Introduction CSE 3615

www.cse.wustl.edu/~roger/3615.html
roger@wustl.edu
cse 3615@ cse.wustl.edu

Course topics
understanding "complicate" system
how does machine w/ system software
and appl. software all interact

how does system soft. serve mach. and appl?
how appl take advantage of
machine + syst. soft.

Included:
data representation
bit, bytes vs. information
interativeinstr. arch. (ISA)
memory hierarchy
cache, virtual mem.

"bottom half of os, dealing with
real machine"
HW  ~ 20%
Lab  ~ 20%
Project ~ 20%
Midterm  ~ 15%
Final  ~ 20%

Benefits
- Understand pointers
- Ease transition from Java to C/C++
- Linux exp.
- Exp w/ ARM tools: gcc, gdb
- Basics of malwares

General purpose + Embedded systems

Abstract levels
- Application
- Middleware
- Machine lang
- Processor
- Logic gates
- VLSI technology
Hello.c

Compile Hello.c to executable (hello)
```bash
gcc hello.c -o hello
```

Compile hello.c to assembly (hello.s)
```bash
gcc -S hello.c
```

Compile hello.c to object code (hello.o)
```bash
gcc -c hello.c
```

Link object files to executable
```bash
gcc hello.o -o hello
```

Optimize
```bash
gcc -O2 hello.c -o hello
```

All options
```bash
man gcc
```