

HOME PLOTS APPS

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FILE VARIABLE CODE SIMULINK ENVIRONMENT RESOURCES

C:\Users\ajayb\Documents\MATLAB\CS LAB\ES LAB

Current Folder

Name ▾

- EXPT2.slx
- expt4.m
- expt4.asv
- expt3l.m
- expt3.m
- expt3.1.m
- 15-2-21.m

Details ▾

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Command Window

```
>> %%open loop response of transfer function 1
>> p=[1];
>> q=[1 3 2];
>> G=tf(p,q);
>> figure(1)
>> step(G);
>> title('step response of 1/((s+1)(s+2))');
>> %%closed loop response of the transfer function
>> p=[1];
>> q=[1 3 2];
>> G=tf(p,q);
>> t=feedback(G,1)

t =

      1
-----
s^2 + 3 s + 3

Continuous-time transfer function.

>> step(t);
>> figure(2);
>> step(t);
>> title('step response of closed loop positive feedback');
>> %%closed loop response for unity negative feedback
>> p=[1];
>> q=[1 3 2];
>> G=tf(p,q);
>> t=feedback(G,-1);
>> figure(3)
>> step(t);
```

Workspace

Name	Value
G	1x1 tf
p	1
q	[1,3,2]
t	1x1 tf

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FILE NAVIGATE EDIT BREAKPOINTS RUN

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C:\Users\ajayb\Documents\MATLAB\CS LAB\expt5.m

Current Folder

Name

- secondorder-damping.mat
- freq-resp1.mat
- firstorder-step.mat
- firstorder-impulse.mat
- expt5.m
- effectofzeroes.mat
- effectofpoles.mat
- CS LAB

Details

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Editor - C:\Users\ajayb\Documents\MATLAB\CS LAB\expt5.m

```
expt5.m x +
1 %% closed loop response for the transfer function with pole at -1 in feedback path
2 - p=[1 1];
3 - q=[1 4 5 3];
4 - G=tf(p,q);
5 - figure(1)
6 - step(G);
7 - title('step response for the transfer function with pole at -1 in feedback path for negative feedback')
8
9 %%closed loop response for the transfer function with pole at -1 in
10 %%feedback path in positive path
11 - p=[1 1];
12 - q=[1 4 5 1];
13 - G=tf(p,q);
14 - figure(4)
15 - step(G);
16 - title('step response for the transfer function with pole at -1 in feedback path for positive feedback')
```

Workspace

Name	Value
G	1x1 tf
p	[1,1]
q	[1,4,5,1]
t	1x1 tf

Command Window

```
>> title('step response of closed loop unity negative feedback');
>>
>> expt5
>> expt5
>> expt5
fx >> %%
```

UITF-R

script

Ln 16 Col 104

02:43 PM

17-02-2021

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C:\Users\ajayb\Documents\MATLAB\CS LAB\expt5.m

Current Folder

Name

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- expt5.m
- effectofzeros.mat
- effectofpoles.mat
- FS LAB

Details

Select a file to view details

Editor - C:\Users\ajayb\Documents\MATLAB\CS LAB\expt5.m

```
expt5.m
12 - q=[1 4 5 1];
13 - G=tf(p,q);
14 - figure(4)
15 - step(G);
16 - title('step response for the transfer function with pole at -1 in feedback path for positive feedback')
17 - %% closed loop response for the transfer function with zero at -1 in feedback path for negative feedback
18 - p=[1];
19 - q=[1 4 3];
20 - G=tf(p,q);
21 - figure(5)
22 - step(G);
23 - title('step response for the transfer function with zero at -1 in feedback path for negative feedback')
24 -
25 - %% closed loop response for the transfer function with zero at -1 in feedback path for positive feedback
26 - p=[1];
27 - q=[1 2 1];
28 - G=tf(p,q);
29 - figure(6)
30 - step(G);
31 - title('step response for the transfer function with zero at -1 in feedback path for positive feedback')
32 -
33 -
34 -
```

Command Window

```
>> expt5
>> expt5
>> expt5
>> expt5
>> expt5
fx >> %%
```

Workspace

Name	Value
G	1x1 tf
p	1
q	[1,2,1]
t	1x1 tf



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FILE NAVIGATE EDIT BREAKPOINTS RUN

