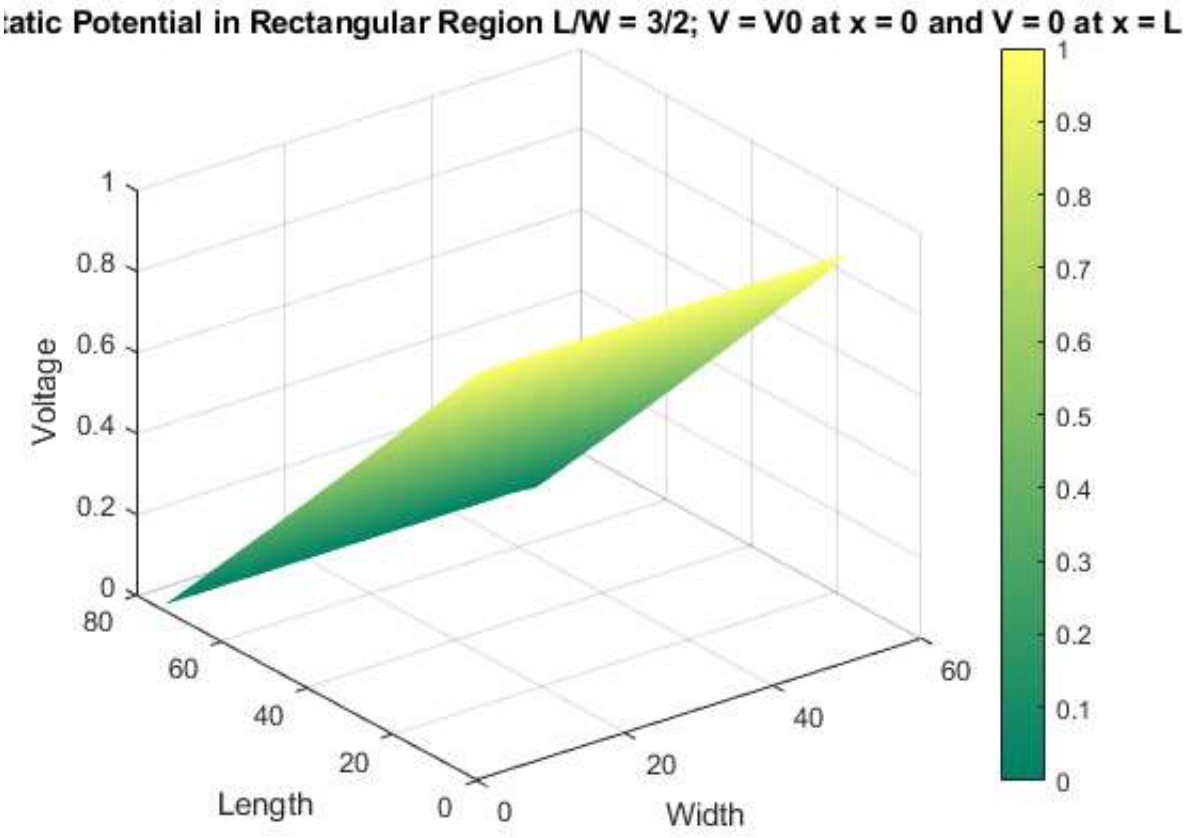
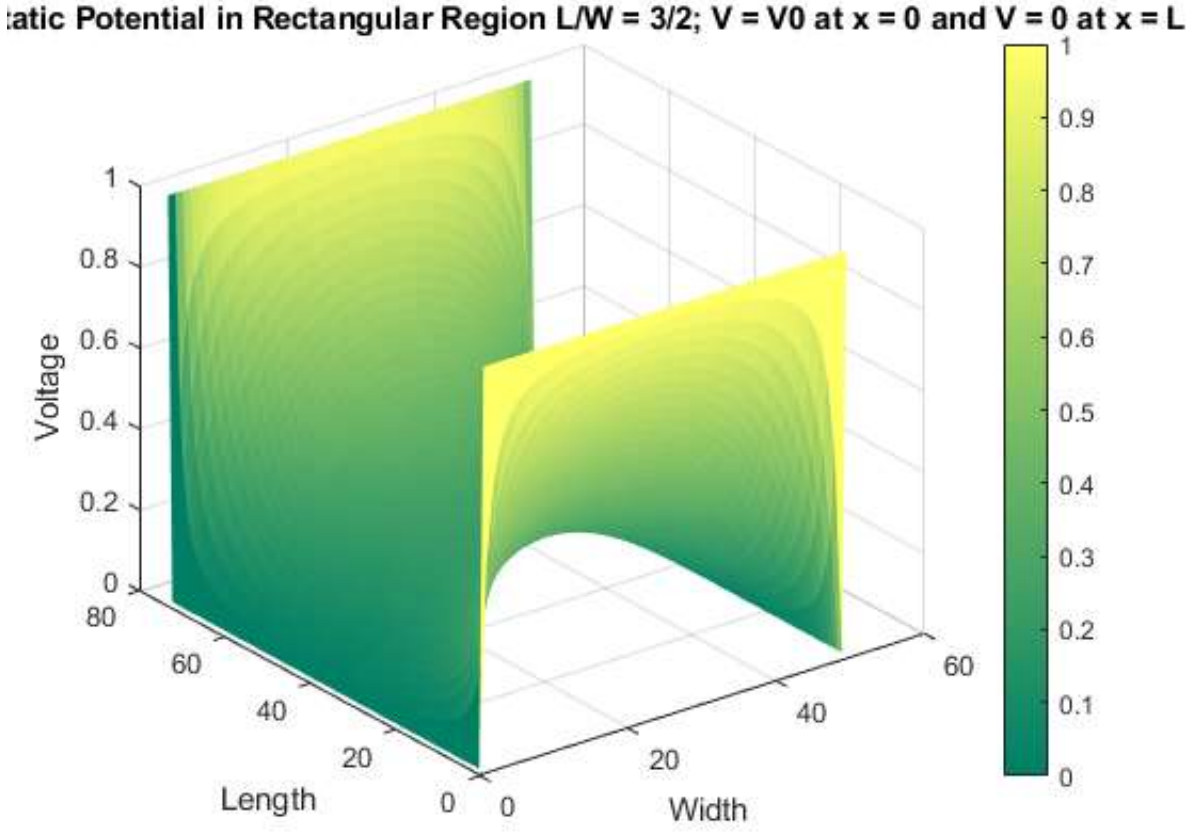
Contents


```
% ELEC 4700 Assignment 2
% Andrew Branicki 100973961
% February 24, 2019
```

Question 1

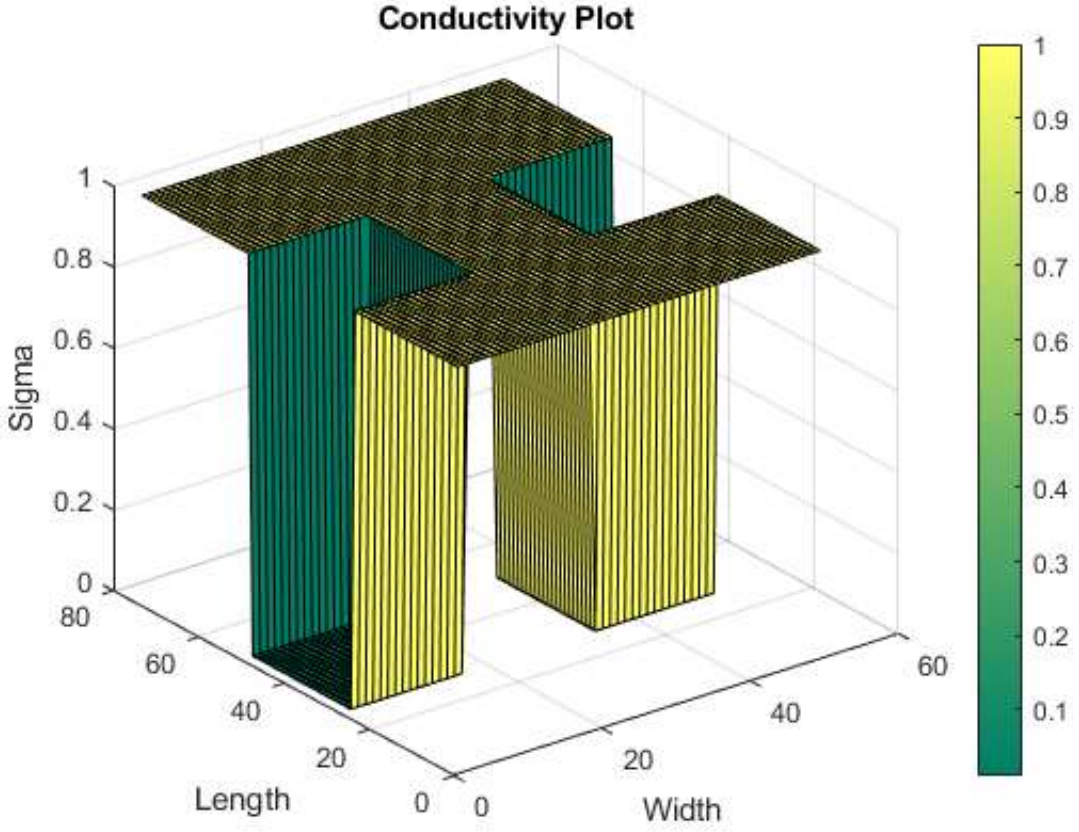
```
part_1;
```

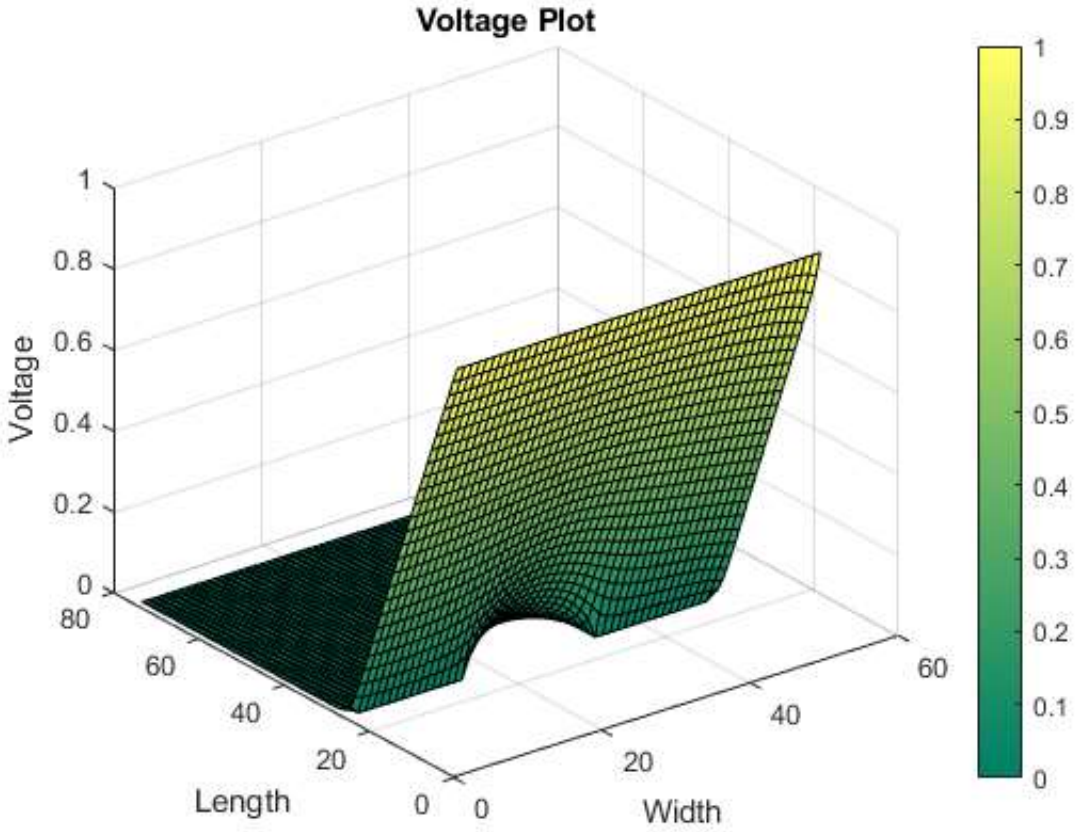


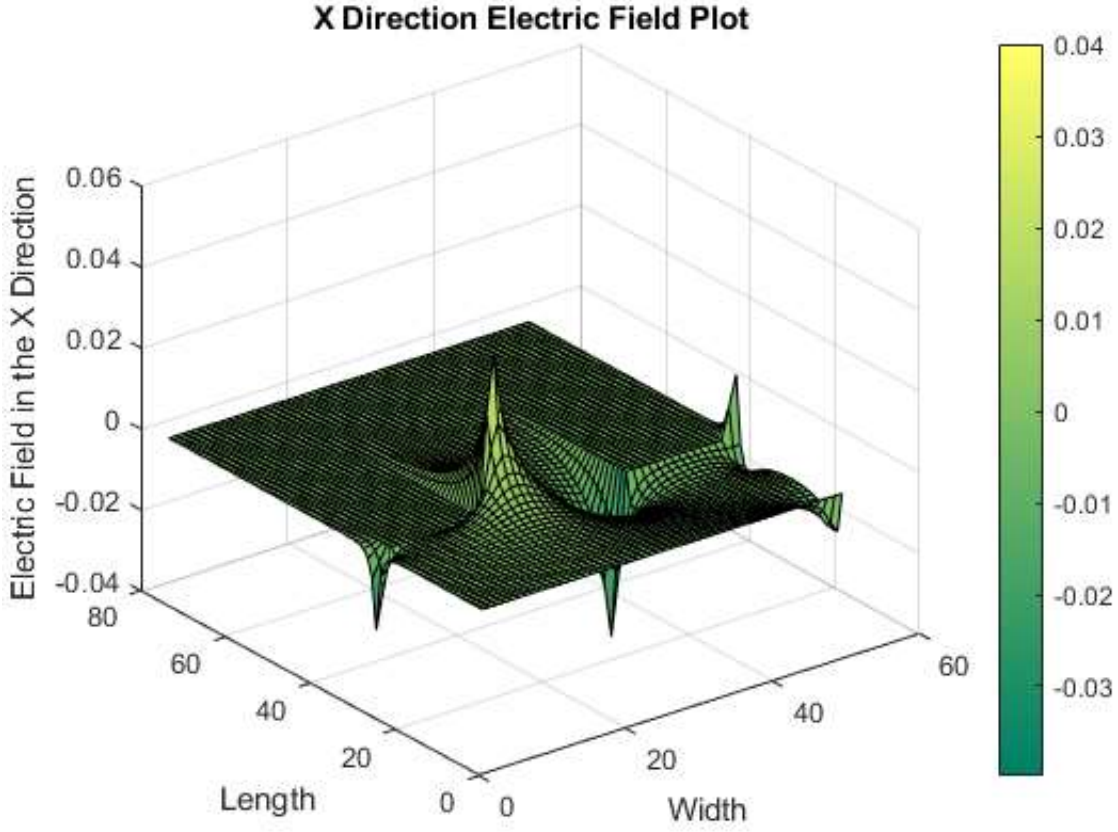


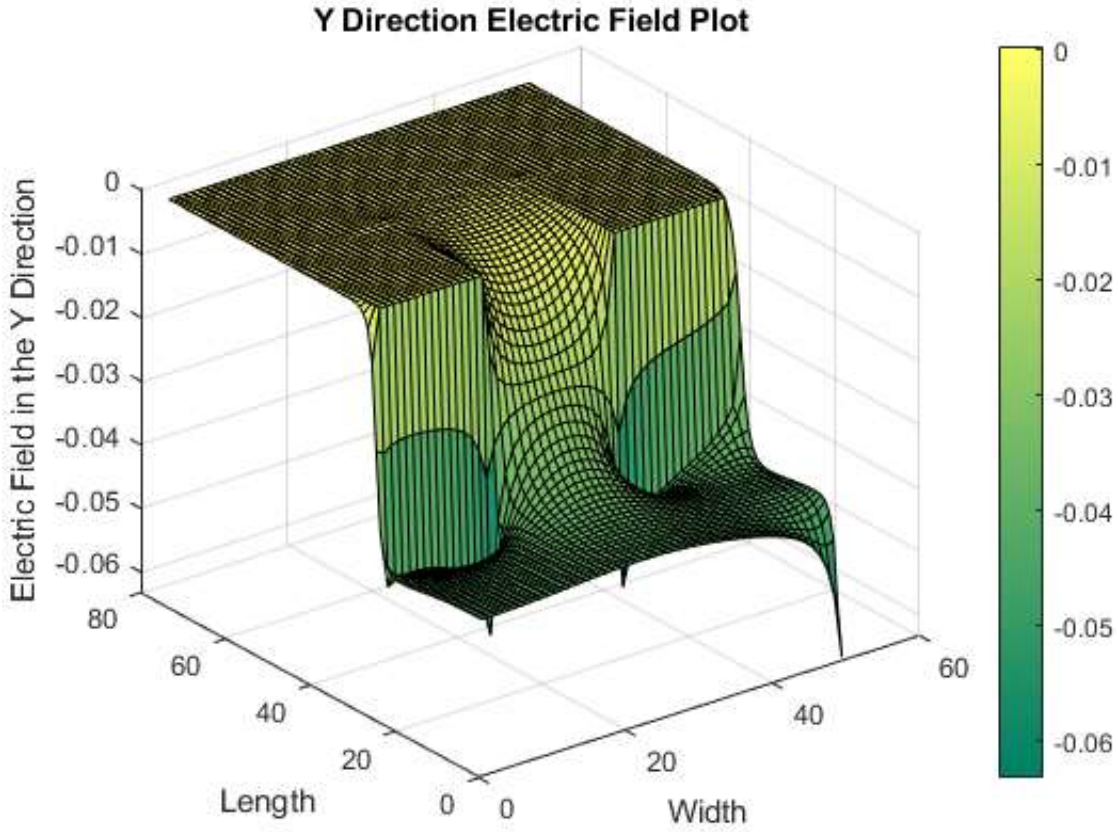
Question 2

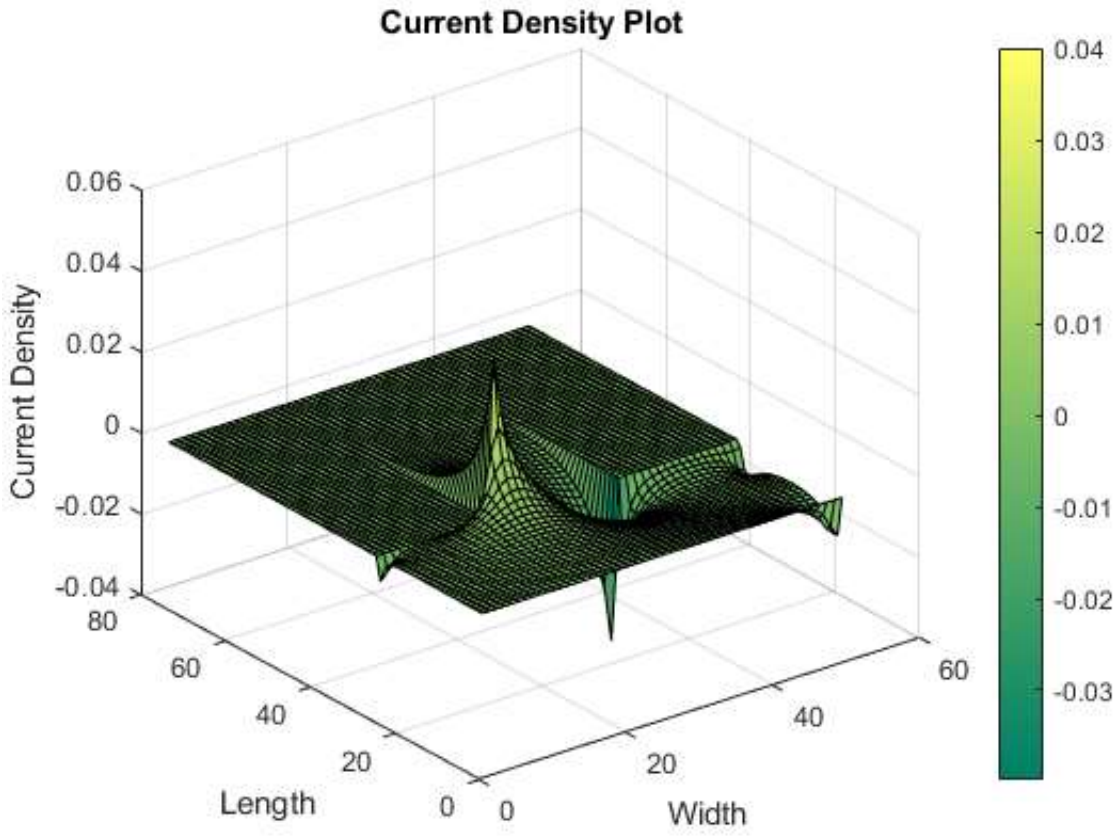
```
part_2;
```


Conductivity Plot
Sigma
1
0.8
0.6
0.4
0.2
0
80
60
40
20
0
Length
0
20
40
60
Width
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1


Voltage Plot
Voltage
1
0.8
0.6
0.4
0.2
0
80
60
40
20
0
Length
0
20
40
60
Width
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0

