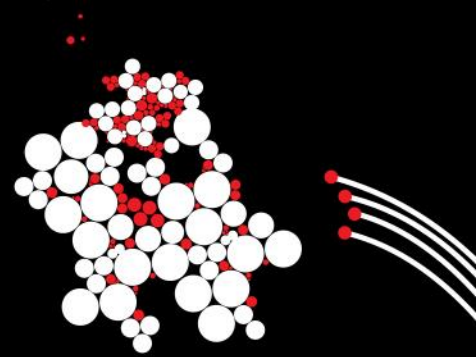


UNIVERSITY OF TWENTE.

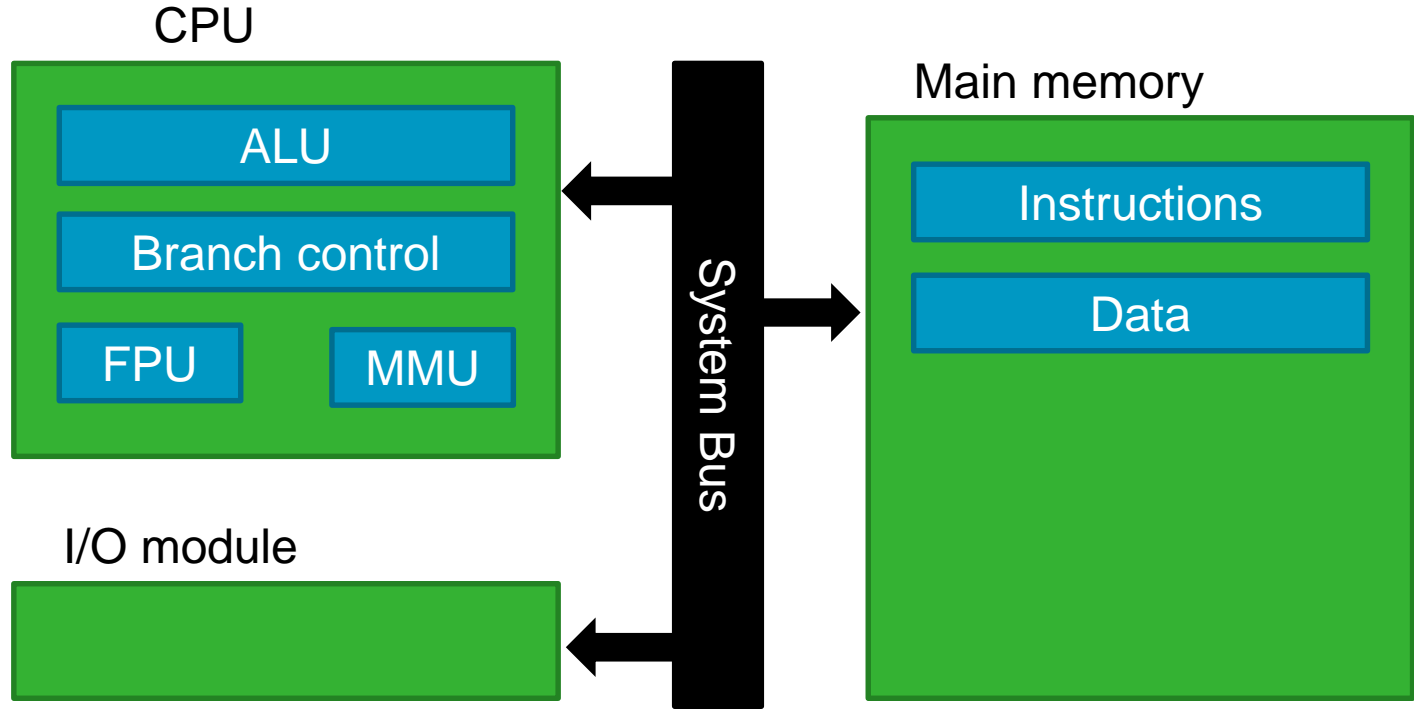
OPERATING SYSTEMS

HARDWARE

