Contents

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% ENGR 13300 Fall 2021
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% Problem Description: given the vector v, it sorts it by decsending and
% ascending
%
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%
% Assignment Information
%   Assignment:     Ind HW7 - MA2
%   Author:         Maximilian Drach, mdrach@purdue.edu

%   Team ID:        LC5 - 07
%
%   Contributor:    Name, login@purdue [repeat for each]
%   My contributor(s) helped me:
%     [ ] understand the assignment expectations without
%         telling me how they will approach it.
%     [ ] understand different ways to think about a solution
%         without helping me plan my solution.
%     [ ] think through the meaning of a specific error or
%         bug present in my code without looking at my code.
%   Note that if you helped somebody else with their code, you
%   have to list that person as a contributor here as well.
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
```

INITIALIZATION

```
v = [10 5 1 8 -9 0 2 3];
```

CALCULATIONS

```
%copies the vector v to v1,v2
v1=v;
v2=v;
%gets the length of v
len_v = length(v);
%creates a new vector with zeros
```

```matlab
desc_v = linspace(0,0,len_v);


for x = 1:len_v
    %adds the max to the descending vector, then also gets the index location of
    %the max value in v1
    [desc_v(x), max_location]= max(v1(:));
    %sets the max value location to the min -1
    v1(max_location)=min(v1)-1;

end

%creates a new vector with zeros
asc_v = linspace(0,0,len_v);

for x = 1:len_v
    %adds the max to the ascending vector, then also gets the index location of
    %the min value in v2
    [asc_v(x), min_location]= min(v2(:));
    %sets the min value location to the max + 1
    v2(min_location)= max(v2)+1;

end
```

OUTPUTS

```matlab
fprintf('The vector v is: [');
fprintf('%d ',v(1:end-1));
fprintf('%d]\n\n', v(end));




fprintf('Vector sorted in descending order: \n')
fprintf('\t%d', desc_v);

fprintf('\nVector sorted in ascending order: \n');
fprintf('\t%d', asc_v);
fprintf('\n');
```

```
The vector v is: [10 5 1 8 -9 0 2 3]

Vector sorted in descending order:
        10       8       5       3       2       1       0      -9
Vector sorted in ascending order:
        -9       0       1       2       3       5       8      10
```

ACADEMIC INTEGRITY STATEMENT

I have not used source code obtained from any other unauthorized source, either modified or unmodified. Neither have I provided access to my code to another. The project I am submitting is my own original work.