

Lab.07 Pointer & C String

JACK LIN 2017.4.12

Local vs.. PDOGS

編譯參數 -O2 -std=c++11

Initial value ...etc

Pointer

Address vs. value

Function Call : Call By Value/ Reference

Dynamic Array

Pointer Operations

Pointer

* and &

Address / identifier / Value

Pointer Initial

Null pointers

- What will happen?

```
int* ptr;  
cout << *ptr; // ?
```

- If we dereference a pointers of unknown value, the outcome is unpredictable.
 - The pointers points to **somewhere**... And we do not know where it is!
- A pointer **pointing to nothing** should be assigned **nullptr, NULL, or 0**.
 - Dereferencing a null pointer shutdowns the program (a run-time error).

```
int* p2 = nullptr;  
cout << "value of p2 = " << p2 << "\n";  
cout << "address of p2 = " << &p2 << "\n";  
cout << "the variable pointed by p2 = " << *p2 << "\n";
```

Function Call

Call By Value

Call By Reference

Call By Pointer

Dynamic Array

One Dimension Array

data type* array name=new data type[size];

Two Dimension Array

data type** array name=new data type*[size];

Address Differences : Operator -

Use “ - ” to find 間隔 (Notice No matter the type is !)

You cannot use “ + ” with address and address

C String

Character Array ?

- End with \0

Pointer ?

cin vs. getline

atoi and atof

C String library

strstr()

strchr()

strlen()

Example : Pointer of strchr and Character String

```
char a[100] = "abcd efg" char * b
```

```
a = strchr(a, ' ') + 1
```

```
print a ? => Syntax Error
```

```
b = strchr(a, ' ') + 1
```

```
print b ?
```

How to delete a element in Array?

Delete a character in string?

Practice: Delete Dirty Decoding

Delete &\$%^* out of string

Input:

Appl\$%e

Ora#\$%#ng

A\$%*&pple

Output:

Apple

Orange

Apple

Practice: Period of String

Input : String

Output : Minimum period length of String

Input:

ababab

abaccc

Output:

2

6