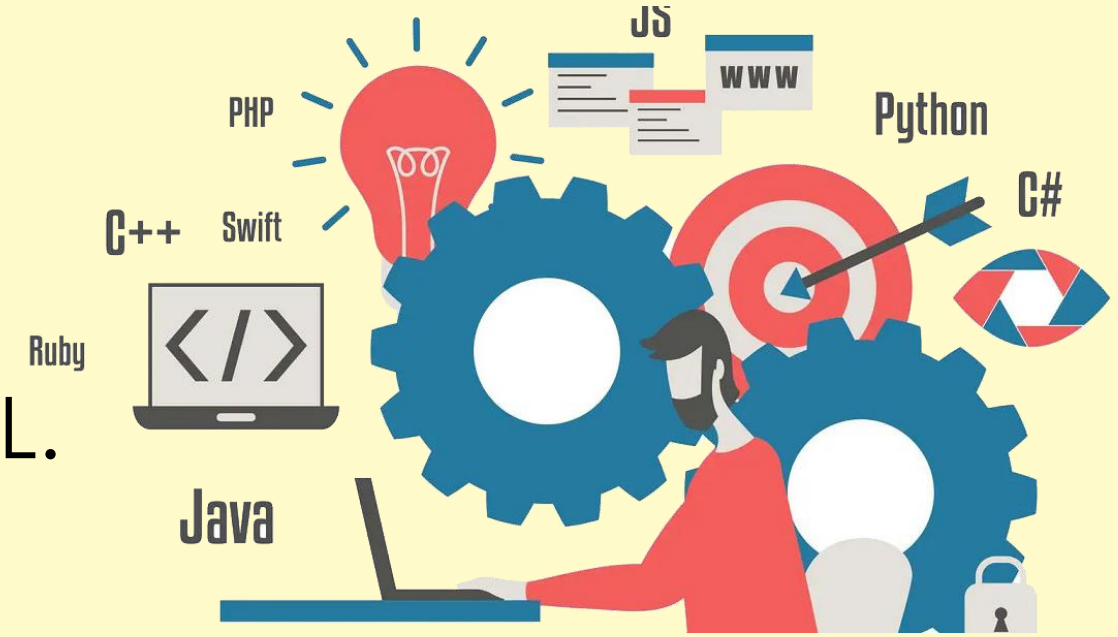
Front-End Development include:

- HTML - Hypertext Markup Language.
- CSS - Cascade Style Sheet.
- JavaScript.

Front-End Vs. Back-End Development

Back-End include:

- PHP and MySQL
- ASP.NET and SQL Server
- Python & SQLite, MySQL.
- JAVA and Oracle, MySQL.



INTRODUCTION TO PHP

What is PHP?

- PHP is a server scripting language, and a powerful tool for making dynamic and interactive Web pages (**PHP code is executed on the server**).
- PHP is a widely-used, free, and efficient alternative to competitors such as Microsoft's ASP.

What is PHP?

- PHP is an acronym for "PHP: **Hypertext Preprocessor**"
- PHP is a widely-used, open source scripting language
- PHP scripts are executed on the server.
- PHP is free to download and use.

What is PHP?

- PHP is an **interpreted language**. The binary that lets you interpret PHP is compiled, but what you write is interpreted.
- That means the utility called php (or on windows php.exe) is compiled.

How do Interpreter and Compiler work?

- The **compiler** creates the program. It will analyze all the language statements to check if they are correct.
- If it comes across as something incorrect, it will give an error message.

How do Interpreter and Compiler work?

- If there are no errors spotted, the compiler will convert the source code into machine code. The compiler links the different code files into programs that can be run such as exe.
- Finally, the program runs.

How do Interpreter and Compiler work?

- In computer science, an **interpreter** is a computer program that directly executes instructions written in a programming or scripting language, without requiring them previously to have been compiled into a machine language program.

How do Interpreter and Compiler work?

- An **interpreter** creates the program. It neither links the files nor generates machine code.
- The source statements are executed line by line while executing the program.

What You Should Already Know?

- HTML
- CSS
- JavaScript

What is a PHP File?

- PHP files can contain text, HTML, CSS, JavaScript, and PHP code.
- PHP code is executed on the server, and the result is returned to the browser as plain HTML.
- PHP files have extension "**.php**"

What can PHP do?

- PHP can generate dynamic page content.
- PHP can create, open, read, write, delete, and close files on the server.
- PHP can collect form data.
- PHP can be used to control user-access.

Why PHP?

- PHP runs on various platforms (Windows, Linux, Unix, Mac OS X, etc.)
- PHP is compatible with almost all servers used today (Apache, IIS, etc.)

Why PHP?

- PHP supports a wide range of databases
- PHP is free. Download it from the official PHP resource: www.php.net
- PHP is easy to learn and runs efficiently on the server side

What Do I Need to start with PHP?

Local Server as:

- **LAMP** – Linux, Apache, MySQL, PHP.
- **MAMP** – Mac, Apache, MySQL, PHP.
- **WAMP** – Windows, Apache, MSQL, PHP.
- **XAMPP** – All OS, Apache, MySQL, PHP and PERL.

What Do I Need to start with PHP?

IDE-Integrated Development Environment:

- Visual Studio Code
- PhpStorm
- NetBeans
- Aptana Studio
- Sublime Text
- Notepad ++

What Do I Need to start with PHP?

- PHP Framework V7or V8.
- XAMPP Server.
- Visual Studio Code.

XAMPP

PHP Syntax

- The default file extension for PHP files is **".php**".
- A PHP script can be placed anywhere in the document.
- A PHP script starts with <?php and ends with ?>:

```
<?php
// PHP code goes here
?>
```

PHP Syntax

The default file extension for PHP files is **".php**".

```
<!DOCTYPE html>
<html>
<body>

<h1>My first PHP page</h1>

<?php
echo "Hello World!";
?>

</body>
</html>
```

PHP Case Sensitivity

- PHP is partially case-sensitive. Knowing what are case sensitive and what is not is very important to avoid syntax errors.
- If you have a function such as count, you can use it as COUNT. It would work properly.

PHP Case Sensitivity

- **The following are case-insensitive in PHP:**
- PHP constructs such as if, if-else, if-elseif, switch, while, do-while, etc.
- Keywords such as true and false.
- User-defined function & class names.

PHP Case Sensitivity

- On the other hand, variables are case-sensitive. e.g., $message and $MESSAGE are different variables.

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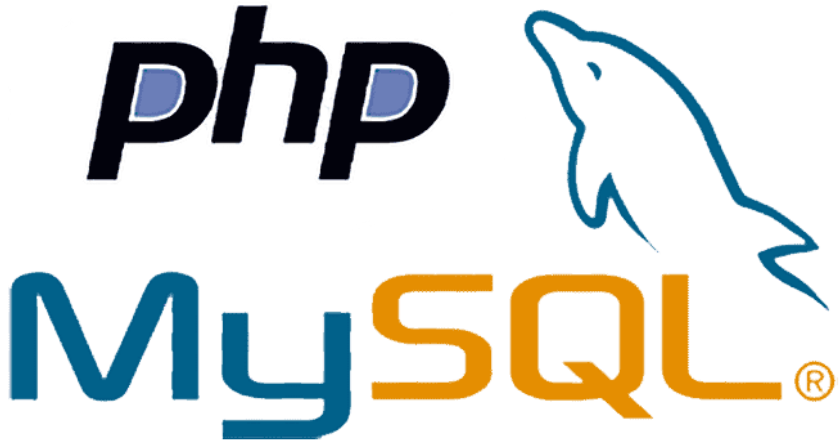

The End.

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