Generate a Table and Fill with Data Row by Row or Random Data

back to Fan's Intro Math for Econ, Matlab Examples, or MEconTools Repositories

An Empty Table, Filled with Loop Row by Row

First, generate an empty table.

```
% Make N by 2 matrix of fieldname + value type
mt_st_variable_names_types = [["category", "string"]; ...
    ["wage", "double"]; ...
    ["skilled", "logical"]; ...
    ["labdemand", "double"]; ...
    ["labsupply", "double"]; ...
    ["labsupplyprob", "string"]; ...
    ["rho_manual", "double"]; ...
    ["rho_routine", "double"]; ...
    ["rho_analytical", "double"]; ...
    ];
% Make table using fieldnames & value types from above
tb_equilibrium = table('Size',[0,size(mt_st_variable_names_types,1)],...
 'VariableNames', mt_st_variable_names_types(:,1),...
 'VariableTypes', mt_st_variable_names_types(:,2));
% display table
disp(size(tb_equilibrium));
```

```
     0     9
```

Second, over a loop, fill the table with values row by row.

```
for it_rho_set=[1,2,3]
    if (it_rho_set == 1)
        cl_data_row = {'C001',1,  true,1,1,0.5,0.5,0.5,0.5};
    elseif (it_rho_set == 2)
        cl_data_row = {'C002',1,  0   ,1.2,0.6,0.5,0.45,0.5,0.5};
    elseif (it_rho_set == 3)
        cl_data_row = {'C011',1.1,false,1.2,0.6,0.5,0.45,0.45,0.45};
    end
    tb_equilibrium = [tb_equilibrium; cl_data_row];
end
disp(tb_equilibrium);
```

```
    category    wage    skilled    labdemand    labsupply    labsupplyprob    rho_manual    rho_routine    rho_analy
    ________    ____    _______    _________    _________    _____________    __________    ___________    _________

     "C001"       1        1            1            1          "0.5"            0.5           0.5             0.5
     "C002"       1        0          1.2          0.6          "0.5"           0.45           0.5             0.5
     "123"      1.1        0          1.2          0.6          "0.5"           0.45          0.45            0.45
```

Generate a Table with M Variables of Random Data

Generate a numeric table with random varlues and a string column

```
% Numeric Matrix
```

```
it_num_cols = 4;
it_num_rows = 5;
mt_data = rand([it_num_rows, it_num_cols]);

% Generate Table
tb_test = array2table(mt_data);

% Generate Row and Column Names
cl_col_names = strcat('col_', string((1:it_num_cols)));
cl_row_names = strcat('row_', string((1:it_num_rows)));

tb_test.Properties.VariableNames = matlab.lang.makeValidName(cl_col_names);
tb_test.Properties.RowNames = matlab.lang.makeValidName(cl_row_names);

% Generate two string variable
rng(456);
cl_st_var1 = strcat('data=', string(rand([it_num_rows,1])));
cl_st_var2 = strcat('data=', string(rand([it_num_rows,1])));
tb_test = addvars(tb_test, cl_st_var1, cl_st_var2);

% Display Table
disp(tb_test);
```

	col_1	col_2	col_3	col_4	cl_st_var1	cl_st_var2
row_1	0.43568	0.4688	0.18092	0.14604	"data=0.24876"	"data=0.60411"
row_2	0.38527	0.57	0.11816	0.54272	"data=0.16307"	"data=0.8857"
row_3	0.57571	0.6457	0.24273	0.8571	"data=0.78364"	"data=0.75912"
row_4	0.14609	0.72334	0.0081834	0.20021	"data=0.80852"	"data=0.18111"
row_5	0.68659	0.68067	0.36007	0.13463	"data=0.62563"	"data=0.15017"