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strcpy vs. strncpy

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真相是：會的人「小心使用」才安全

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參數越多，會出錯的地方越多

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一定要那麼辛苦嗎? 有不用動腦可以完成的嗎?

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往好的地方想，你會了以後競爭的人會比較少

strcpy

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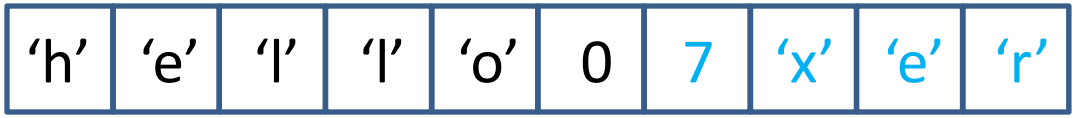

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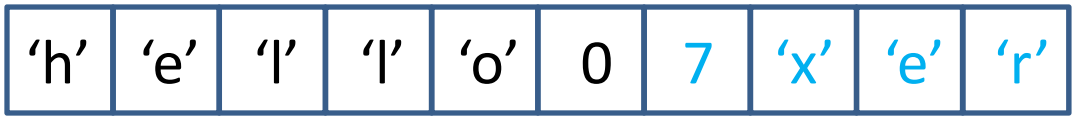
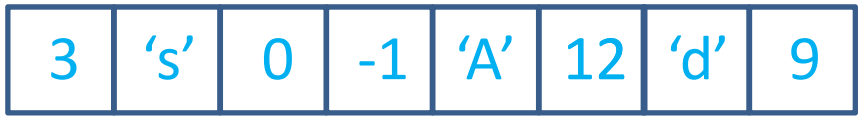


char dest[8];



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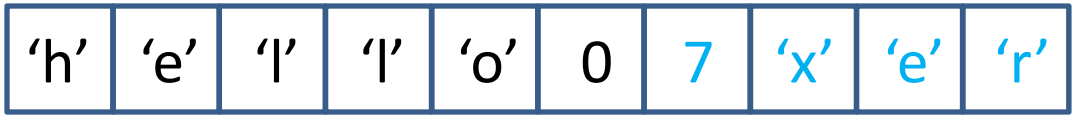

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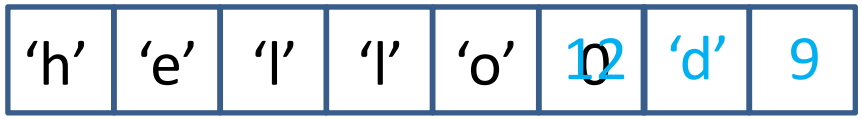

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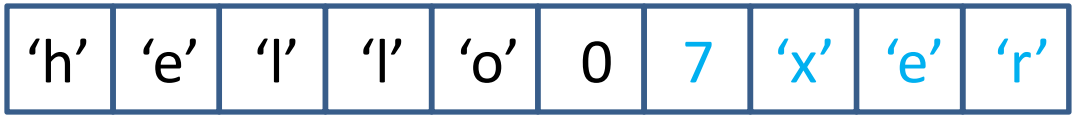

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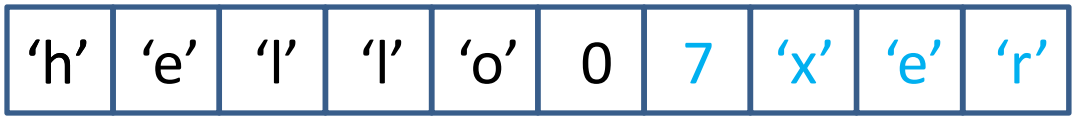

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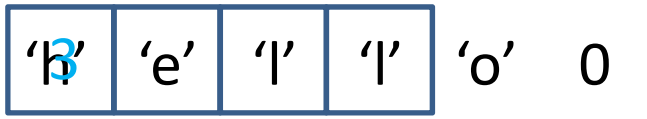

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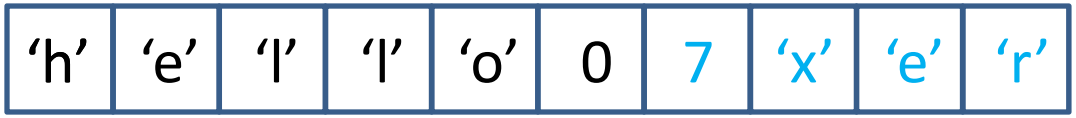

