

# Namespace (1A)

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# Local Scope

Local scope

within a function  
within a block

```
void func( ... ) {  
    int r;  
  
    {  
        int r;  
    }  
  
}
```

# Class Scope

Class scope

within a class  
including definitions in an  
implementation file

Class scope operator  
*ClassName::*

```
class Ccircle {  
public:  
    int r;  
  
    Ccircle ()        { r = 1; }  
    Ccircle (int x)   { r = x; }  
  
    void    setR (int x) { r = x; }  
    int     getR ()   { return r; }  
    double area () ;  
};
```

# File Scope

File scope  
(Global scope)

A declaration outside of all  
functions and classes

File scope operator  
::

```
int r;  
  
void func( ... ) {  
    int r;  
  
    r = 3.0;  
    ::r = 4.0;  
}  
  
class Ccircle {  
    int r;  
  
};
```

x.cpp

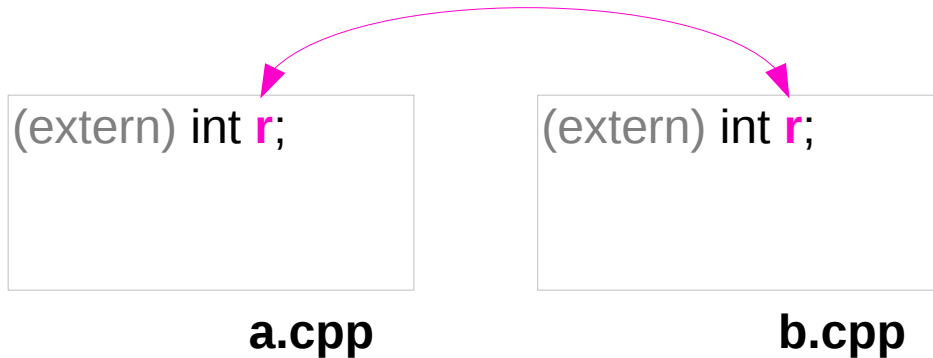
# Namespace

```
namespace myspc {  
    int r;  
}  
  
using myspc::r;  
using namespace myspc;
```

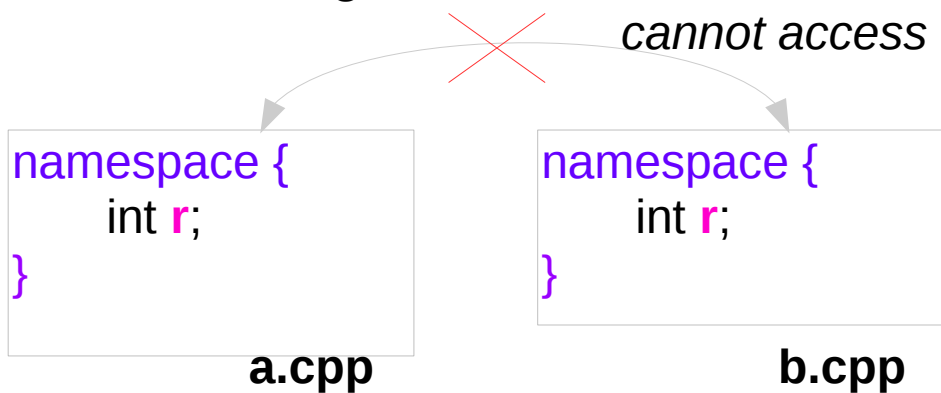
# Internal & External Linkage

## External Linkage

*a global variable shared by two source codes*



## Internal Linkage



1. *unnamed namespace*
2. *static int r;*

# Class Structure

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## References

- [1] W Savitch, "Absolute C++"
- [2] P.S. Wang, "Standard C++ with objected-oriented programming"
- [3] <http://www.cplusplus.com>