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%Section #202
% Project 3 : Hurricane Mapper, Spring 2019

%%

function [category, color] = calcCategory(wind)
%based on wind strength, calculates hurricane wind and color
% Input: wind - a number for the wind speed (mph) of particular hurricane
%         data plot
%Output: category - 0-5 integer for hurricane category based on wind speed
%         color - triple RGB color value- saved in rows

% category 0: <=38, color [0 1 1], turquoise
% category 0: 39-73, color [0.25 1 0], green
% category 1: 74-95, color [1 1 0], yellow
% category 2: 96-110, color [1 0.75 0], orange
% category 3: 111-129, color [1 0 0], red
% category 4: 130-156, color [0.75 0 1], violet
% category 5: >=157, color [1 0 1], pink

% preassigning category and color
category = [];
color = [];

% using a for loop to go through the whole vector of wind
for i = 1:length(wind)

% using an if, elseif statement in order to assign the color and category
%to the correct index
if wind(i)<=38
category = [category; 0]; %category vector
color = [color; 0 1 1]; % concating and assigning turquoise
elseif wind(i)>=39 && wind(i)<=73
category = [category; 0]; %category vector
color = [color; 0.25 1 0]; % concating and assigning green
elseif wind(i)>=74 && wind(i)<=95
category = [category; 1]; %category vector
color = [color; 1 1 0]; % concating and assigning yellow
elseif wind(i)>=96 && wind(i)<=110
category = [category; 2]; %category vector
color = [color; 1 0.75 0]; % concating and assigning orange
elseif wind(i)>=111 && wind(i)<=129
category = [category; 3]; %category vector
color = [color; 1 0 0]; % concating and assigning red
elseif wind(i)>=130 && wind(i)<=156
category = [category; 4]; %category vector
color = [color; 0.75 0 1]; % concating and assigning violet
elseif wind(i)>=157
category = [category; 5]; %category vector
color = [color; 1 0 1]; % concating and assigning pink
end %if
end %for

end %function
```