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function [yL,yH,tS,tau] = Project_M4_loopalgorithm_002_08(filecool,
    fileheat)
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
% ENGR 132 FINAL PROJECT
%
% Program Description
% This user-defined function can run 100 times and get all values of
    yL,
% yH, tau and tS as vectors.
%
% Function Call
% [yL,yH,tS,tau] = Project_M4_loopalgorithm_002_08(filecool, fileheat)
%
% Input Arguments
% 1. filecool: the name of cooling data file that we want to input as
    a
%     string
% 2. fileheat: the name of heating data file that we want to input as
    a
%     string
%
% Output Arguments
% 1. yL: initial low temperature/asymptoting lowest temperature
% 2. yH: initial high temperature/asymptoting highest temperature
% 3. tS: the threshold t-value of the change in temperature
% 4. tau: represents the time it takes for the dependent
%     variable to achieve a value of yTau = yL + 0.632(yH - yL).
%
% Assignment Information
%   Assignment:      M4
%   Author:          Tomoki Koike, koike@purdue.edu,
%                   Yi Zhou   zhou823@purdue.edu
%                   Eu JIn Lee  lee2219@purdue.edu
%                   Ian Pitman  ipitman@purdue.edu
%   Team ID:         002-08
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

timerVal = tic;
filecooldataOriginal = csvread(filecool); %input the data
% the size of the cool data
[rowSizeCoolData, colSizeCoolData] = size(filecooldataOriginal);
timeCol = filecooldataOriginal(:,1); % the first column is time
filecooldata = filecooldataOriginal(:,2:colSizeCoolData);
fileheatdata = csvread(fileheat, 0,1);

file = [filecooldata fileheatdata]; %combine two files into one file
[fileRowSize, fileColSize] = size(file); % the size of the file array
m = 1; %index

for col = [1:fileColSize] %for loop to call algorithm udf 100 time
    tempCol = file(:,col); %tempCol is changing every loop

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    %call M4Algorithm to get the values of yL, yH, tau and tS. They
will
    %store in column vectors
    [yL(m), yH(m), tS(m), tau(m), SSEmod(m), string(m)] =...
        Project_M4Algorithm_002_08(timeCol, tempCol);
    m = m + 1; %index plus 1
end
```

Published with MATLAB® R2018a