

# ECE 257 - LESSON 13

## ACCESS TO VARIABLES AND FUNCTIONS

SPRING 2007

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### IN CLASS

#### ACCESSING VARIABLES IN PROGRAMS

1. Sharing variables between programs

```
share1.m
    clc
    clear
    x = 3
```

```
share2.m
    x
```

- a. What happens when share1 and then share2 is run
- b. Do these programs have access to each other's variables

#### ACCESSING VARIABLES IN FUNCTIONS

2. Sharing variables between programs and functions

```
share3.m
    clc
    clear
    share4
    x
```

```
share4.m
    function share4
    x = 3
    end % end share4
```

- a. What happens when share3 is run
- b. Do these programs have access to each other's variables. How can you tell
- c. How can the function be changed so share3 has access to the value of x

3. Sharing variables between programs and functions

```
share5.m
    clc
    clear
    x = 3
    share6
```

```
share6.m
    function share6
    x
    end % end share6
```

- a. What happens when share3 is run

- b. Do these programs have access to each other's variables. How can you tell
- c. How can the function be changed so it has access to the value of x in share5

## GLOBAL VARIABLES

- 4. Using global variables to share data and variables - especially constants like the speed of light and the charge on an electron

```
share7.m
clc
clear
global G
G = 2
x = 3
y = share8(x)
```

```
share8.m
function a = share8(b)
global G
a = G*b
end % end share8
```

- a. Why did we declare G global in both the script and the function
- b. Why did we use all capital letters for G

## BREAKPOINTS

- 5. Using breakpoints in functions

```
share9.m
clc
clear
x = 3
● y = share10(x)
```

```
share10.m
function a = share10(b)
● a = 2*b;
● end % end share10
```

- a. What happens when share9 is run and we step through the breakpoints
- b. Why does Matlab restrict access to variables between programs and functions