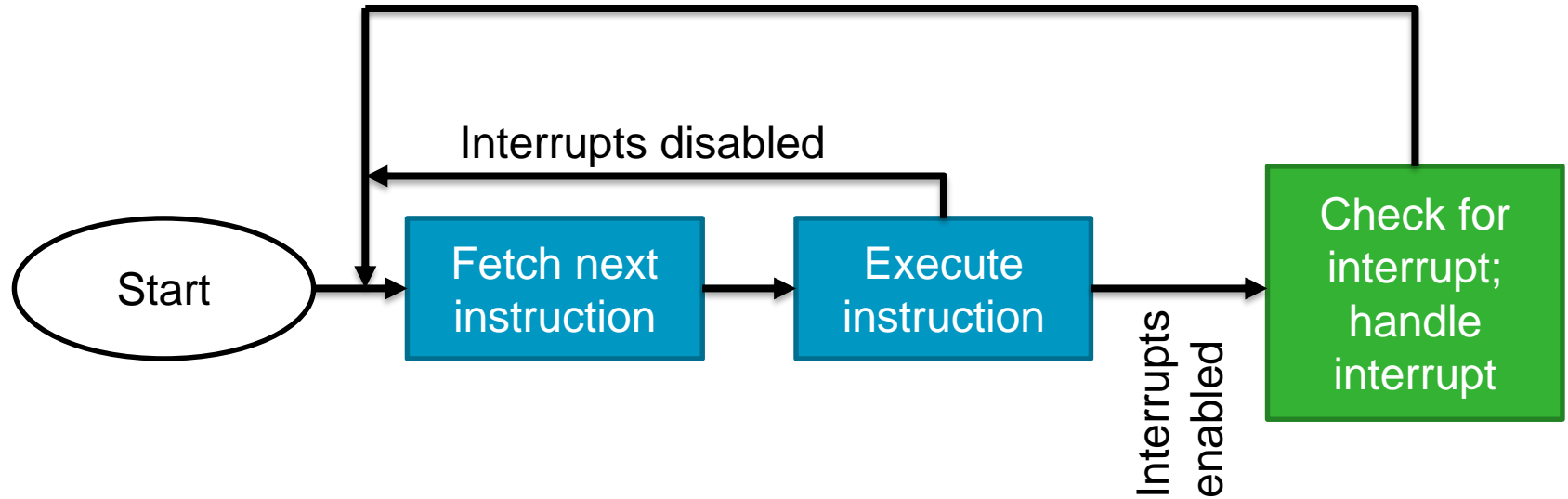
ERIK TEWS <e.tews@utwente.nl>



BASIC COMPUTER ARCHITECTURE



INTERRUPT WORKFLOW

