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```
%
% Nikhil Jayswal
% MATH 3890
% Machine Problem 9
% 24 Mar 2021
%

clc; clear; close all
```

Read Triangulation from a file

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

Call refinect() and print [x, y]

```
[xr, yr, TRIr] = refinect(x, y, TRI);
fprintf('The [x, y] pairs (vertex coordinates) are listed below:\n');
for i = 1:length(xr)
    fprintf('[%f, %f]\n', xr(i), yr(i));
end
fprintf('\n\n')
```

Plot refined triangulation

```
figure(1)
triplot(TRIr, xr, yr);
title('CT Refinement')
```

Call refinecti and print [x, y]

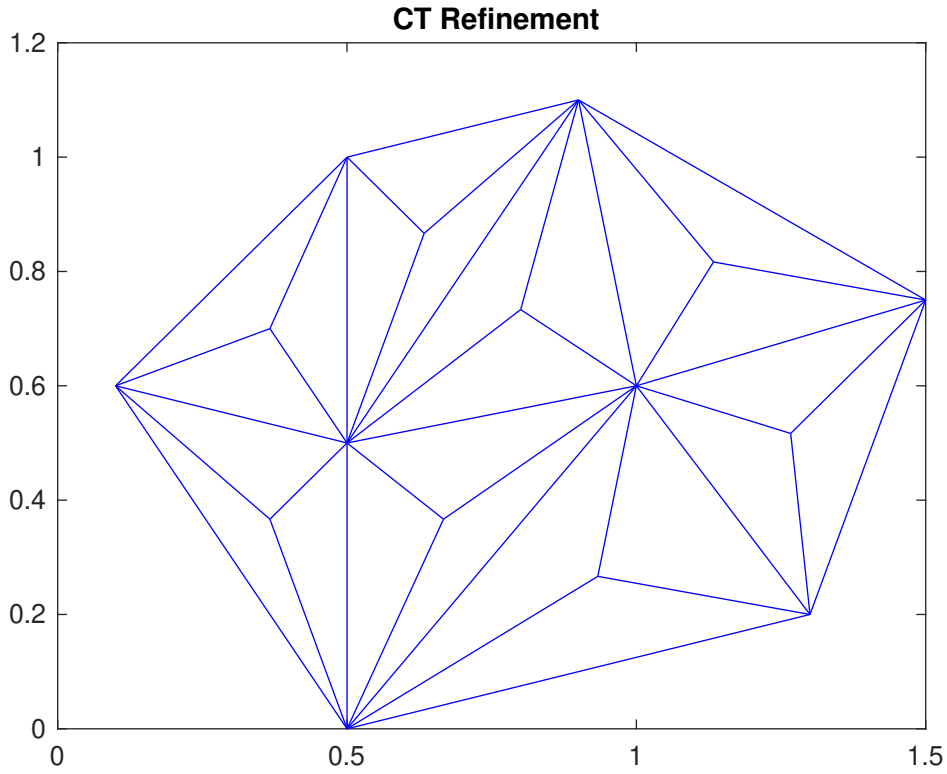
```
[xr, yr, TRIr] = refinecti(x, y, TRI);
fprintf('The [x, y] pairs (vertex coordinates) are listed below:\n');
for i = 1:length(xr)
    fprintf('[%f, %f]\n', xr(i), yr(i));
end
fprintf('\n\n')
```

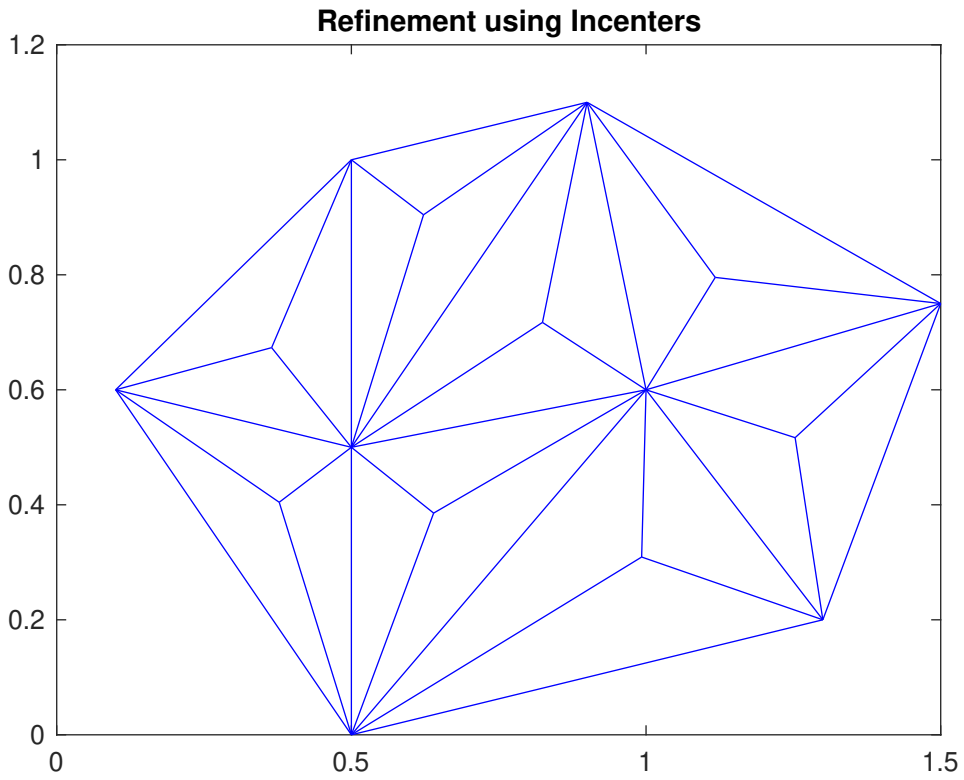
Plot refined triangulation

```
figure(2)
triplot(TRIr, xr, yr);
title('Refinement using Incenters')
```

```
The [x, y] pairs (vertex coordinates) are listed below:
[0.500000, 1.000000]
[0.900000, 1.100000]
[1.500000, 0.750000]
[0.100000, 0.600000]
[0.500000, 0.500000]
[1.000000, 0.600000]
[0.500000, 0.000000]
[1.300000, 0.200000]
[0.366667, 0.700000]
[0.633333, 0.866667]
[0.800000, 0.733333]
[1.133333, 0.816667]
[0.366667, 0.366667]
[0.666667, 0.366667]
[0.933333, 0.266667]
[1.266667, 0.516667]
```

```
The [x, y] pairs (vertex coordinates) are listed below:
[0.500000, 1.000000]
[0.900000, 1.100000]
[1.500000, 0.750000]
[0.100000, 0.600000]
[0.500000, 0.500000]
[1.000000, 0.600000]
[0.500000, 0.000000]
[1.300000, 0.200000]
[0.364682, 0.673313]
[0.622442, 0.904400]
[0.824264, 0.717157]
[1.117431, 0.795474]
[0.377558, 0.404400]
[0.639593, 0.385562]
[0.992547, 0.309158]
[1.252982, 0.516748]
```


CT Refinement
1.2
1
0.8
0.6
0.4
0.2
0
0
0.5
1
1.5


Refinement using Incenters
1.2
1
0.8
0.6
0.4
0.2
0
0
0.5
1
1.5