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1  ==
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8  local b4={}; for k,_ in pairs(_ENV) do b4[k]=k end
9  local help= {}
10 TINY:
11 (c)2022 Tim Menzies, timm@ieee.org
12
13 OPTIONS:
14 --bins -b bins = 10
15 --k -k handle rare classes = 1
16 --m -m handle rare attributes = 2
17 --p -p distance coefficient = 2
18
19 OPTIONS (other):
20 --help -h show help = false
21 --go -g start-up goal = nothing
22 --seed -s seed = 10019
23 --file -f file = ../../data/auto93.csv]]
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36 function lib.cli(t)
37   for key,x in pairs(t) do
38     x = lib.str(x)
39     for n,flag in ipairs(arg) do
40       if flag=="-".key:sub(1,1) or flag=="-".key then
41         t[key] = lib.read(x) and "true" and "false" or arg[n+1] end end
42       t[key] = lib.read(x) end
43   return t end
44
45 function lib.csv(csvfile)
46   csvfile = io.input(csvfile)
47   return function(s, t)
48     s=io.read()
49     if not s then io.close(csvfile) else
50       t={}; for x in gmatch("["..s.."]") do t[1+#t] = lib.read(x) end
51       return t end end end
52
53 function lib.demos(TH,go)
54   local fails,backup = 0,{}
55   for k,v in pairs(TH) do backup[k]=v end
56   for txt,todo in pairs(go[TH.go]) and (go[TH.go]) or go do
57     for k,v in pairs(backup) do TH[k]=v end
58     math.randomseed(TH.seed)
59     io.write(" ")
60     local result = todo()
61     if result ~= true then
62       fails = fails + 1
63       print("Error",txt,status) end end
64   for k,v in pairs(_ENV) do if not b4[k] then print("?",k,type(v)) end
65   os.exit(fails) end
66
67 function lib.copy(t, u)
68   if type(t) ~= "table" then return t end
69   u={};for k,v in pairs(t) do u[lib.copy(k)]=lib.copy(v) end
70   return setmetatable(u, getmetatable(t)) end
71
72 function lib.is(name, t,new,x)
73   function new(kl,...) x=setmetatable({},kl); kl.new(x,...); return x end
74   t = {__tostring=lib.str, is=name}; t.__index=t
75   return setmetatable(t, {__call=new}) end
76
77 function lib.map(t,f, u)
78   u={}; for k,v in pairs(t) do u[1+#u]=(f and f(v) or v) end return u end
79
80 function lib.normpdf(x, mu, sd, denom,nom)
81   return sd==0 and (x==mu and 1 or 0) or
82   math.exp(-1*(x - mu)^2/(2*sd^2)) * 1 / (sd * ((2*math.pi)^0.5)) end
83
84 function lib.oo(i) print(lib.str(i)) end
85
86 function lib.pop(t) return table.remove(t) end
87
88 function lib.push(t,x) t[1+#t] = x ; return x end
89
90 function lib.read(str)
91   str = str:match("%%s[%s]*")
92   if str=="true" then return true elseif str=="false" then return false end
93   return math.tointeger(str) or tonumber(str) or str end
94
95 function lib.rnd(n, p) local m=10^(p or 2); return math.floor(n*m+0.5)/m end
96
97 function lib.shuffle(t, j)
98   for i = #t, 2, -1 do j=math.random(i); t[i], t[j] = t[j], t[i]; end;
99   return t end
100
101 function lib.splice( t, i, j, k, u)
102   u={};for n=(i or 1)//1,(j or #t)//1,(k or 1)//1 do u[1+#u]=t[n] end;return u end
103
104 function lib.str(i, j)
105   if type(i)~="table" then return tostring(i) end
106   if #i > 0 then j = lib.map(1,tostring)
107   else j={}; for k,v in pairs(i) do j[1+#j] = string.format("%%s",k,v) end
108   table.sort(j) end
109   return (i.is or "").."["..table.concat(j,"")."]" end

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