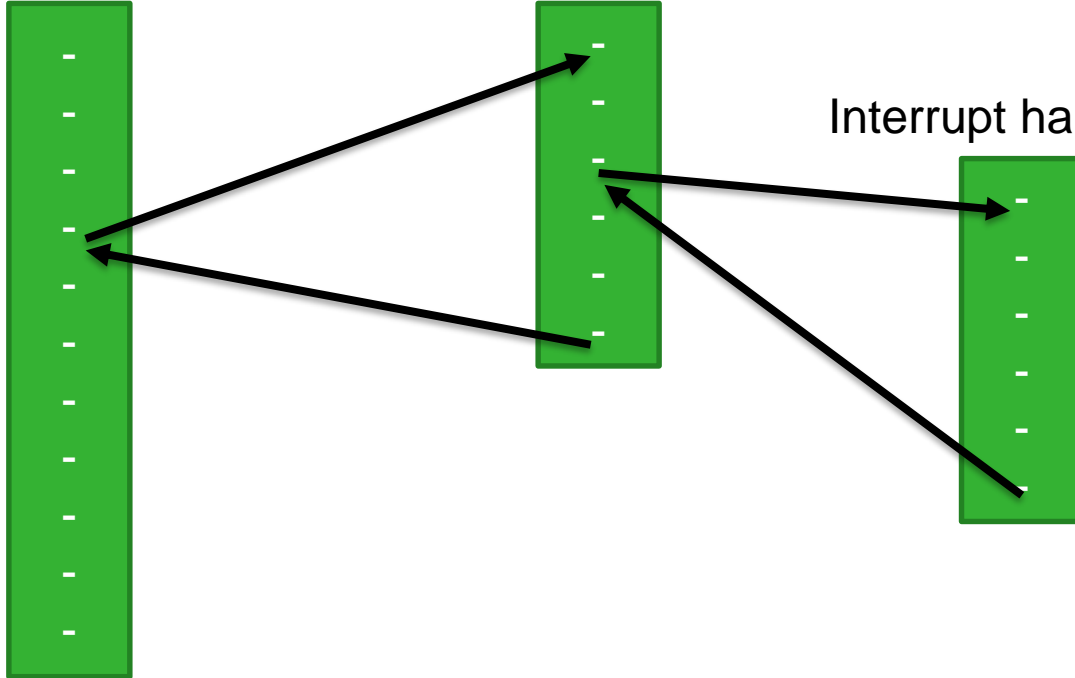


STACKS AND REGISTERS

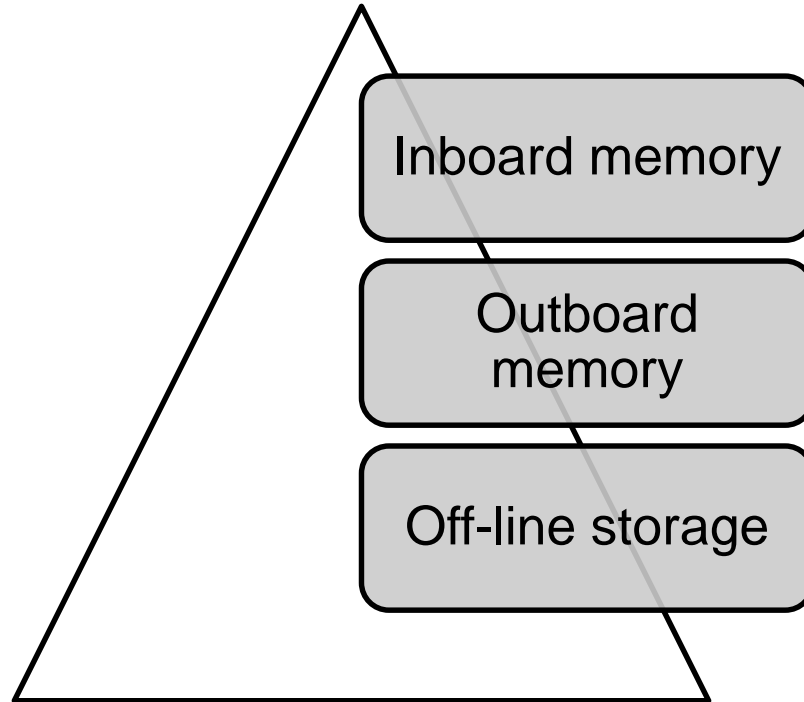
User program

Interrupt handler X

