Programming Paradigms

Names, Scopes, and Bindings (Part 4)

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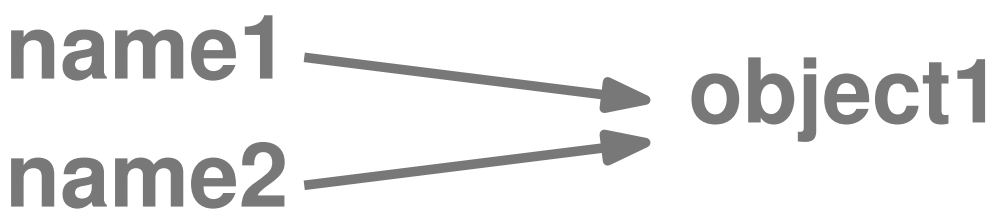
Overview

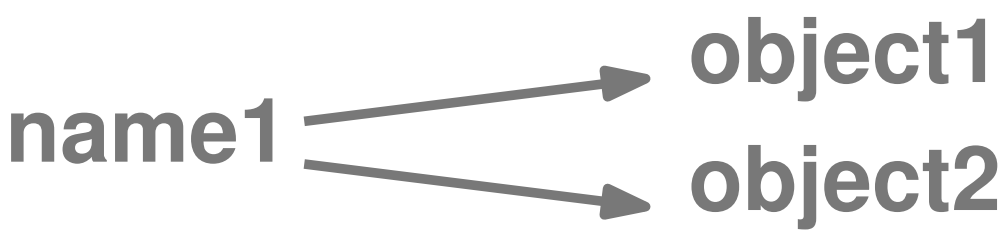
- Object lifetime and storage management
- Scopes
- Aliasing and overloading 
- Binding of referencing environments

Aliasing and Overloading

Aliasing: Two more more names refer to the same object



Overloading: A name refers to two more objects



Aliasing: Example

```
#include <stdio.h>

void half(double& a)
{ // argument passed by reference
    a = a / 2;
}


int main( int argc, const char* argv[] )
{
    double n = 5.0;
    double *p = &n; // pointer to value stored in n

    half(n);
    half(*p);

    printf("%f\n", n);
}
```

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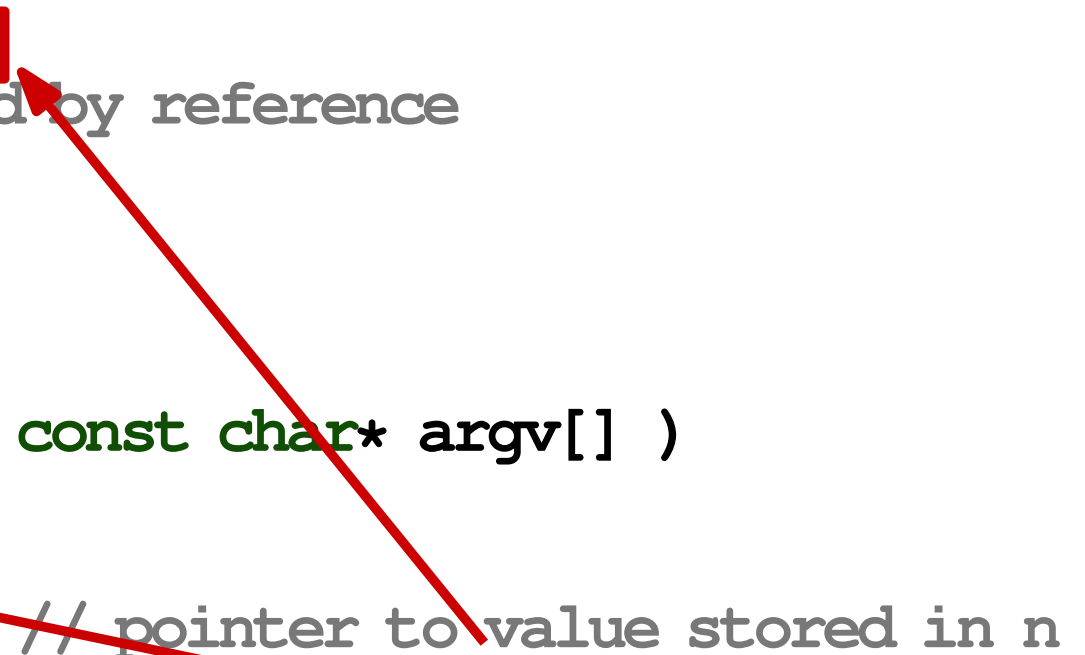

Result: 1.250000

Overloading: Example

```
class Overloading{
    void foo() {}
    void foo(int n) {}
    void foo(String s) {}

    public static void main(String[] args) {
        Overloading o = new Overloading();
        o.foo(...);
    }
}
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Three methods, all with name "foo"

Resolution of name depends on arguments