CS13 Syllabus / Lecture one

What to review from cse 12:
- binary arithmetic
- memory
- registers
- pointers
- instructions
- addressing modes

Grading
- Assignments: 50%
- exams's 30%
- Quizzes: 20%

turn notes in before mondays

have to create a design document for the projects

vi / vim
- text editor on unix

Normal mode of vim
- allows you to move
- Basic Commands:

  h - move cursor left one space

  J - move down

  K - move up

  I - more right

  :wq - save & quit file

  :q! - quit w/out saving

  :%s/hello/goobye/g - replace "hello" with "goodbye"

  :n - jump to line # n

d = delete

w = word

diw = delete in word

3dl = deletes 3 characters to the right

Insert mode

-add text to a file

- pressing I takes you here

- pressing escape takes you out

vim cheat sheet

H - move to top

M - move to the middle

L - move to bottom

w - jump to start of word

e - same as w

b - jumps backward to start a word

% - move to matching character

^ - J to 1st non-blank character

gg - go to first line of document

G - go to last line of document

r - replace a single character

cc - change & replace entire line

C - change to end of the line

ciw - change in word

U - undo

CTRL + r - redo

. - repeat last command

yy - copy line into buffer

y - yank to end of line

p - paste from buffer

o - open new line below current line

Documentation

include : Design . pdf

· writeup . pdf

Section #1, Lab 0

```
sudo apt upgrade
sudo apt update

sudo apt -f install clang
cd .. go back one

cp cse13 ~/CSE13S/assgn0/.
    cd ~/CSE13S/asgn0
        ls
    mv .cse13s.clang-format .clang-format
clang-format -i -style=file hello.c
git log

    touch file name
        ls
    git add file name
ls ~/Downloads
mv ~/Downloads/Cheating.pdf .
```

Source code control using Git

- a Collaboration tool
- Can get files back, or go back
  - ssh: Secure shell
    ↳ lets computer communicate with another
  - ↳ encrypted data
  - ↳ you should use rsa for class
    ↳ too late for this
    ↳ ssh key is the safest

RSA

- public key cryptography
- two large prime numbers
- mult them together
- pick a random num
- find a r where random num $= 1$ (mod) (1st prime num-1) (2nd-1

Encryption: $E(m) = m^6 \mod n = c$

Decryption: $D(c) = c^d \mod n = m$

p & q are kept secret

miller rabin prime testing

Source code control

multiple versions of your file
↳ stored in a repository

directory • git contains chunck of my file
↳ never delete this

Common Commands

git clone

git add - add files to the repository

git commit - am "msg" →Dversion of file

git push - sends changes to remote repository

git pull - pulls the update

git pull -- rebace - gets a copy from server

Intro to programming in C

- #include <stdio.h> →▷ standart I/O package

-always only one main function (void + no arguments)

- always return a number = 0

- 0 ι c = albosure zero

int main(void)

- one main program

- returns an int as its start's value

- curly brace language

- while is the simplest loop, a top-test loop

  ↳meanng it evaluates it first

printf = prints things

  ↳ %.6.if = format string

    %-3, ▷ 3 digit. of %.6- if \h "

for loop

  - top rest loop

  - specified everthng

Char %s, C = Character

  int i ;

  float f;

double d;

have to declare variables before using them
    ↳ specify its type

-real numbers not a thing in computers

each pair of curly braces introduces a scope
    ↳ where the variable exists or is defined

-look at scope rules

scope of variables as small as possible
    ↳ should be local

getchar() → get character

putchar (✝) write characters

if = executes the next statement if boolean = T

int bigger than character

use (3 ξ) for if statements

vade mecum

Commands to know

git add
git commit
git push
git pull
git log - commit history
git status - files what is modified
git stash - get rid of local changes
git ls-files - files in git Lab
git log - commit #OS
→ previos command

float f: