Optimization Techniques

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5 TH SEM CE SHIFT 2

PRACTICAL 13: Represent Primal and Dual of one of two LPP problem given earlier in graph with manual conversion.

Primal Problem:

Z=(0.09*X)+(0.15*Y)

9*X+15*Y >=6000000

5*X+15*Y <=3000000

Where x,y>=0

```
[X,Y]=meshgrid(0:100);
>> Z=(0.09*X)+(0.15*Y);
>> contour(X,Y,Z,40);
>> hold on;
>> XX=[0:5:50];
>> YY1=f1(XX);
>> YY2=f2(XX);
>> plot(XX,XX,YY1,YY2,1,1,'033','',[2 4 8 12]);
>>title('Plotting Primal');
```

CODE IN f1.m:

```
function X=f1(Y)
```

X=((6000000-15*Y)/9);

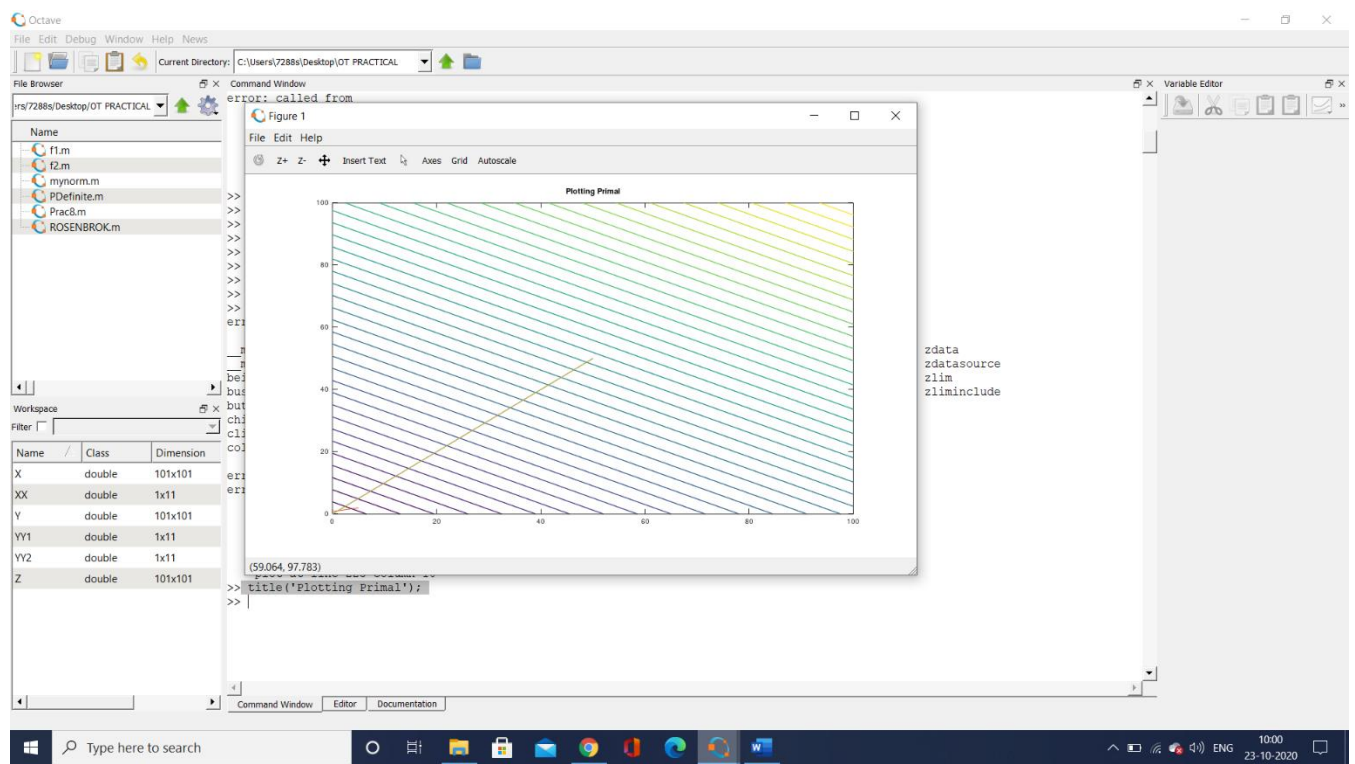endfunction

CODE IN f2.m:

function X=f2(Y)

X=((3000000-8*Y)/5);

endfunction

OUTPUT:

Dual Problem:

Z=(0.09*X)+(0.15*Y)

9*X+15*Y >=6000000

5*X+15*Y <=3000000

Where x,y>=0


```
[X,Y]=meshgrid(0:100);
>> Z=(0.09*X)+(0.15*Y);
>> contour(X,Y,Z,40);
>> hold on;
>> XX=[0:5:50];
>> YY1=f1(XX);
>> YY2=f2(XX);
>> plot(XX,XX,YY1,YY2,1,1,'035','',[2 4 8 12]);
>>title('Plotting Dual');
```

CODE IN fd1.m:

```
function X=fd1(Y)
 X=((6000000-9*Y)/15);
endfunction
```

CODE IN fd2.m:

```
function X=fd2(Y)
X=((3000000-5*Y)/8);
endfunction
```

OUTPUT: