

C++ in depth

Static



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Agenda

- ① static Keyword
- ② static local variable
- ③ class variables or static member variables
- ④ static member functions

Static

In C++, Static Keyword can be used in the following places :

- static local variables → C/C++
- static Member variables → C++
- static Member Functions → C++

Static local variable

```
void f1()
```

```
{
```

int x; ← local variable

static int y; ← static local variable

```
}
```

Default value

local variable → Garbage

static local variable → 0

Life: Life of local variable is limited to the execution of function.

Life of static local variable is equal to the life of program.

Scope:

Scope of local variable and static local variable is limited to the function block

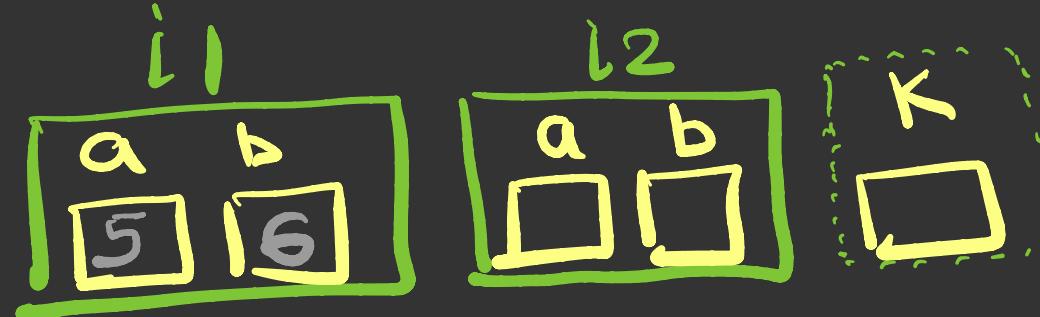
Types of variables

C
++

- ① Global variable
- ② Local variable
- ③ static Local variable

C++

- ① Global Variable
- ② Local variable
- ③ static local variable
- ④ Instance member variable
- ⑤ static member variable



item $i_1, i_2;$
 $i_1.a = 5;$
 $i_1.a = 6;$
`cout << i2.a;`

Static Member Variables

Class Item

{

public :

int a,b; // instance member variables

static int K; // static member variable

}

int Item:: K;

int main()

{

Item i1,i2;

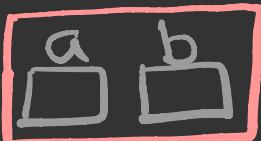
i2.a=4;

cout << i1.a;

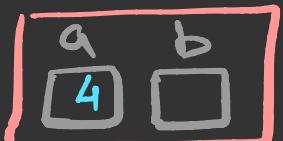
~~i2.K=5;~~

~~cout << i1.K;~~

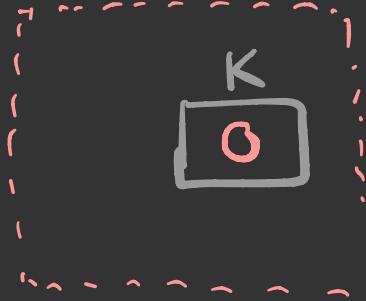
i1



i2



Item



Item :: K = 5;

cout << Item :: K;

Static member variable needs to define outside the class body

datatype className :: staticVariable ;

There is only one copy of static member variable in the memory for entire class

static member variable is not related to any specific object of class, but object can access static member variable using dot operator

static member variable == class variable

How to access public static
member variables?

- ① `objectName. staticMemberVariable`
- * ② `className :: staticMemberVariable`

How to access private static
member variables?

by making member function

- ① `objectName. instanceMethod()`
`objectName. staticMethod()`
- ② `className :: staticMethod()`

Static Member Functions

static member function are qualified
with the keyword static

non member function can never be static

static member function can only access
static members of the class

member functions in class not
performing object specific job, should
be static member function

class → Account

accountNo

balance

showBalance()

roi

showRoi()

calculateInterest()