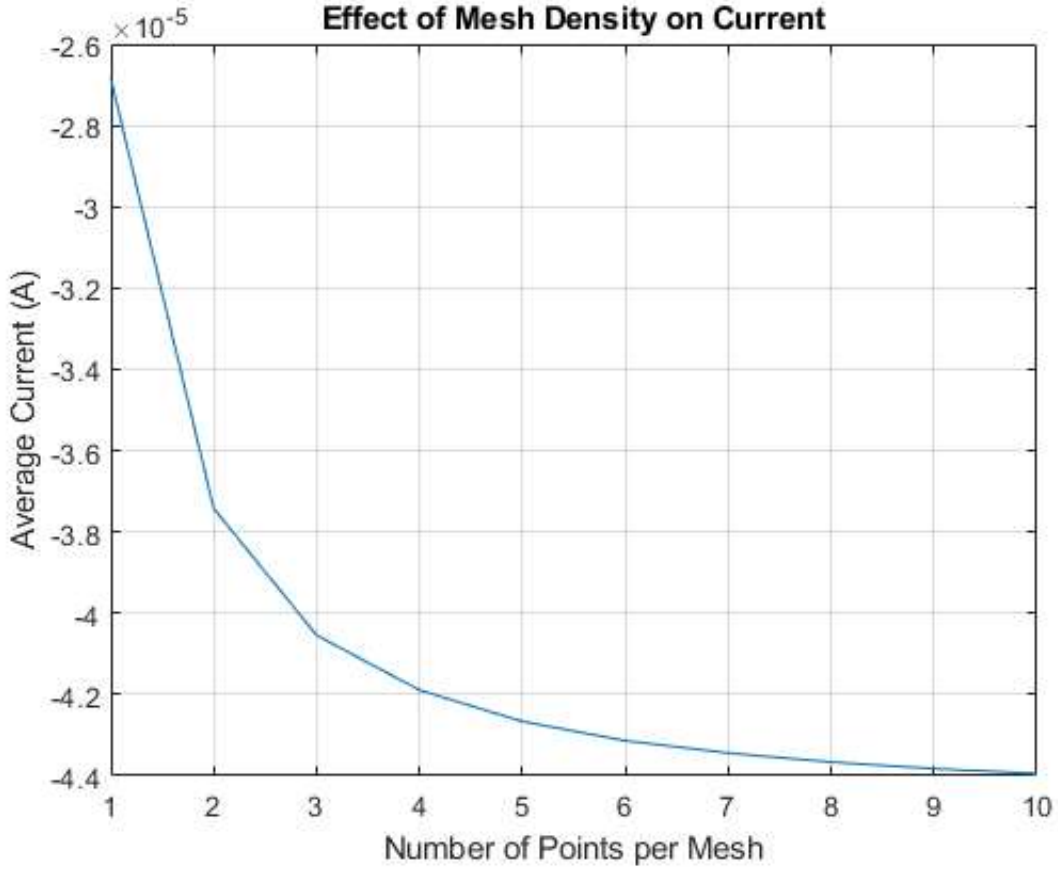

X Direction Electric Field Plot
Electric Field in the X Direction
0.06
0.04
0.02
0
-0.02
-0.04
80
60
40
20
0
Length
0
20
40
60
Width
0.04
0.03
0.02
0.01
0
-0.01
-0.02
-0.03


Y Direction Electric Field Plot
Electric Field in the Y Direction
0
-0.01
-0.02
-0.03
-0.04
-0.05
-0.06
80
60
40
20
0
Length
0
20
40
60
Width
0
-0.01
-0.02
-0.03
-0.04
-0.05
-0.06



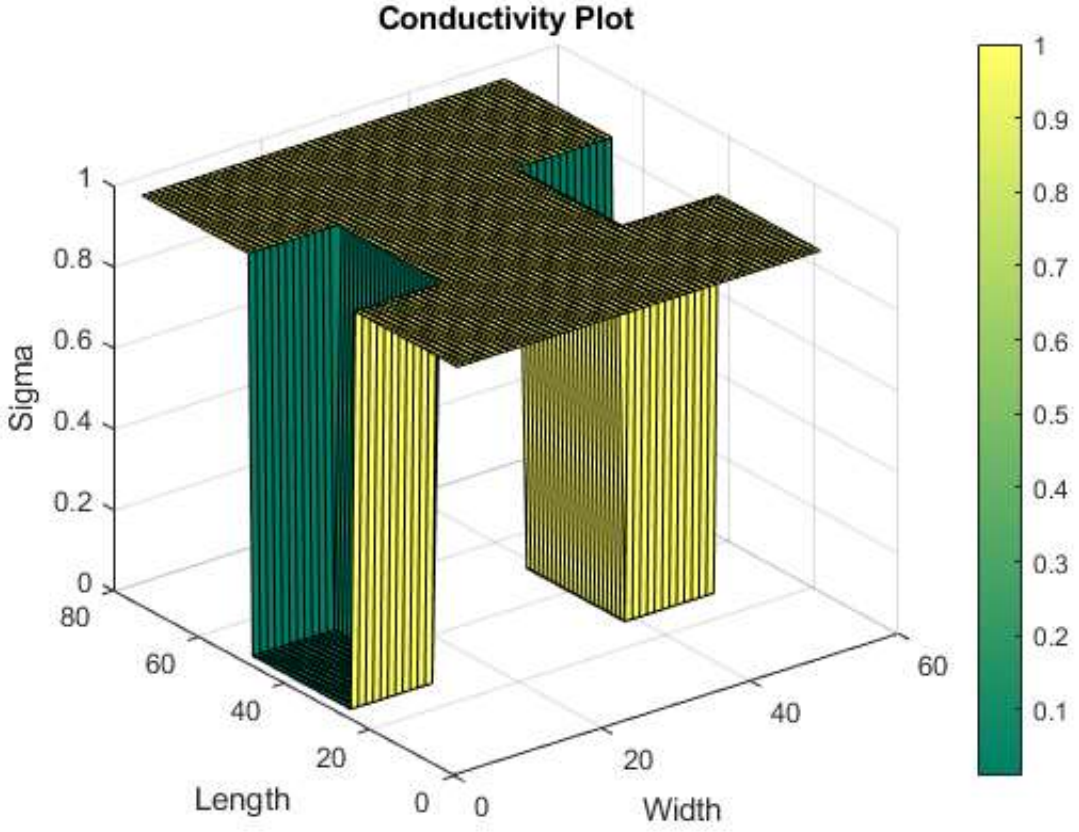
PART B: Varying the mesh density to see how it changes the current

