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```
function plot_trust(info_matrix, method, f)
```

## PLOT\_SEARCH Introduction

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Plots the 3D surface plot and the minimizing path.

info\_matrix: the matrix *produced by iterating a backtrack line search*.

method: the method *used for the backtrack line search*

f *the function to be evaluated*

## Establishing Plot Vectors

---

```
x1 = info_matrix(:,1);  
x2 = info_matrix(:,2);  
fx = info_matrix(:,3);  
  
x0 = info_matrix(1,1:2);  
xval = num2str(x0(1));  
yval = num2str(x0(2));
```

## Establishing Graph Components

---

```
header = ["Backtracking line search using " + method + " method"...  
         "for f(x_1, x_2) = 10(x_2 - x_1^2)^2 + (1 - x_1)^2" + ...  
         " starting at (" + xval + ", " + yval + ")"];  
  
xlab = "x_1";  
ylab = "x_2";  
zlab = "f(x_1, x_2)";
```

## Printing Results

---

```
hold on  
box on  
grid on  
colormap jet  
  
contours = fsurf(f, [-0.2 1 -1 1], 'ShowContours', 'on');  
contours.EdgeColor = 'none';
```

```
contours.FaceColor = 'none';
contours.MeshDensity = 50;
contours.LineWidth = 1;
title(header);
xlabel(xlab);
ylabel(ylab);
zlabel(zlab);

minline = plot3(x1,x2,fx);
minline.Color = 'k';
minline.LineWidth = 1.5;
minline.Marker = 'o';

axis tight

end
```