

Professor Chung Yung

# SYSTEM PROGRAMMING

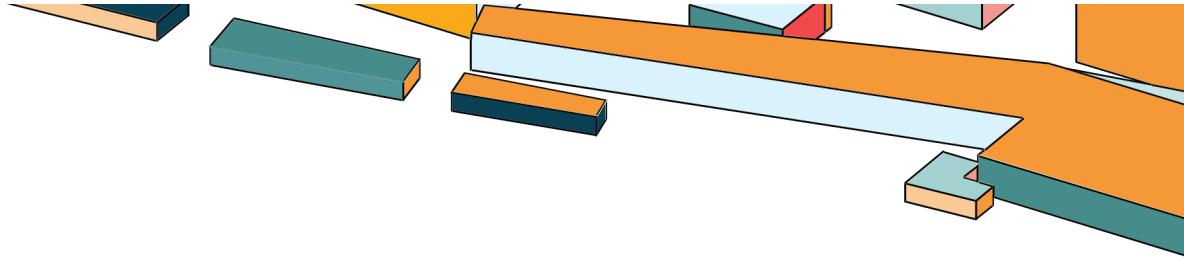
CSIE Dept., NDHU, Fall 2024

Assignment Notes #2



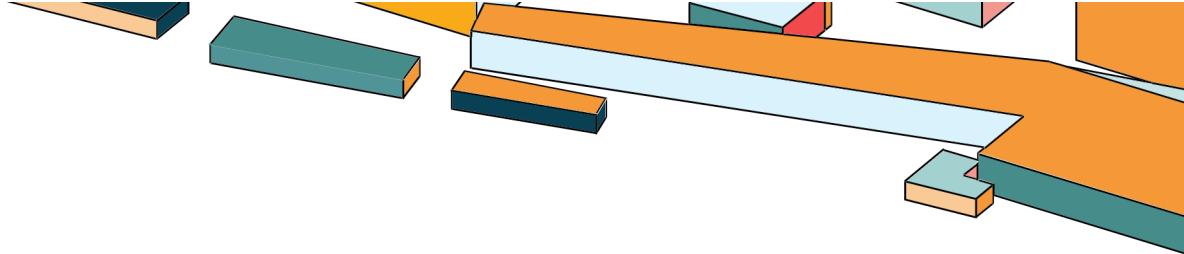
# DEMONSTRATION

Lecturer's Solution



# SNAPSHOT 1

```
APPLEde-Mac-mini:Simulator yung$ ./simulate
SIC Simulator> load test1.txt
test1.txt is loaded successfully! (Starts at 1000, Length = 107A.)
SIC Simulator> show
001000  14103348  20390010  36281030  30101548
001010  20613C10  0300102A  0C103900  102D0C10
001020  36482061  0810334C  0000454F  46000003
001030  000040XX  XXXXXXXX  XXXXXXXX  XXXXXXXX
001040  XXXXXXXX  XXXXXXXX  XXXXXXXX  XXXXXXXX
001050  XXXXXXXX  XXXXXXXX  XXXXXXXX  XXXXXXXX
001060  XXXXXXXX  XXXXXXXX  XXXXXXXX  XXXXXXXX
001070  XXXXXXXX  XXXXXXXX  XXXXXXXX  XXXXXXXX
001080  XXXXXXXX  XXXXXXXX  XXXXXXXX  XXXXXXXX
001090  XXXXXXXX  XXXXXXXX  XXXXXXXX  XXXXXXXX
0010A0  XXXXXXXX  XXXXXXXX  XXXXXXXX  XXXXXXXX
0010B0  XXXXXXXX  XXXXXXXX  XXXXXXXX  XXXXXXXX
0010C0  XXXXXXXX  XXXXXXXX  XXXXXXXX  XXXXXXXX
0010D0  XXXXXXXX  XXXXXXXX  XXXXXXXX  XXXXXXXX
0010E0  XXXXXXXX  XXXXXXXX  XXXXXXXX  XXXXXXXX
0010F0  XXXXXXXX  XXXXXXXX  XXXXXXXX  XXXXXXXX
001100  XXXXXXXX  XXXXXXXX  XXXXXXXX  XXXXXXXX
```



## SNAPSHOT 2

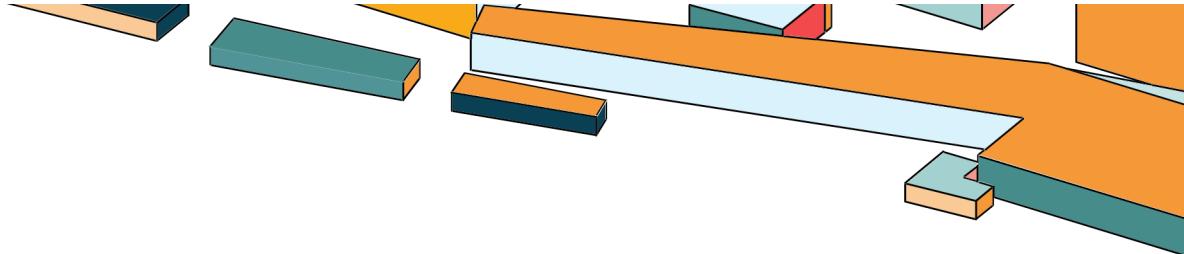
```
002000  XXXXXXXX  XXXXXXXX  XXXXXXXX  XXXXXXXX  
002010  XXXXXXXX  XXXXXXXX  XXXXXXXX  XXXXXXXX  
002020  XXXXXXXX  XXXXXXXX  XXXXXXXX  XXXXXXXX  
002030  XXXXXXXX  XXXXXXXX  XX041030  001030E0  
002040  205D3020  3FD8205D  28103030  20575490  
002050  392C205E  38203F10  10364C00  00F10010  
002060  00041030  E0207930  20645090  39DC2079  
002070  2C103638  20644C00  0005  
  
SIC Simulator> run  
Start running the program.  
Please input a character: a  
Please input a character: b  
Please input a character: c  
Please input a character: @  
Output a character: [a]  
Output a character: [b]  
Output a character: [c]  
Please input a character: @  
Output a character: [a]  
Register A = [000061];  
Register X = [000041];  
Register L = [000000];  
Register SW = [000001];  
Register PC = [00102A];  
Program execution ended!  
SIC Simulator> □
```