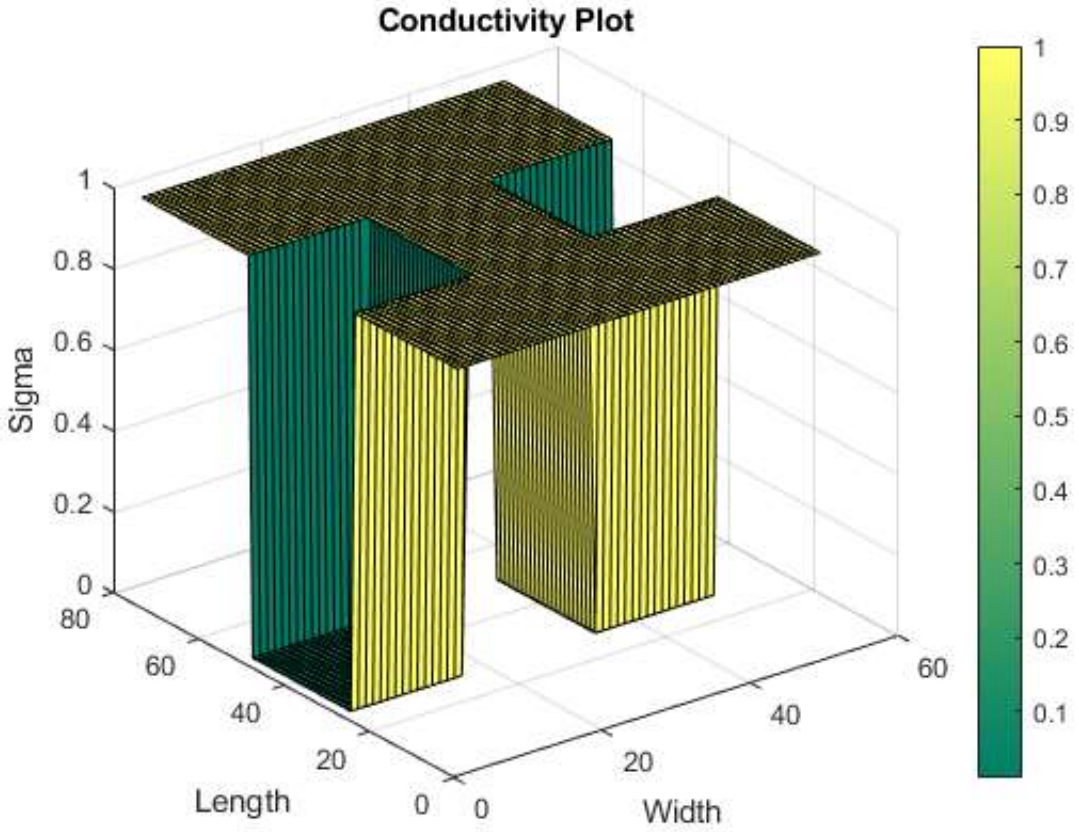
```
part_2_mesh;
```

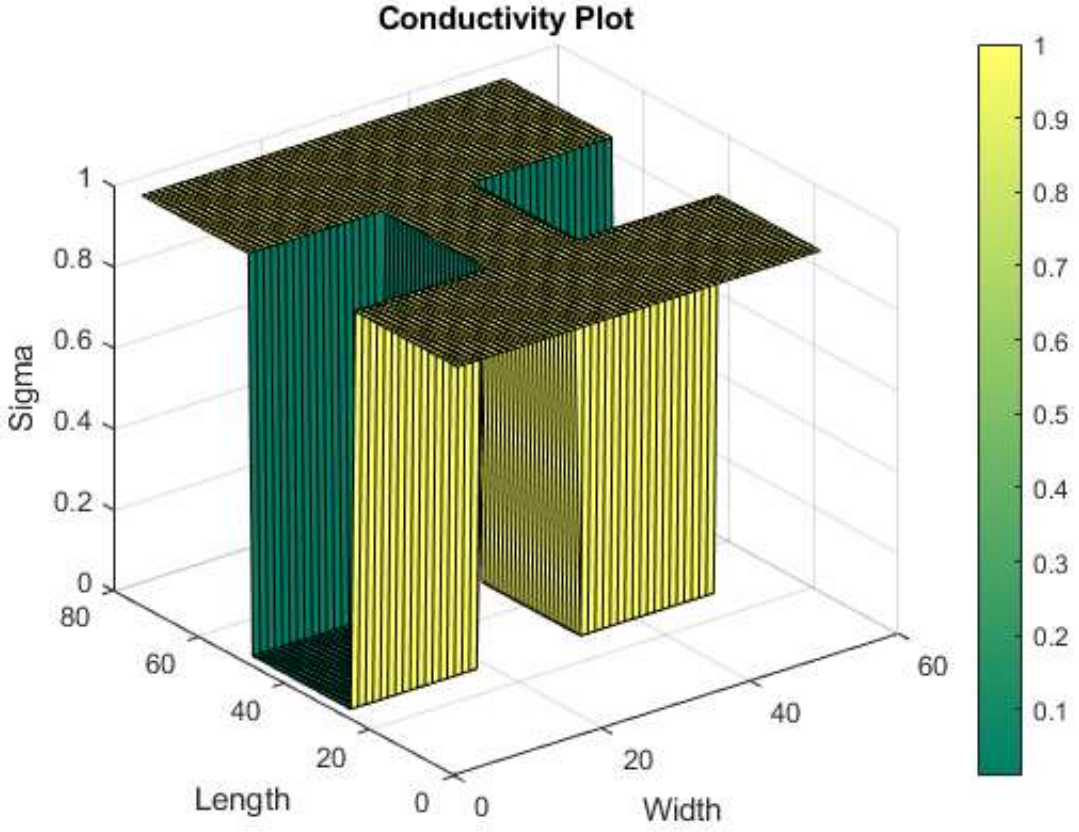


PART C: Varying the bottleneck to see how it changes the current

```
part_2_narrow;
```


Conductivity Plot
Sigma
1
0.8
0.6
0.4
0.2
0
80
60
40
20
0
Length
0
20
40
60
Width
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1


Conductivity Plot
Sigma
1
0.8
0.6
0.4
0.2
0
80
60
40
20
0
Length
0
20
40
60
Width
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1


Conductivity Plot
Sigma
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0.8
0.6
0.4
0.2
0
80
60
40
20
0
Length
0
20
40
60
Width
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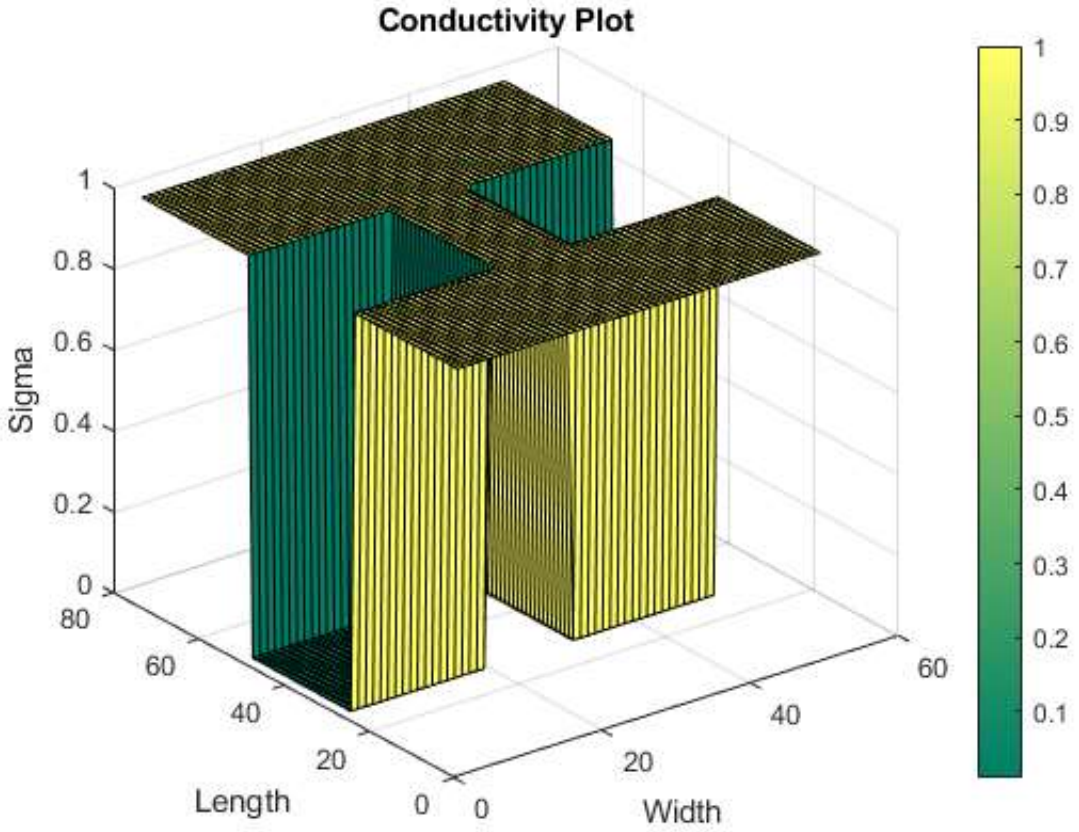
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1


Conductivity Plot
Sigma
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0.8
0.6
0.4
0.2
0
80
60
40
20
0
Length
0
20
40
60
Width
1
0.9
0.8
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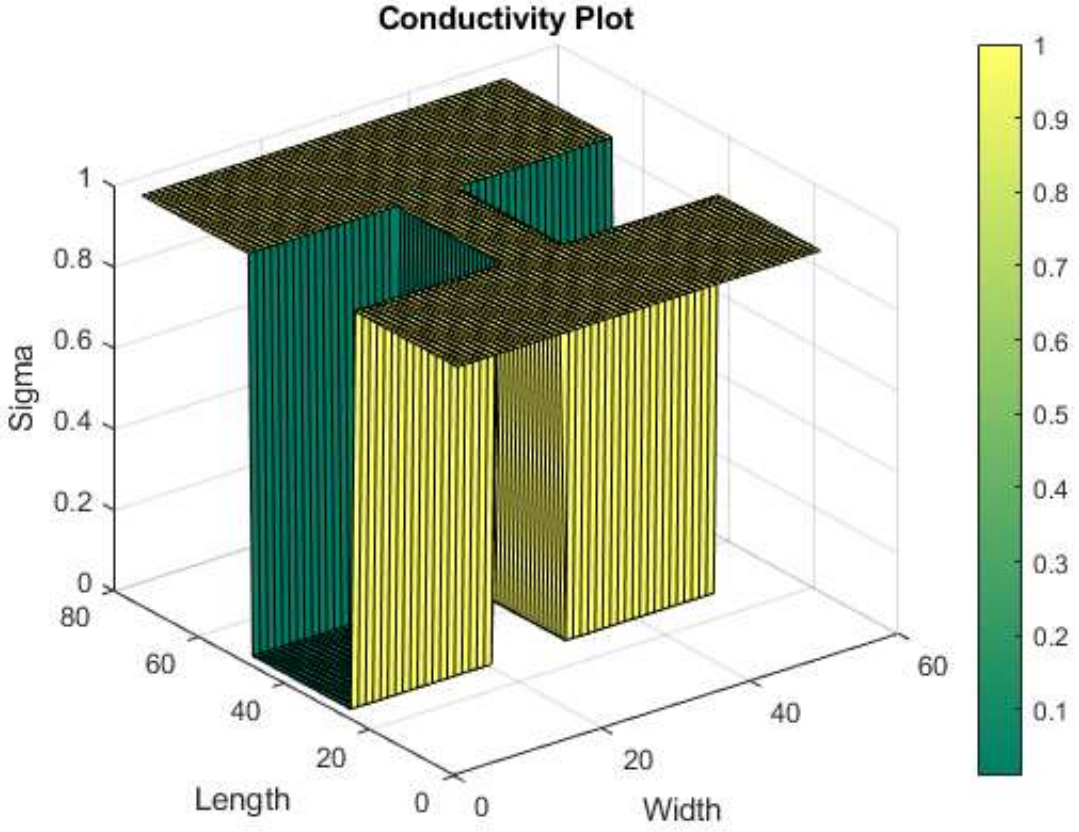
0.4
0.3
0.2
0.1


