DHCP Enjoyers

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Compiler Construction
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Project Context

Dynamic Lang

object types are not specified and can change while program execution

the language assumes **interpretation**

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C++ Language

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Personal parser

hand-written parser

If you want a thing done well, do it yourself :)

Project Context

Small tests of the key functionality

Large tests of complex algorithms

Incorrect tests to identify errors

```
var x := 5
print x
```

```
var y := 10
y := "hello"
print y
```

```
var t := {x:=1}
t := t + {y:=2}
print t.x, t.y
```

```
for i in 1..3 loop
    print i
end
```

```
var x := 3
if x < 10 then
    print "small"
else
    print "big"
end
```

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```
// fibonacci
var seq := [1, 1], i
for i in 3 .. 100 loop
    seq := seq + [seq[i - 1] + seq[i - 2]]
end
for i in seq loop print i; end


// long arithmetic: 100!
var N := 100
var res := 1, i
for i in 1 .. N
loop res := res * i
end
print N, "! = ", res
```

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Incorrect tests to identify errors

```
// bad semicolons
var i
for i in 1 .. 10; loop print i; end
//the first ';' is illegal - syntax error


//scope
var i
for i in 0 .. 99 loop
    var j
    for j in 0 .. i loop end
end
print j // error: undefined 'j'
```