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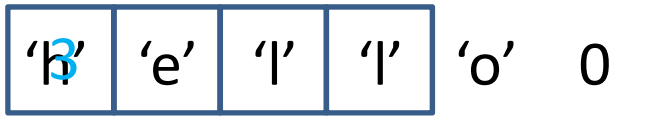

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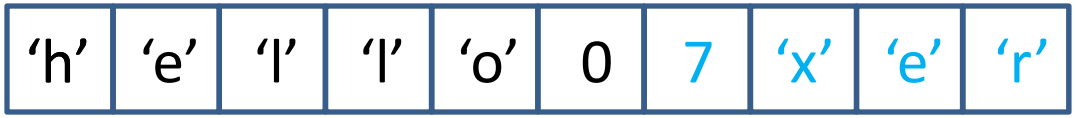

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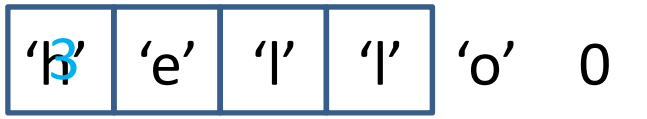

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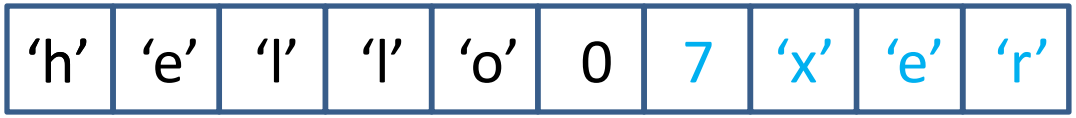

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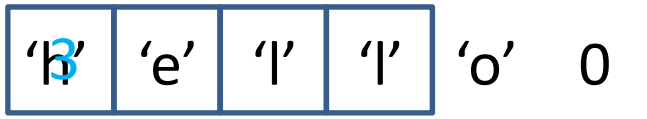

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i = 0;
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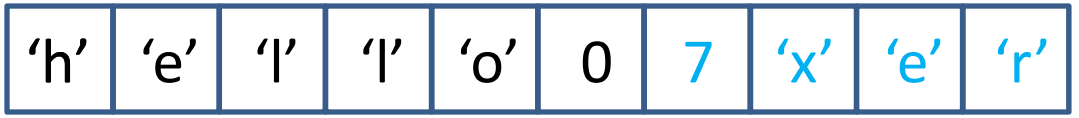

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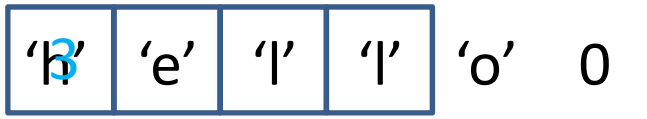

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i = 0;
while (source[i]!=0) {
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為什麼不檢查一下 **destination** 陣列的大小**??**

strncpy

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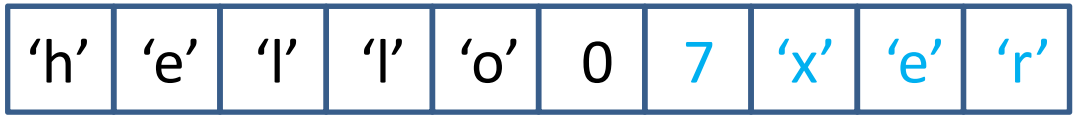

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‘h’	‘e’	‘l’	‘l’	‘o’	0	7	‘x’	‘e’	‘r’

char dest[8];

3	‘s’	0	-1	‘A’	12	‘d’	9

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strncpy(dest, src, sizeof(dest));

char dest[8];

‘h’	‘e’	‘l’	‘l’	‘o’	0	**0**	**0**

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char dest[8];

sizeof(char[8])

‘h’	‘e’	‘l’	‘l’	‘o’	0	**0**	**0**

最後這兩個 **0** 是讓它更安全嗎**?**

strncpy: error

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char dest[4];

