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```
function plot_search(info_matrix, method, f, limits)
```

PLOT_SEARCH Introduction

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

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) = 100(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 cool

surface = fsurf(f, limits);
surface.EdgeColor = 'interp';
surface.FaceColor = 'none';
surface.MeshDensity = 20;
surface.LineWidth = 1.5;
title(header);
xlabel(xlab);
ylabel(ylab);
```

```
zlabel(zlab);  
  
minline = plot3(x1,x2,fx);  
minline.Color = 'k';  
minline.LineWidth = 3;  
minline.Marker = '.';  
  
view(-45,60);  
  
end
```

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