

```

1 local b4={}; for k,_ in pairs(_ENV) do b4[k]=k end
2 local class = require"class"
3
4 local Obj=class("Obj")
5 function Obj:__tostring()
6   local s,sep,tmp,v="", "", {}
7   for k,_ in pairs(self) do
8     if tostring(k):sub(1,1) ~= "_" then tmp[1+#tmp]= k end end
9   table.sort(tmp)
10  for _,k in pairs(tmp) do
11    v = self[k]
12    s = s .. sep .. string.format(":%s%s",k,v)
13  sep=" " end
14  return (self._is or "").."{"..s.."}" end
15 ---
16 --- C O |
17
18 local Col = class("Col", Obj)
19 function Col:new(at,name)
20   self.n = 0
21   self.at = at or 0
22   self.name = name or "" end
23
24 function Col:adds(t)
25   for _,v in pairs(t) do self:add(v) end; return self end
26
27 function Col:add(x)
28   if x ~= "?" then self.n = self.n + 1; self:add1(x) end
29   return x end
30 ---
31 --- i | | i |
32
33 local Num = class("Num", Col)
34 function Num:new(at,name)
35   self:super(at,name)
36   self.w = self.name:find"$" and -1 or 1
37   self.mu,self.sd,self.lo,self.hi = 0,0,math.huge,-math.huge end
38
39 function Num:add1(x)
40   self.hi = math.max(x, self.hi)
41   self.lo = math.min(x, self.lo)
42   self.mu = self.mu + (x - self.mu)/self.n end
43 ---
44 --- > y i |
45 ---
46
47 local Sym = class("Sym", Col)
48 function Sym:new(at,name)
49   self:super(at,name)
50   self._all = {}
51   self.mode,self.most = nil,0 end
52
53 function Sym:add1(x)
54   self._all[x] = (self._all[x] or 0) + 1
55   if self._all[x] > self.most then
56     self.most, self.mode = self._all[x], x end end
57
58 print(Num(23,"thing"):adds{100,200,300})
59 print(Sym(23,"thing"):adds{"a","a","b"})
60 for k,v in pairs(_ENV) do if not b4[k] then print("?",k,type(v)) end end

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