

# EECS10 Discussion Week2

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# Unix System Environment

- Unix system commands
  - **echo** print a message
  - **date** print the current date and time
  - **ls** list the contents of the current directory
  - **cat** list the contents of files
  - **more** list the contents of files page by page
  - **pwd** print the path to the current working directory
  - **mkdir** create a new directory
  - **cd** change the current directory
  - **cp** copy a file
  - **mv** rename and/or move a file
  - **rm** remove (delete) a file
  - **rmdir** remove (delete) a directory
  - **man** view manual pages for system commands

# Standard input/output functions

- Standard output function

```
int printf ( const char *format, ... );  
#include <stdio.h>  
int foo;  
printf("foo value is %d. \n", foo);
```

- Standard input function

```
int scanf (const char *format, ... );  
#include <stdio.h>  
int bar;  
scanf("%d", &bar);
```

# Operators

- Arithmetic operators e.x.
  - left-shift operator  $\ll$  and right-shift operator  $\gg$ 
    - $1 \ll 5 = 1 * (2^5) = 32$
    - $3 \gg 2 = 3 / (2^2) = 0$
- Evaluation order e.x.
  - $3 \ll 2 * 4 = 768$
  - $(3 \ll 2) * 4 = 48$
- Relational operators:
  - $>$ ,  $<$ ,  $\leq$ ,  $\geq$ ,  $==$ ,  $!=$
- logical operators:
  - $!$ ,  $\&\&$ ,  $\|\|$
- Relational and logical operator returns:
  - 0 : false
  - 1 : true
- Example : if  $a = 4$  and  $b = 0$ , what does  $(a > 4) \|\| (b < 10)$  return ? 1

# If-statement

- if (*condition*)  
do something  
*condition*: is expression with relational or logical operator

Example :

```
if (a == 0 && b == 0)  
    printf("Both a and b are zero!\n");
```

# Assignment 3 Part 1

- Compute the approximate value of  $\tan(x)$  using Taylor series expansion
- Bonus part: check input value for  $\tan(x)$
- Let's now do some coding ...

# Assignment 3 Part 2

- Use Cramer's rule to solve  $2 \times 2$  linear equations
- What shall we do when determinant of coefficients equal to zero?
- Let's do more coding ...