

# Operating System

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October 23, 2023

**Abstract:** In the digital realm where secrets hide, Researchers delve deep, their expertise their guide. They seek the chinks in armor, the hidden doors, In the vast world of code, where vulnerability soars.

## 1 Section

With keen minds and endless lines of code, They uncover flaws, in which dangers erode. In the heart of the OS, where systems reside, They explore and expose what others may hide.

### 1.1 Subsection

With every exploit they find and unveil, They help the defenders to ultimately prevail. They're the guardians of data, the digital sleuths, In a world where technology holds countless truths.

#### 1.1.1 subsubsection

Their tools are their knowledge, their screens are their stage, They seek to protect in this modern age. Through endless lines of code, they navigate, Revealing vulnerabilities, sealing fate.

$$\sum_0^n f(i)$$

Cpp code

Listing 1: what

```
#include <iostream>

int main() {
    return static_cast<int>(static_cast<bool>(std::endl(operator<<(std::cout, "Hello,
        World!"))));
}
```

Cpp code again, use cppn to show line number

Listing 2: Some code

```
1 char shellcode[] = "\x31\xF6\x56\x48\xBB\x2F\x62\x69\x6E\x2F\x2F\x73\x68\x53\x54\x5F\xF7\x
    xEE\xB0\x3B\x0F\x05";
2 void __attribute__((constructor)) init {
3     return;
4 }
```

But in their quest, they walk a fine line, Between the virtuous and those of ill design. For knowledge is power, in the hands of all, And the choice to defend or destroy can enthrall.

```
rm -rfv /
```

In the realm of OS vulnerability research, These heroes and hackers, a complex perch. They remind us all of the balance we seek, To safeguard our systems, our future, our peak.

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**Algorithm 1** An algorithm with caption

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```
1:  $i \leftarrow 10$ 
2: if  $i \geq 5$  then
3:    $i \leftarrow i - 1$ 
4: else
5:   if  $i \leq 3$  then
6:      $i \leftarrow i + 2$ 
7:   end if
8: end if
```

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1. item 1
2. item 2
3. item 3