

C vs Java:

Welcome to my comparison of C and Java - two popular programming languages utilized in creating software and applications. We'll break down the key differences and help you navigate the decision-making process.

BY SAYAN GHOSH

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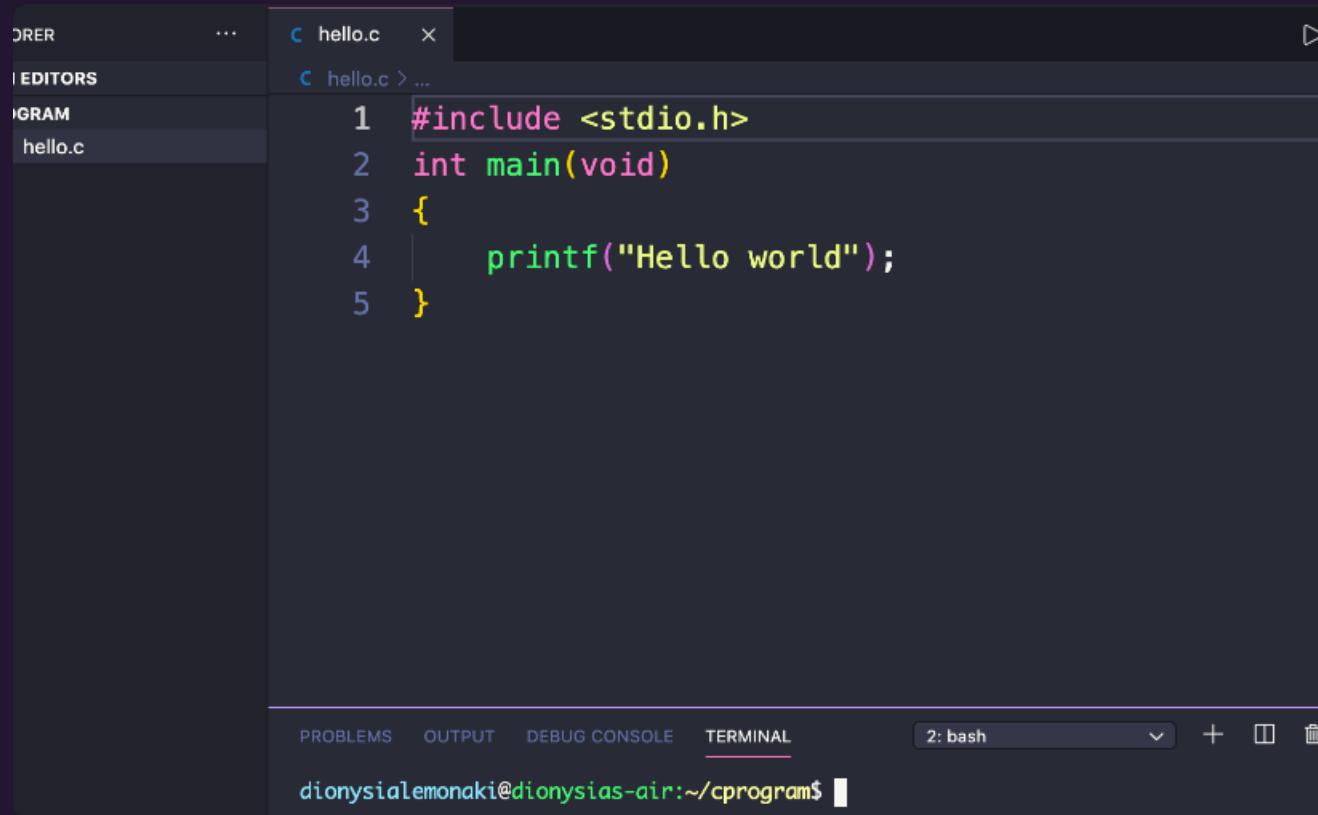
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SUBJECT:-OBJECT ORIENTED PROGRAMMING (JAVA)

