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Modern C++

2. Compiling and linking

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Compilation and linking

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```
// A.cpp -> A.obj
#include <iostream>
using std::cout;
using std::endl;

int x1;
int x2 = 1;
extern int x3;
extern int x4;
extern const int x5;

int f() {
  cout << x1 << endl;  // ???
  cout << x2 << endl;  // ???
  cout << x3 << endl;  // ???
  cout << x4 << endl;  // ???
  cout << x5 << endl;  // ???
  return 5;
}
```

```
// B.cpp -> B.obj
float x1;
int x3 = 2;
int x4;
extern const int x5 = 1;

int f();

int main() {
  x1 = f();
}
```

Namespace

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```
// A.cpp -> A.obj
#include <iostream>
using std::cout;
using std::endl;

namespace A {
int x1;
int x2 = 1;
extern int x3;
extern int x4;
extern const int x5;

int f() {
  cout << x1 << endl;  // ???
  cout << x2 << endl;  // ???
  cout << x3 << endl;  // ???
  cout << x4 << endl;  // ???
  cout << x5 << endl;  // ???
  return 5;
}
}  // namespace A
```

const is visible outside module with **extern**

```
// B.cpp -> B.obj
float x1;

namespace A {
int x3 = 2;
int x4;
extern const int x5 = 1;

int f();
}  // namespace A

int main() {
  x1 = A::f();
}
```

Static

```
// A.cpp -> A.obj
#include <iostream>
using std::cout;
using std::endl;

static int x1;
int x2 = 1;
extern int x3;
extern int x4;
extern const int x5;

int f() {
  cout << x1 << endl;  // 0
  cout << x2 << endl;  // 1
  cout << x3 << endl;  // 2
  cout << x4 << endl;  // 0
  cout << x5 << endl;  // 1
  return 5;
}
```

```
// B.cpp -> B.obj
float x1;
int x3 = 2;
int x4;
extern const int x5 = 1;

int f();

int main() {
  x1 = f();
}
```