Conductivity Plot
Sigma
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0.8
0.6
0.4
0.2
0
80
60
40
20
0
Length
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20
40
60
Width
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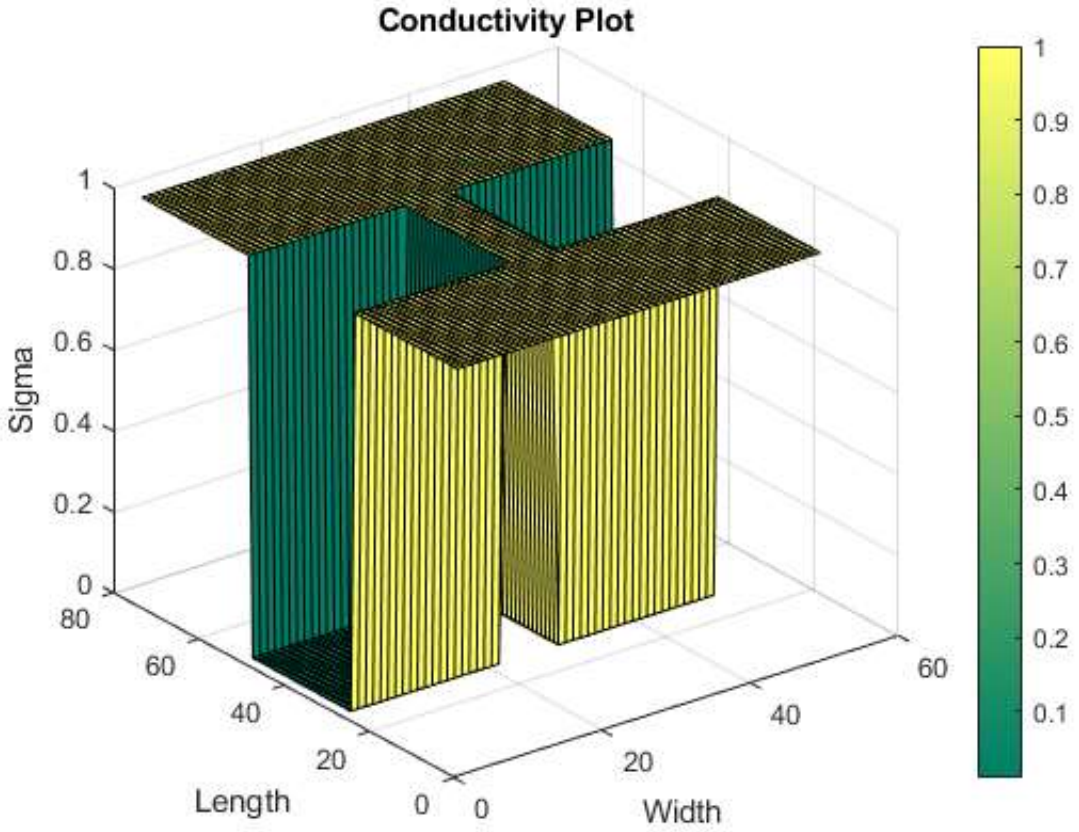
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1


Conductivity Plot
Sigma
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0.8
0.6
0.4
0.2
0
80
60
40
20
0
Length
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20
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Width
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0.9
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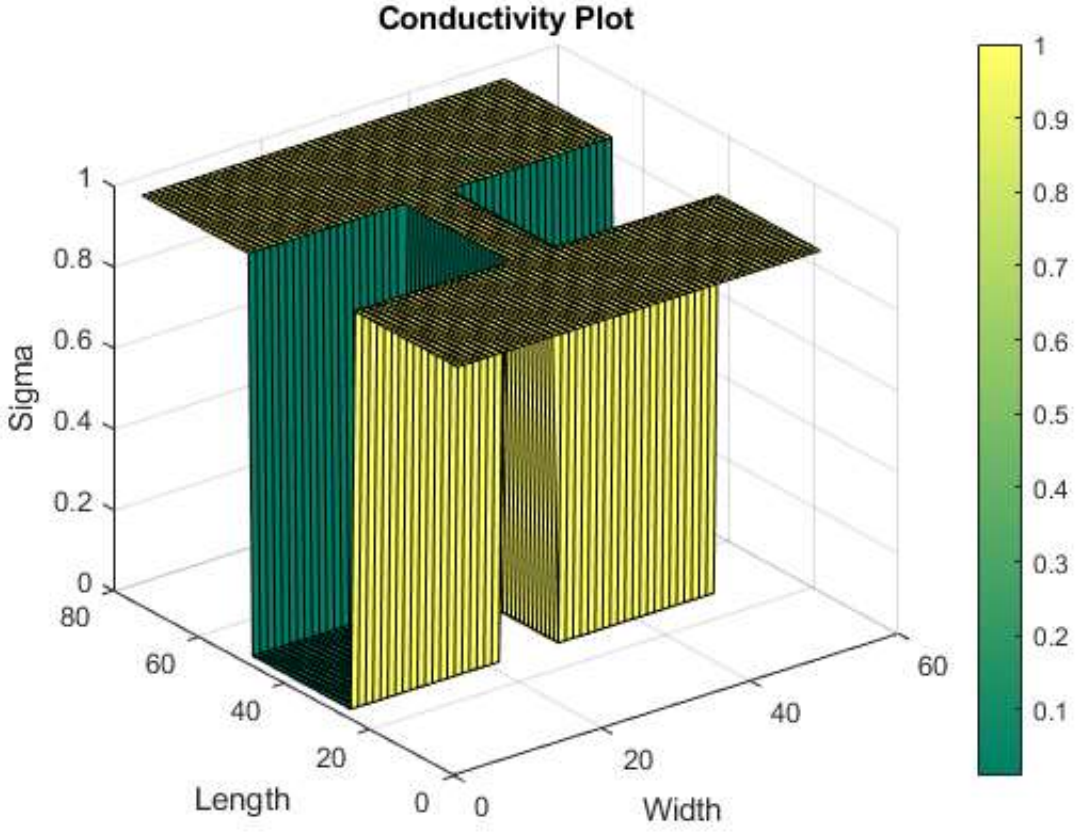
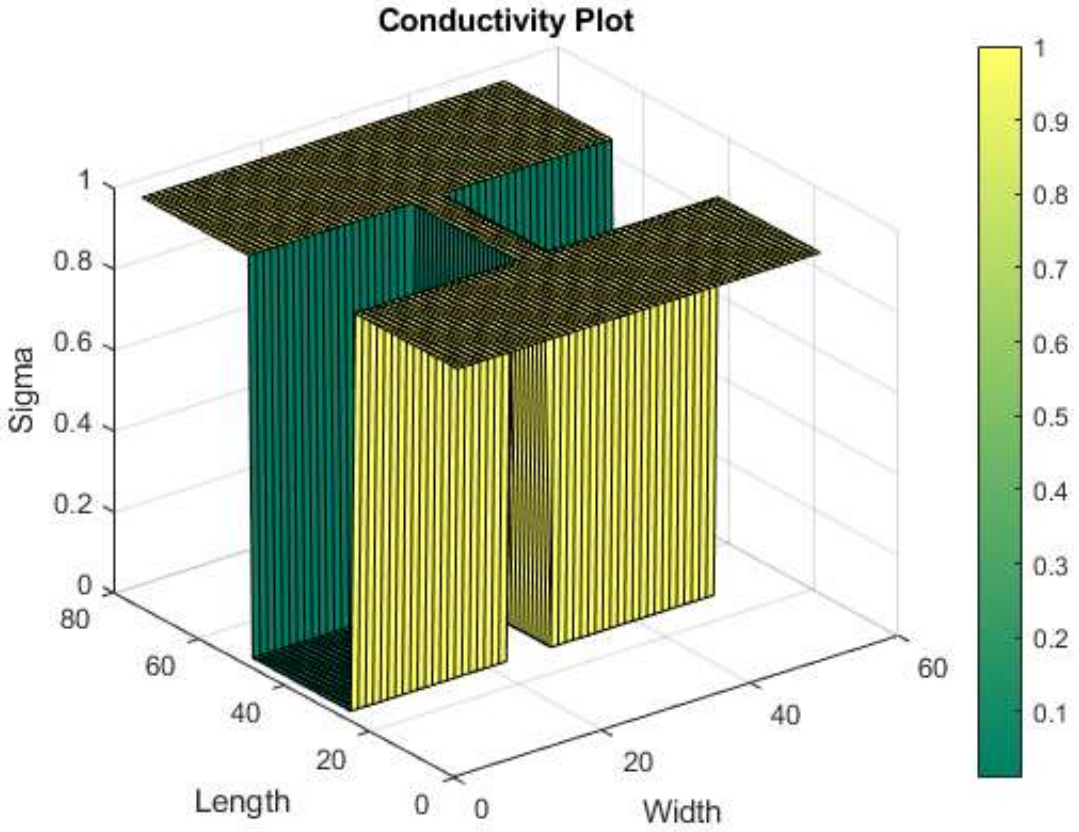
0.3
0.2
0.1


