Method Dispatch in Oforth

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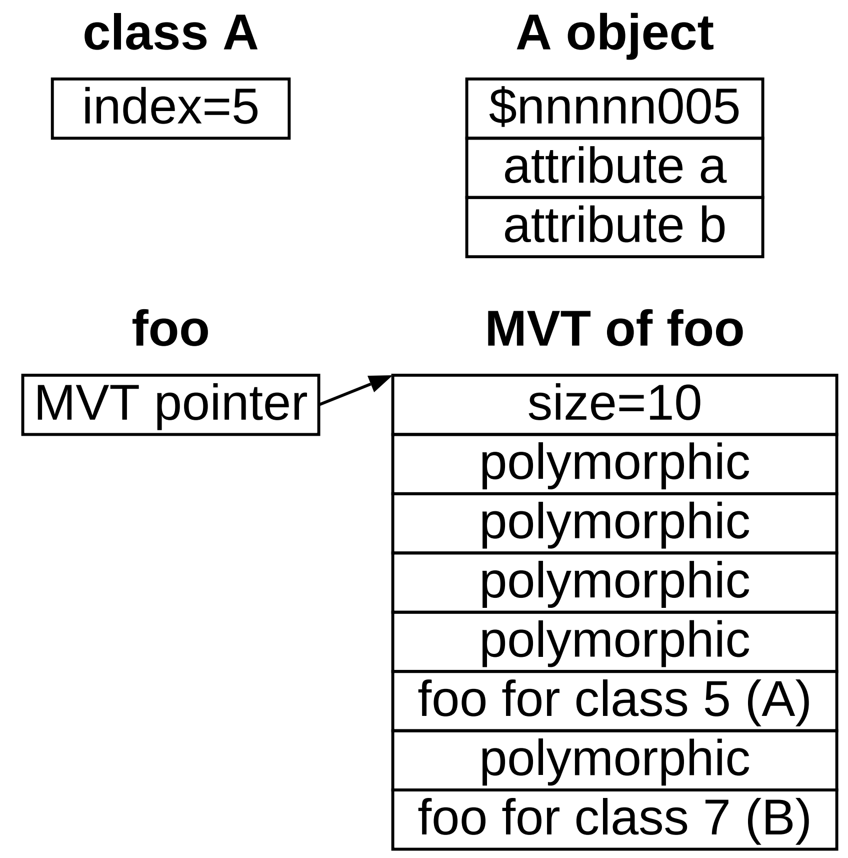
Methods and classes in Oforth

```
Object Class new: A
A Class new: A1
A1 method: foo
     "Foo for A1 :" . self . ;
Object Class new: B
B method: foo
     "Foo for B :" . self . ;
A method: bar
     "Bar for A :" . self . ;
A virtual: foo2
     "to be redefined" abort ;
A1 method: foo2
       "Redefined: " . self . ;
A1 new foo
B new foo
A new dup bar foo2
A1 new dup bar foo2
```

- Duck typing
  Send any message to any object
- Classes are never closed
- Dispatch matrix grows
  in both directions
- `virtual:` can be overridden
  `method:` cannot

Method dispatch

Method virtual table (MVT)
One per method selector
class index used for access



```
test $1, TOS
jne LcallMethodInteger
test TOS, TOS
je LcallMethodNull

movl (TOS), r0
andl 0x00000FFF, r0

cmpl IDClass, r0
je LcallMethodClass

movl virtualTable(r1), r2

cmp (r2),r0
jl reallocMVT

movl (r2, r0, 4), r3
jmp *r3
```

MVT initialization

- initially 0 slots

- grows on method call

- new slots initially `polymorphic`

- `polymorphic` looks up method
  linear search of methods per class and all superclasses
  stores result in MVT

Optimization

- `self` calls to `method:`s

- Method calls to literal objects

- `Object method:`s