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- ES LAB

Details

Select a file to view details

Editor - C:\Users\ajayb\Documents\MATLAB\CS LAB\expt5.m

```
expt5.m x +
1  %%open loop response of transfer function 1
2  p=[1];
3  q=[1 1 -2];
4  G=tf(p,q);
5  figure(1)
6  step(G);
7  title('step response of 1/((s-1)(s+2))');
8  %%closed loop response of the transfer function for positive feedback
9  p=[1];
10 q=[1 1 -2];
11 G=tf(p,q);
12 t=feedback(G,1);
13 step(t);
14 figure(2);
15 step(t);
16 title('step response of closed loop positive feedback');
17 %%closed loop response for unity negative feedback
18 p=[1];
19 q=[1 1 -2];
20 G=tf(p,q);
21 t=feedback(G,-1);
22 figure(3)
23 step(t);
24 title('step response of closed loop unity negative feedback');
25 %% closed loop response for the transfer function with pole at -1 in feedback path
26 p=[1 1];
27 q=[1 2 -1 -1];
28 G=tf(p,q);
29 figure(4)
30 step(G);
```

Command Window

Workspace

Name	Value
G	1x1 tf
p	1
q	[1,0,-3]
t	1x1 tf

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Run Run and Advance Run and Time

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```
expt5.m
26 - p=[1 1];
27 - q=[1 2 -1 -1];
28 - G=tf(p,q);
29 - figure(4)
30 - step(G);
31 - title('step response for the transfer function with pole at -1 in feedback path for negative feedback')
32
33 %%closed loop response for the transfer function with pole at -1 in
34 %%feedback path in positive path
35 - p=[1 1];
36 - q=[1 2 -1 -3];
37 - G=tf(p,q);
38 - figure(5)
39 - step(G);
40 - title('step response for the transfer function with pole at -1 in feedback path for positive feedback')
41 %% closed loop response for the transfer function with zero at -1 in feedback path for negative feedback
42 - p=[1];
43 - q=[1 2 1];
44 - G=tf(p,q);
45 - figure(6)
46 - step(G);
47 - title('step response for the transfer function with zero at -1 in feedback path for negative feedback')
48
49 %% closed loop response for the transfer function with zero at -1 in feedback path for positive feedback
50 - p=[1];
51 - q=[1 0 -3];
52 - G=tf(p,q);
53 - figure(7)
54 - step(G);
55 - title('step response for the transfer function with zero at -1 in feedback path for positive feedback')
```

Command Window

Workspace

Name	Value
G	1x1 tf
p	1
q	[1,0,-3]
t	1x1 tf

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Breakpoints BREAKPOINTS

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```
expt5.m x +
1 %%open loop response of transfer function 1
2 p=[1];
3 q=[1 0];
4 G=tf(p,q);
5 figure(1)
6 step(G);
7 title('step response of 1/(10s)');
8 %%closed loop response of the transfer function for positive feedback
9 p=[1];
10 q=[1 0];
11 G=tf(p,q);
12 t=feedback(G,1);
13 step(t);
14 figure(2);
15 step(t);
16 title('step response of closed loop positive feedback');
17 %%closed loop response for unity negative feedback
18 p=[1];
19 q=[1 0];
20 G=tf(p,q);
21 t=feedback(G,-1);
22 figure(3)
23 step(t);
24 title('step response of closed loop unity negative feedback');
25 %% closed loop response for the transfer function with pole at -1 in feedback path
26 p=[1 1];
27 q=[10 10 1];
28 G=tf(p,q);
29 figure(4)
30 step(G);
```

Command Window

Workspace

Name ▾	Value
G	7x1 tf
p	1
q	[9 -1]
t	7x1 tf



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Editor: C:\Users\ajayb\Documents\MATLAB\CS LAB\expt5.m

```
expt5.m
26 - p=[1 1];
27 - q=[10 10 1];
28 - G=tf(p,q);
29 - figure(4)
30 - step(G);
31 - title('step response for the transfer function with pole at -1 in feedback path for negative feedback')
32
33 %%closed loop response for the transfer function with pole at -1 in
34 %%feedback path in positive path
35 - p=[1 1];
36 - q=[10 10 -1];
37 - G=tf(p,q);
38 - figure(5)
39 - step(G);
40 - title('step response for the transfer function with pole at -1 in feedback path for positive feedback')
41 %% closed loop response for the transfer function with zero at -1 in feedback path for negative feedback
42 - p=[1];
43 - q=[11 1];
44 - G=tf(p,q);
45 - figure(6)
46 - step(G);
47 - title('step response for the transfer function with zero at -1 in feedback path for negative feedback')
48
49 %% closed loop response for the transfer function with zero at -1 in feedback path for positive feedback
50 - p=[1];
51 - q=[9 -1];
52 - G=tf(p,q);
53 - figure(7)
54 - step(G);
55 - title('step response for the transfer function with zero at -1 in feedback path for positive feedback')
```

Command Window

Workspace

Name	Value
G	1x1 tf
p	1
q	[9 -1]
t	1x1 tf