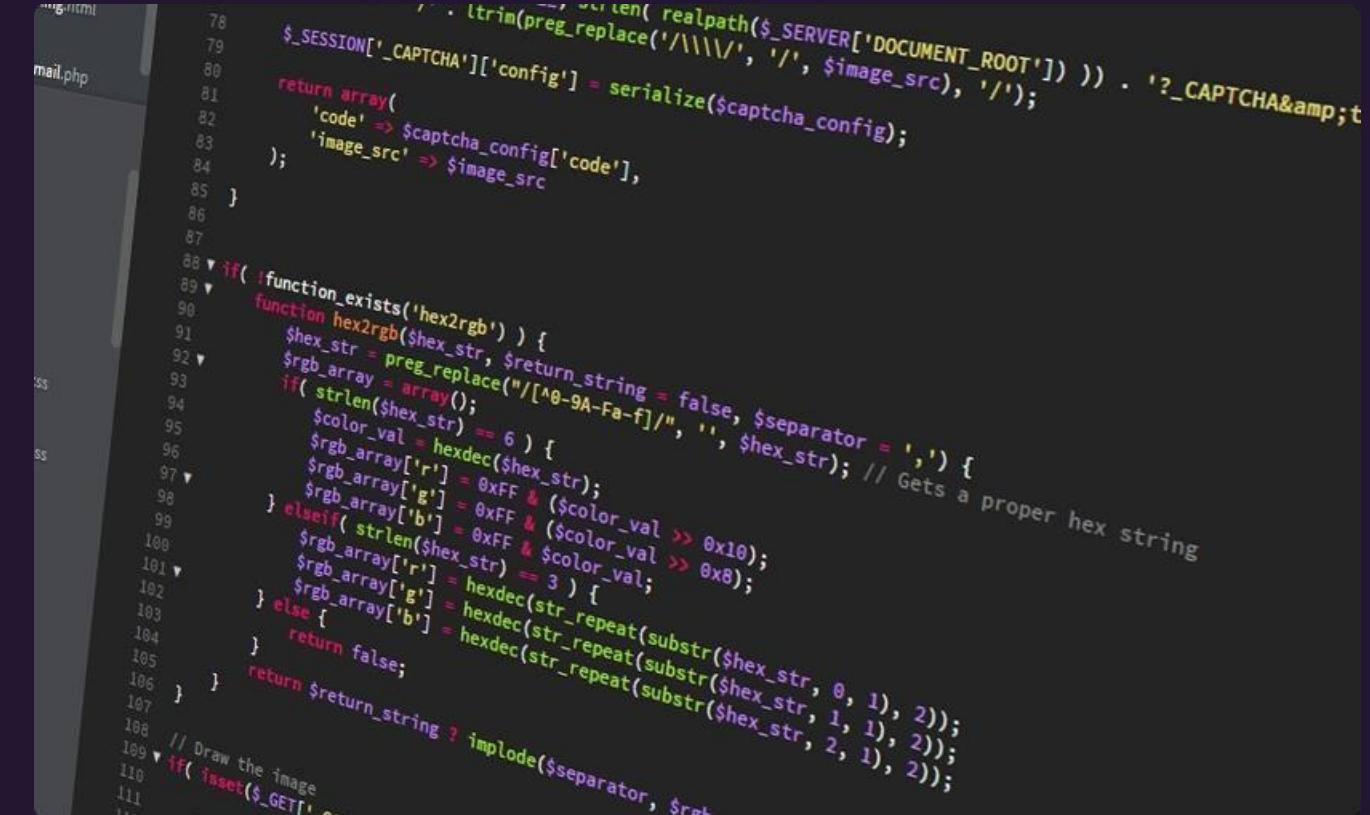
Overview of C and Java



```
#include <stdio.h>
int main(void)
{
    printf("Hello world");
}
```

