# Семинар 3 (наследование)

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# Типы наследования

## public, protected, private – доступ к членам

```
1  class A
2  {
3  public:
4      int x;
5  protected:
6      int y;
7  private:
8      int z;
9  };
10
11 class B : public A
12 {
13     // x is public
14     // y is protected
15     // z is not accessible from B
16 };
17
18 class C : protected A
19 {
20     // x is protected
21     // y is protected
22     // z is not accessible from C
23 };
```

# Типы наследования

## public, protected, private – информация о наследовании

```
class A {
public:
  int a;
};

class B : public A {};

class C : protected A {
public:
  void f() {};
};

class D : private A {
public:
  void g() {};
};
```

## Использование

```
B b1;
C c1;
D d1;
A& a1 = b1; // OK, everyone knows of inheritance
A& a2 = c1; // ERROR, it's known to C and derived of C
```

# Типы наследования

## public, protected, private – информация о наследовании

```
1  class A {
2  public: void f() { cout << "A"; }
3  };
4  class C : protected A {
5  public: void f() { cout << "C"; A::f(); }
6  };
7  class D : private A {
8  public: void f() { cout << "D"; A::f(); }
9  };
10 class E : public D {
11 public:
12   void f() {
13     cout << "E";
14     A::f(); // ERROR: E does not know of A
15   }
16 };
17 class F : public C {
18 public:
19   void f() {
20     cout << "F";
21     A::f(); // OK
22   }
23 };
```