Super Methods
Calling up the Evolutionary Tree

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What is a Super Method?

• Look! Up in the sky! It’s a bird! It’s a ….
• OOP languages provide a way of calling overwritten super class methods.
• ‘Super Class Method’ = ‘Super Method.’
• In Java, the syntax is:
  – super.foo()
Motivation

• Super methods allow code reuse.
• Provides a way of accessing parent data.
• It was sitting around half completed.
How is it done?

- Supers may only be called from the Impls.
- Every binding is different.
- The IOR already has super tables and data.
- An IOR function gives us the vtable for just the first super class.
- We call on that vtable with the current object.
- We only generate OVERWRITTEN methods.
How is it done? (example)

Class C inherits from B, which inherits from A.

A defines method a, B defines method b.

C defines method c, and overwrites method a.
How to call supers in C

- If we want to call super.a() from C_Impl.c (as shown in our example) we would:
- Prefix ‘super_’ to the super method:

```c
char* impl_C_a(C self) {
/* DO-NOT-DELETE splicer.begin(C.a) */
    char* ret = super_a(self);
    return ret;
/* DO-NOT-DELETE splicer.end(C.a) */
```
How to call supers in Cxx/UCxx

- Prefix ‘super.’ to the super method:

```cpp
::std::string C_impl::a () throw () {
    // DO-NOT-DELETE splicer.begin(C.a)
    ::std::string ret = super.a();
    return ret;
    // DO-NOT-DELETE splicer.end(C.a)
}
```
How to call supers in Fortran 77

Fully qualify the super method with: class_super_name_f()

subroutine C_a_fi(self, retval)
    implicit none
    in C self
    integer*8 self
    out string retval
    character*(*) retval

C   DO-NOT-DELETE splicer.begin(C.a)
call C_super_a_f(self, retval)
C   DO-NOT-DELETE splicer.end(C.a)
end
How to call supers in Fortran 90

- Prefix ‘super_’ to the super method:

```fortran
recursive subroutine C_a_mi(self, retval)
  use C
  use C_impl
  implicit none
  type(C_t) :: self ! in
  character (len=*) :: retval ! out

  ! DO-NOT-DELETE splicer.begin(C.a)
  call super_a(self, retval)
  ! DO-NOT-DELETE splicer.end(C.a)
end subroutine C_a_mi
```
How to call supers in Java

- Prefix ‘super_’ to the super method:

```java
public java.lang.String a_Impl ()
{
    // DO-NOT-DELETE splicer.begin(C.a)
    java.lang.String ret = super_a();
    return ret;
    // DO-NOT-DELETE splicer.end(C.a)
}
```
Conclusion

- Supers should ease working with Babel when Impls contain data.
- Make Babel more OOP!
- Unfortunately, Python does not yet work. (delayed)