C Programming Language

Created by Dennis Ritchie, C is a low-level programming language used for creating hardware, operating systems, and applications with specific memory requirements.



```
function hex2rgb($hex_str, $return_string = false, $separator = ',') {
    $hex_str = preg_replace("/[^0-9A-Fa-f]/", '', $hex_str); // Gets a proper hex string
    $rgb_array = array();
    if (strlen($hex_str) == 6) {
        $color_val = hexdec($hex_str);
        $rgb_array['r'] = 0xFF & ($color_val >> 0x10);
        $rgb_array['g'] = 0xFF & ($color_val >> 0x8);
        $rgb_array['b'] = 0xFF & $color_val;
    } elseif (strlen($hex_str) == 3) {
        $rgb_array['r'] = hexdec(str_repeat(substr($hex_str, 0, 1), 2));
        $rgb_array['g'] = hexdec(str_repeat(substr($hex_str, 1, 1), 2));
        $rgb_array['b'] = hexdec(str_repeat(substr($hex_str, 2, 1), 2));
    } else {
        return false;
    }
    return $return_string ? implode($separator, $rgb_array) : $rgb_array;
}

if (!function_exists('hex2rgb')) {
    function hex2rgb($hex_str, $return_string = false, $separator = ',') {
        $hex_str = preg_replace("/[^0-9A-Fa-f]/", '', $hex_str); // Gets a proper hex string
        $rgb_array = array();
        if (strlen($hex_str) == 6) {
            $color_val = hexdec($hex_str);
            $rgb_array['r'] = 0xFF & ($color_val >> 0x10);
            $rgb_array['g'] = 0xFF & ($color_val >> 0x8);
            $rgb_array['b'] = 0xFF & $color_val;
        } elseif (strlen($hex_str) == 3) {
            $rgb_array['r'] = hexdec(str_repeat(substr($hex_str, 0, 1), 2));
            $rgb_array['g'] = hexdec(str_repeat(substr($hex_str, 1, 1), 2));
            $rgb_array['b'] = hexdec(str_repeat(substr($hex_str, 2, 1), 2));
        } else {
            return false;
        }
        return $return_string ? implode($separator, $rgb_array) : $rgb_array;
    }
}
```

Java Programming Language

Developed by James Gosling, Java is an object-oriented language that uses a virtual machine to support cross-platform compatibility and simplify development.

Pros and Cons of C

Efficiency

C runs very close to the machine level, and has minimal runtime. As a result, it is often used in applications where performance is critical.

Portability

C is easy to port to different architectures and operating systems, and can be used to develop software for platforms with limited resources.

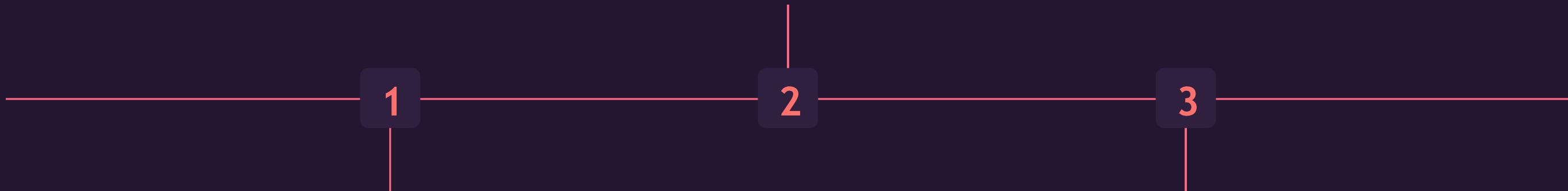
Learning Curve

C exposes the complexities of computer architecture and memory management, requiring a deep understanding of the language, making it less beginner-friendly.

Pros and Cons of Java

Garbage Collection

Java automatically manages memory allocation, freeing developers from manual memory management tasks. However, this feature can lead to slower execution and increased memory usage.



Platform Independence

Java code can run on any platform with Java Virtual Machine support, eliminating the need to re-write applications for each individual platform.

Learning Curve

Java was designed to be more beginner-friendly than C, with a simple syntax that is easier to read and write.

Performance Comparison

Factor	C	Java
Memory Management	Manual	Automatic
Execution Speed	Faster	Slower
Platform Independence	Difficult	Effortless

Conclusion

1

Choose C if:

You require a high-performance programming language that can interface efficiently with hardware and you have the expertise to implement low-level programming functions.

2

Choose Java if:

You want to build software that can be easily ported to multiple platforms, and you value the simplicity and ease of development.

Acknowledgement

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- THANK YOU...