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% Prompt user to select an Excel file
[filename, pathname] = uigetfile('*.xlsx', 'Select an Excel file');
fullpath = fullfile(pathname, filename);

% Read the Excel file
data = readmatrix(fullpath);

% Extract data from the table
elevation = data(:, 1);
azimuth = data(:, 2);
time = data(:, 3);
key_column = data(:, 4); % Column 4 as key column

% Define time interval between each value
time_interval = 2; % in seconds

% Create a colormap for unique values in the key column
unique_keys = unique(key_column);
num_unique_keys = numel(unique_keys);
color_map = hsv(num_unique_keys);

% Create scatter plot
figure;
scatter3(time(1), azimuth(1), elevation(1), 'filled', 'MarkerFaceColor', color_map(1,:));
xlabel('Time (seconds)');
ylabel('Azimuth');
zlabel('Elevation');
title('3D Scatter Plot');
hold on;

for i = 2:size(data, 1)
    % Plot current data point with the color corresponding to its key value
    key_index = find(unique_keys == key_column(i));
    scatter3(time(i), azimuth(i), elevation(i), 'filled', 'MarkerFaceColor',
color_map(key_index,:));

    % Connect the previous point with the current point using a dotted line
    line([time(i-1), time(i)], [azimuth(i-1), azimuth(i)], [elevation(i-1), elevation(i)],
'LineStyle', '--', 'Color', 'k');

    % Set axis limits
    xlim([min(time) max(time)]);
    ylim([min(azimuth) max(azimuth)]);
    zlim([min(elevation) max(elevation)]);

    % Pause for time_interval seconds
    pause(time_interval);
end

hold off;

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plot each value after interval of 2sec with the same color
unless value of key(i) is same.
change the color if its different
:

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% Extract data from the table
elevation = data(:, 1);
azimuth = data(:, 2);
time = data(:, 3);
key_column = data(:, 4); % Column 4 as key column

% Define time interval between each value
time_interval = 2; % in seconds

% Create scatter plot
figure;
scatter3(time(1), azimuth(1), elevation(1), 'filled', 'MarkerFaceColor', 'r');
xlabel('Time (seconds)');
ylabel('Azimuth');
zlabel('Elevation');
title('3D Scatter Plot');
hold on;

prev_key_value = key_column(1); % Store the previous key value

for i = 2:size(data, 1)
    % Plot current data point
    scatter3(time(i), azimuth(i), elevation(i), 'filled', 'MarkerFaceColor', 'r');

    % Check if key value has changed
    if key_column(i) ~= prev_key_value
        % Change the color
        set(findobj(gca, 'Type', 'scatter'), 'MarkerFaceColor', 'b'); % Change color to blue
        prev_key_value = key_column(i); % Update previous key value
    end

    % Connect the previous point with the current point using a dotted line
    line([time(i-1), time(i)], [azimuth(i-1), azimuth(i)], [elevation(i-1), elevation(i)],
'LineStyle', '--', 'Color', 'k');

    % Set axis limits
    xlim([min(time) max(time)]);
    ylim([min(azimuth) max(azimuth)]);
    zlim([min(elevation) max(elevation)]);

    % Pause for time_interval seconds
    pause(time_interval);
end

hold off;

```