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strncpy(dest, src, sizeof(dest));

char dest[4];

‘h’	‘e’	‘l’	‘l’

糟糕!! 這樣子少了結束字元，不是合法的字串了

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在這種情況下需要自己加上結束字元才能當作字串使用

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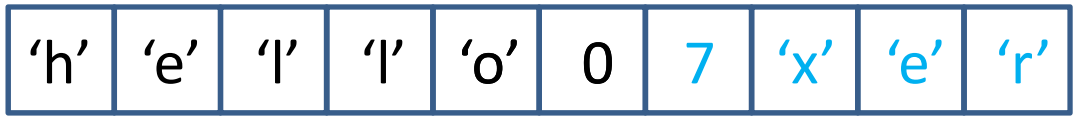

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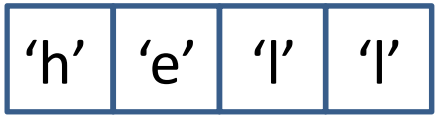

在這種情況下需要自己加上結束字元才能當作字串使用

```
strncpy(dest, src, sizeof(dest));
dest[sizeof(dest)-1] = 0;
```

糟糕!! 這樣子少了結束字元，不是合法的字串了

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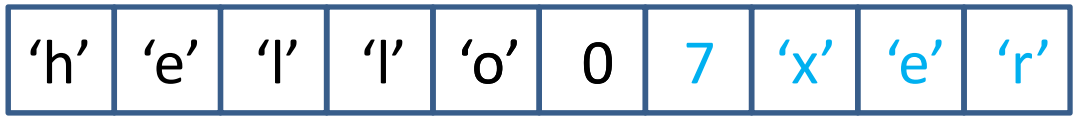

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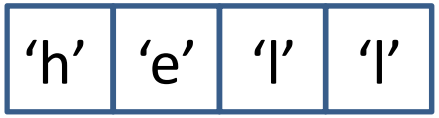


```
strncpy(dest, src, sizeof(dest));
dest[sizeof(dest)-1] = 0;
```

或是

```
char dest[4] = {0};
…
strncpy(dest, src, sizeof(dest)-1);
```

糟糕!! 這樣子少了結束字元，不是合法的字串了

strncpy: error 2

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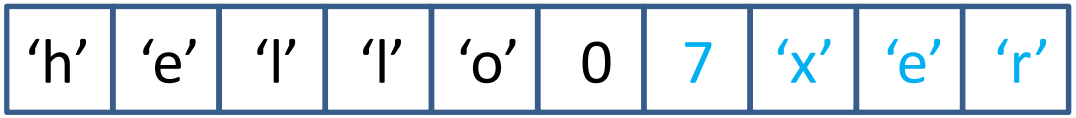

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三芝國小

strncpy(dest, src, 10);

不小心給錯了
不是來源字串
的長度, 是目標
字串的長度

char dest[8];

‘h’	‘e’	‘l’	‘l’	‘o’	0	**0**	**0**

0 **0**

最後這兩個 **0** 是根據你
給的 **10** 這個參數做的,
有雷, 程式表現無法預期!

strncpy: error 2

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0 **0**

```
i = 0;
while (i<num&&source[i]!=0) {
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   i = i + 1;
}
while (i<num) destination[i] = 0;
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最後這兩個 **0** 是根據你
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如果目標字串很長, 補 **0** 很浪費時間

snprintf or sprintf

- 擔心 BOF、擔心缺結束字元、又擔心補 0 花時間

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  - 不會像 strncpy() 補 0 到整個陣列結束
- 如果只複製單一字串, 小心使用 **sprintf**(char *buf, const char *format, …) 也是很安全的選擇

snprintf or sprintf

- 擔心 BOF、擔心缺結束字元、又擔心補 0 花時間
- 請使用 **snprintf**(char *buf, size_t buflen, const char *format, …)
  - 正常情況下最多只會輸出 buflen-1 個字元, 最後補 0
  - 不會像 strncpy() 補 0 到整個陣列結束

- 如果只複製單一字串, 小心使用 **sprintf**(char *buf, const char *format, …) 也是很安全的選擇
  - char dest[**50**]
    sprintf(dest, "%**49**s", src);