Conductivity Plot
Sigma
1
0.8
0.6
0.4
0.2
0
80
60
40
20
0
Length
0
20
40
60
Width
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1


Conductivity Plot
Sigma
1
0.8
0.6
0.4
0.2
0
80
60
40
20
0
Length
0
20
40
60
Width
1
0.9
0.8
0.7
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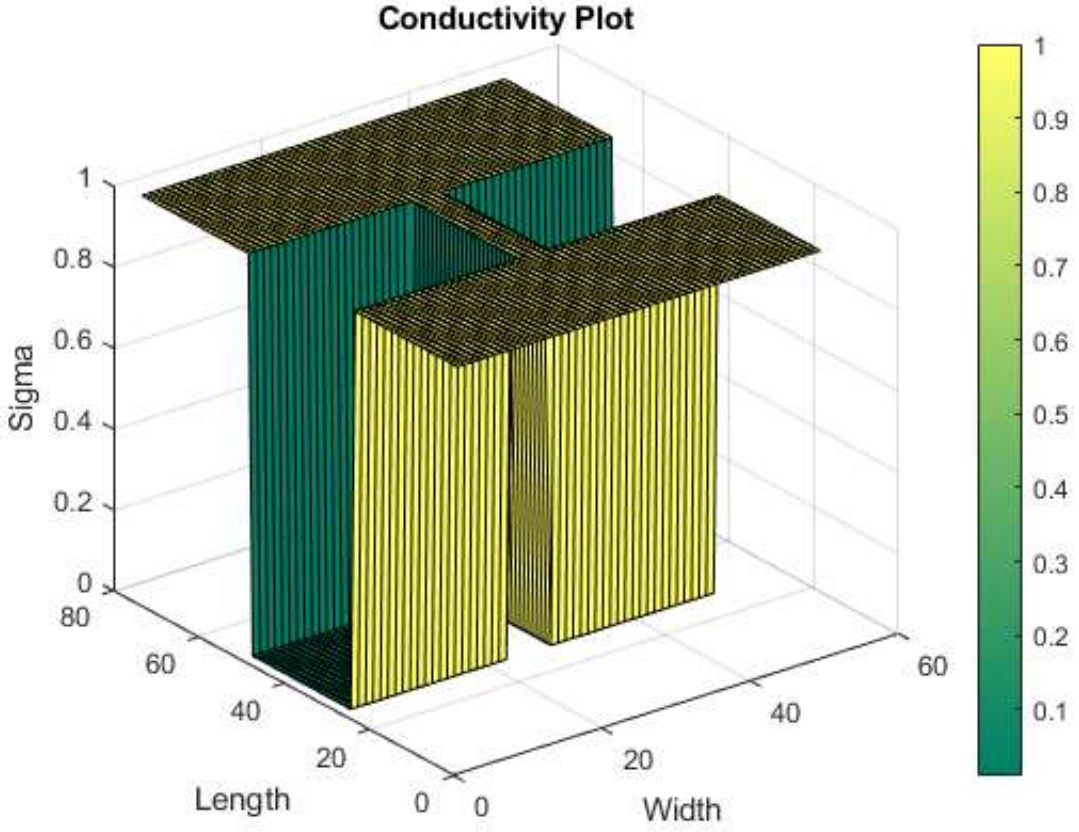
0.5
0.4
0.3
0.2
0.1


Conductivity Plot
Sigma
1
0.8
0.6
0.4
0.2
0
80
60
40
20
0
Length
0
20
40
60
Width
1
0.9
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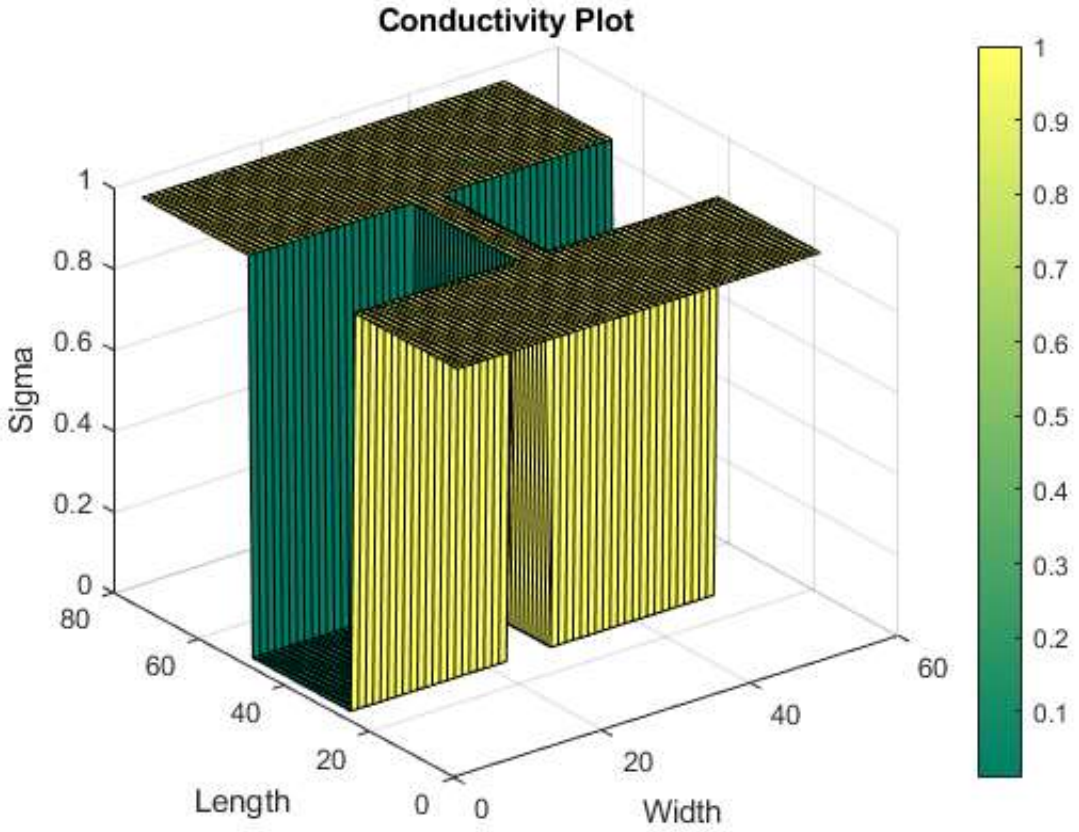
0.7
0.6
0.5
0.4
0.3
0.2
0.1


