Contents


```
% Nikhil Jayswal
% MATH 3890
% Machine Problem 7
% 16 April 2021

clc; clear; close all
```

Read Triangulation

```
[nv, x, y, nt, TRI] = readtri;
```

Set up lists

```
[nb,ne,nt,v1,v2,v3,e1,e2,e3,ie1,ie2,tril,trir,bdy,vadj,eadj, ...
    adjstart,tadj,tstart,area,TRI] = trilists(x,y,TRI);
```

Prompt for d

```
d = input('Enter the value of d: ');
```

Function to be interpolated

```
f = @(x, y) franke2(x, y);
```

Compute coefficients

```
c = intDP(d, x, y, v1, v2, v3, e1, e2, e3, ie1, ie2, f);
```

Evaluate spline

```
ng = 51;
xmin = min(x); xmax = max(x); ymin = min(y); ymax = max(y);
[xg,yg,g] = valspgrid(d,x,y,v1,v2,v3,e1,e2,e3,ie1,c,ng,xmin,xmax,ymin,ymax);
```

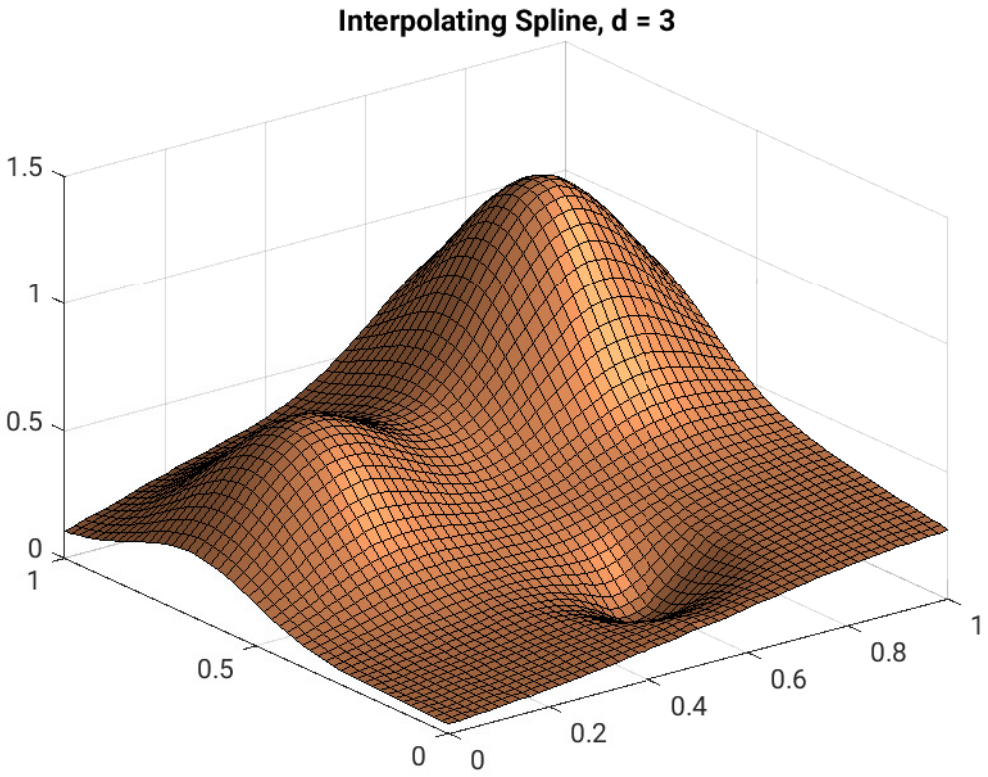
Plot spline

```
figure; surfl(xg,yg,g'); colormap(copper);
titlestring = ['Interpolating Spline, d = ', num2str(d)];
title(titlestring)
```

Compute & print max and rms errors

```
e = errg(xg,yg,g,f);
fprintf('emax = %5.2e, RMS = %5.2e\n',norm(e,inf),erms(e));
```

```
file name for triangulation   'type2.25'
Enter the value of d: 3
emax = 8.69e-03, RMS = 9.60e-04
```



```
file name for triangulation   'type2.25'
Enter the value of d: 5
emax = 1.34e-03, RMS = 7.80e-05
```