# 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 << and right-shift operator >>
    - 1<<5 = 1 * (2^5) = ?
    - 3>>2 = 3 / (2^2) = ?
- Evaluation order e.x.
  - 3 << 2 * 4 = ?
  - (3 << 2) * 4 = ?
- Relational operators:
  - >, < , <=, >=, ==, !=
- 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 ?

# If-statement

- if (*condition*)
  do something

co*ndition*: 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 $e^x$ using infinite sum
- Let's now do some coding by calculating sin(x) value using Taylor series expansion:

$$\sin(x) = \sum_{n=0}^{\infty} \frac{\left(-1^n x^{(2n+1)}\right)}{(2n+1)!} = x - \frac{x^3}{6} + \frac{x^5}{120} - \frac{x^7}{5040} + \frac{x^9}{362880}$$

# Assignment 3 Part 2

- Calculate the day of the week for Gregorian calendar using Zeller's algorithm
- Let's do more coding ...