Conductivity Plot
Sigma
1
0.8
0.6
0.4
0.2
0
80
60
40
20
0
Length
0
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Width
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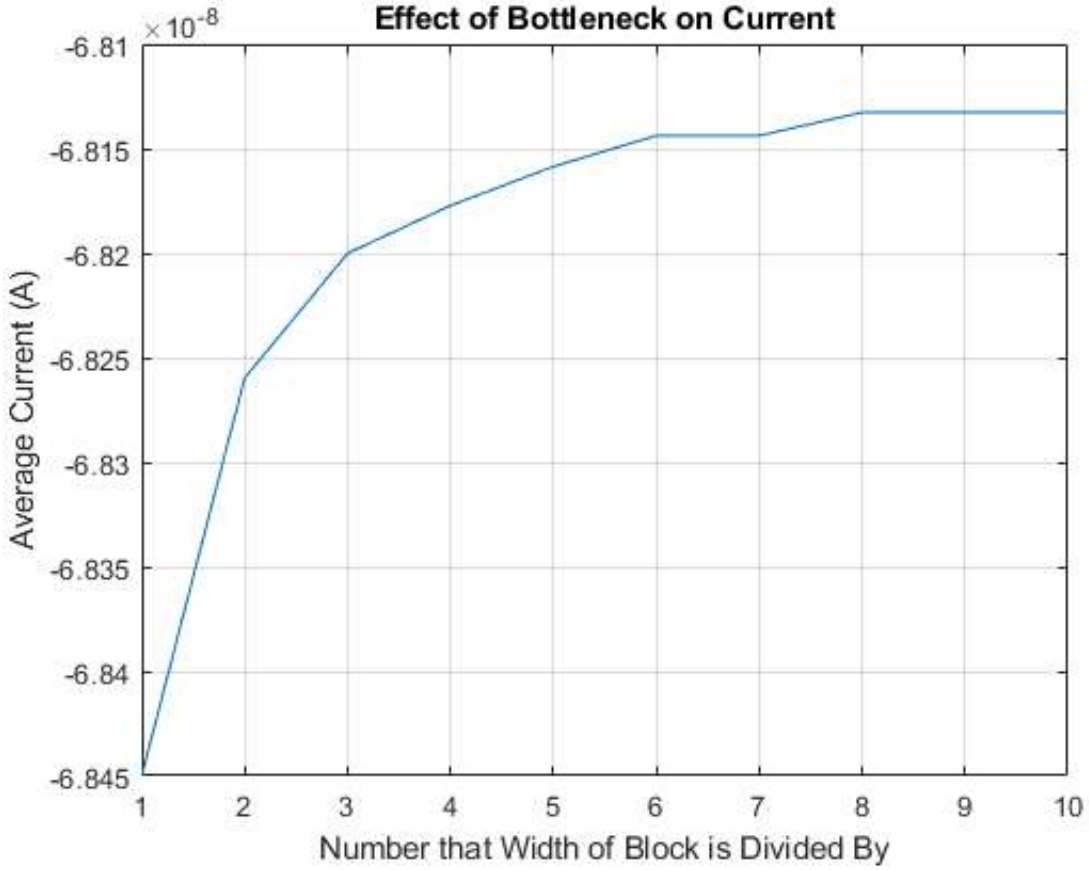
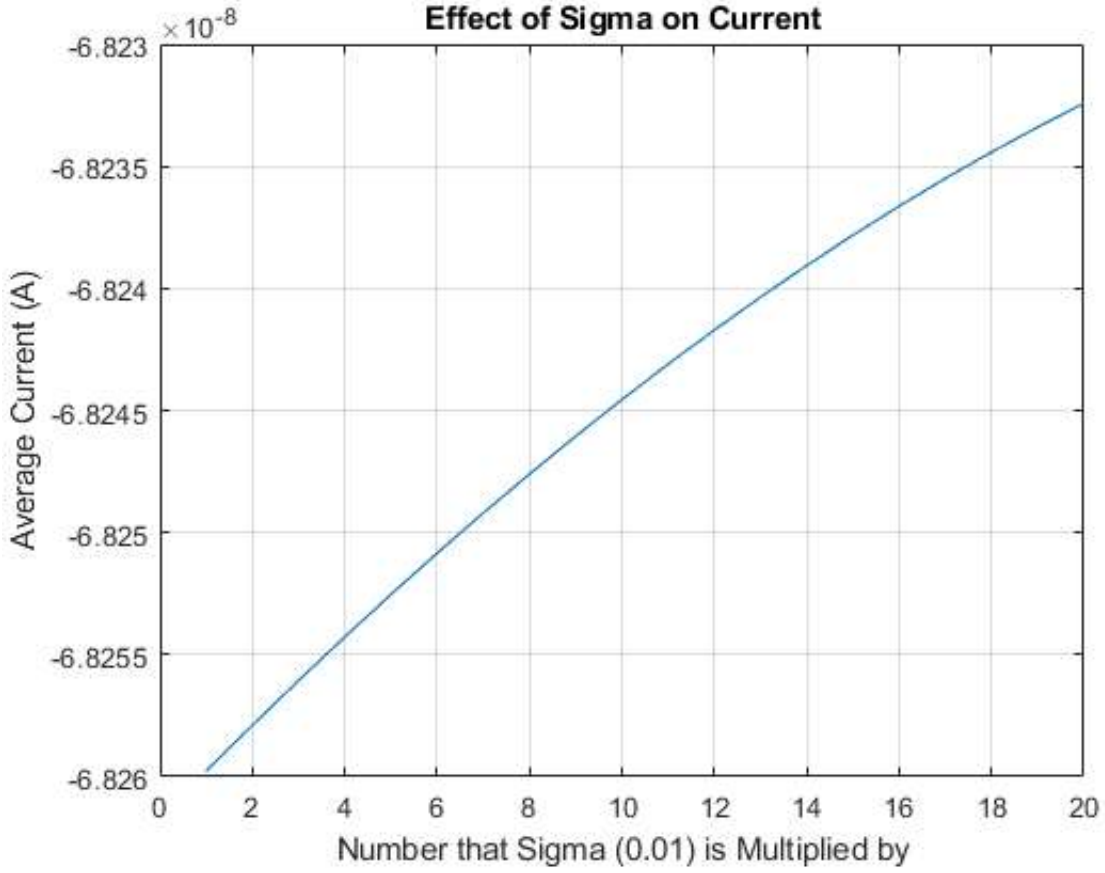


PART D: Varying the conductivity to see how it changes the current

```
part_2_sigma;
```



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