

```

1 local R=require
2 local the,_, ako, NB = R"the",R"lib",R"ako", R"learn101"
3 local push,items,collect = _.push, _.items, _.collect
4
5 return function(data)
6   local tmp,xnums = {}
7   local function go(c,x, col)
8     if x ~= "?" then
9       col = xnums[c]
10      if col then x=(x - col.lo) // ((col.hi - col.lo+1E-32) / the.bins) end end
11      return x end
12
13   local function xnum(c,name)
14     if ako.xnum(name) then return {lo=1E32, hi=-1E32} end end
15
16   local function train(c,x, col)
17     col = xnums[c]
18     if col and x ~= "?" then
19       col.hi = math.max(x, col.hi)
20       col.lo = math.min(x, col.lo) end
21     return x end
22
23   print("dat",data)
24   for row in items(data) do
25     push(tmp, row)
26     if xnums then collect(row, train)
27   else xnums = collect(row,xnum) end end
28   for j=2,#tmp do tmp[j] = collect(tmp[j], go) end
29   return NB(tmp) end

```