# SNAPSHOT 3

```
SIC Simulator> show
001000 14103348 20390010 36281030 30101548
001010 20613C10 0300102A 0C103900 102D0C10
001020 36482061 0810334C 0000454F 46000003
001030 00004000 00000000 03454F46 XXXXXXXX
001040 XXXXXXXX XXXXXXXX XXXXXXXX XXXXXXXX
001050 XXXXXXXX XXXXXXXX XXXXXXXX XXXXXXXX
001060 XXXXXXXX XXXXXXXX XXXXXXXX XXXXXXXX
001070 XXXXXXXX XXXXXXXX XX616263 XXXXXXXX
001080 XXXXXXXX XXXXXXXX XXXXXXXX XXXXXXXX
001090 XXXXXXXX XXXXXXXX XXXXXXXX XXXXXXXX
0010A0 XXXXXXXX XXXXXXXX XXXXXXXX XXXXXXXX
0010B0 XXXXXXXX XXXXXXXX XXXXXXXX XXXXXXXX
0010C0 XXXXXXXX XXXXXXXX XXXXXXXX XXXXXXXX
0010D0 XXXXXXXX XXXXXXXX XXXXXXXX XXXXXXXX
0010E0 XXXXXXXX XXXXXXXX XXXXXXXX XXXXXXXX
0010F0 XXXXXXXX XXXXXXXX XXXXXXXX XXXXXXXX
```

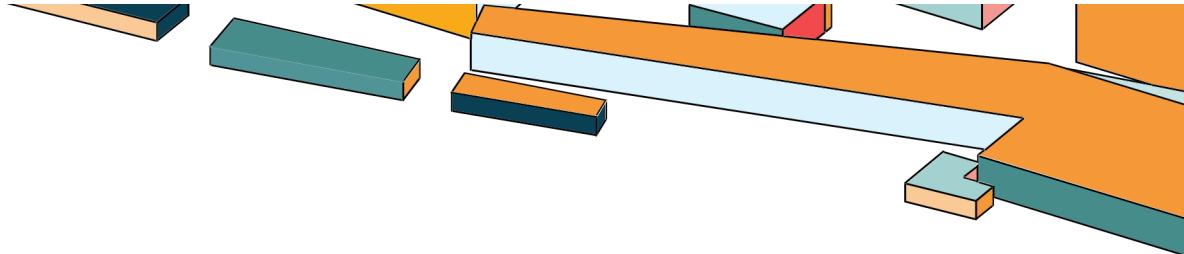
```
002000 XXXXXXXX XXXXXXXX XXXXXXXX XXXXXXXX
002010 XXXXXXXX XXXXXXXX XXXXXXXX XXXXXXXX
002020 XXXXXXXX XXXXXXXX XXXXXXXX XXXXXXXX
002030 XXXXXXXX XXXXXXXX XX041030 001030E0
002040 205D3020 3FD8205D 28103030 20575490
002050 392C205E 38203F10 10364C00 00F10010
002060 00041030 E0207930 20645090 39DC2079
002070 2C103638 20644C00 0005
SIC Simulator>
```





## SNAPSHOT 4

```
SIC Simulator> unload
test1.txt is unloaded successfully!
SIC Simulator> load test2.txt
test2.txt is loaded successfully! (Starts at 2000, Length = 2D.)
SIC Simulator> show
002000  00201E18  20241C20  1B0C2027  00202118
002010  20241C20  1B0C202A  4C000000  00010000
002020  05000007  000003XX  XXXXXXXX  XX
SIC Simulator> run
Start running the program.
Register A  = [000009];
Register X  = [000000];
Register L  = [000000];
Register SW = [000000];
Register PC = [00201B];
Program execution ended!
SIC Simulator> show
002000  00201E18  20241C20  1B0C2027  00202118
002010  20241C20  1B0C202A  4C000000  00010000
002020  05000007  00000300  00070000  09
SIC Simulator> █
```



# SNAPSHOT 5

```
SIC Simulator> unload
test2.txt is unloaded successfully!
SIC Simulator> load test3.txt
test3.txt is loaded successfully! (Starts at 3000, Length = 15.)
SIC Simulator> show
003000  00300C18  300F0C30  124C0000  00000500
003010  0003XXXX  XX
SIC Simulator> run
Start running the program.
Register A = [000008];
Register X = [000000];
Register L = [000000];
Register SW = [000000];
Register PC = [00300C];
Program execution ended!
SIC Simulator> show
003000  00300C18  300F0C30  124C0000  00000500
003010  00030000  08
SIC Simulator> exit
test3.txt is unloaded successfully!
APPLEde-Mac-mini:Simulator yung$
```

**THAT'S ALL FOR THE  
LECTURE!**

By Professor Chung Yung.