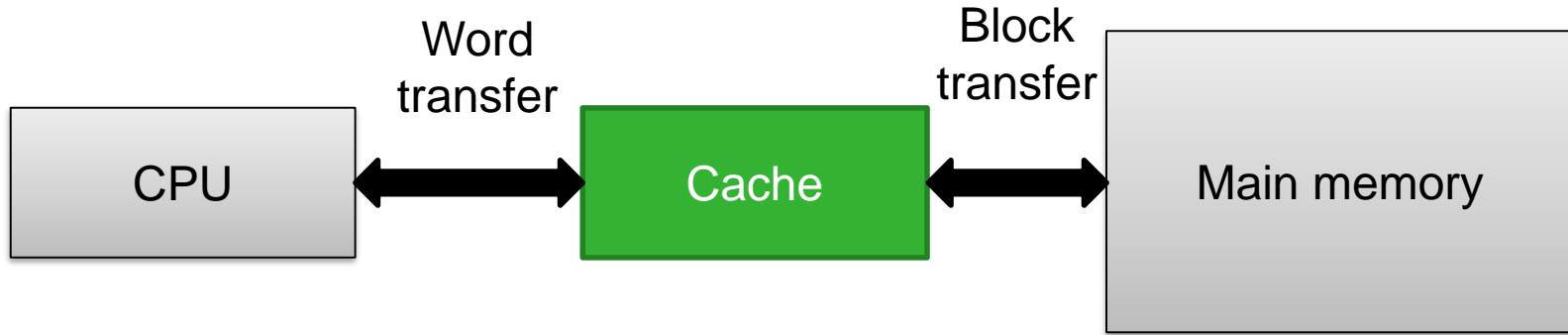
Interrupt handler Y



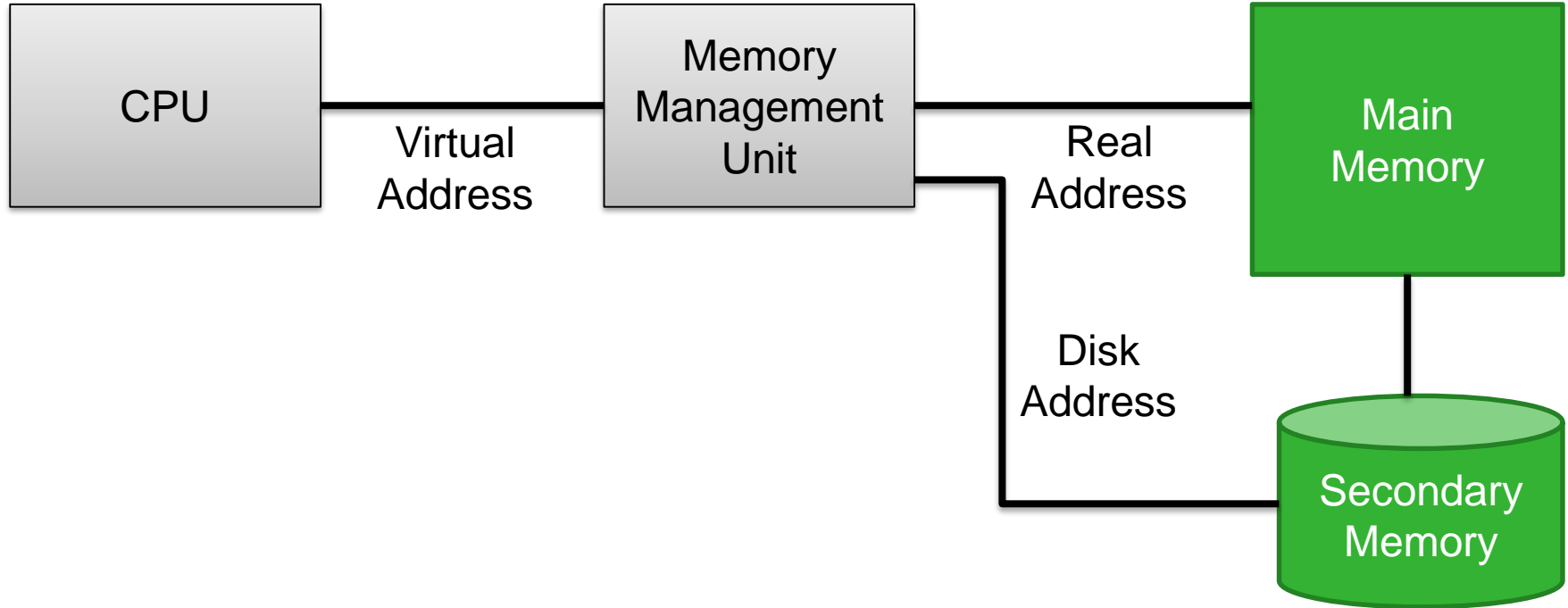
MEMORY HIRACHY



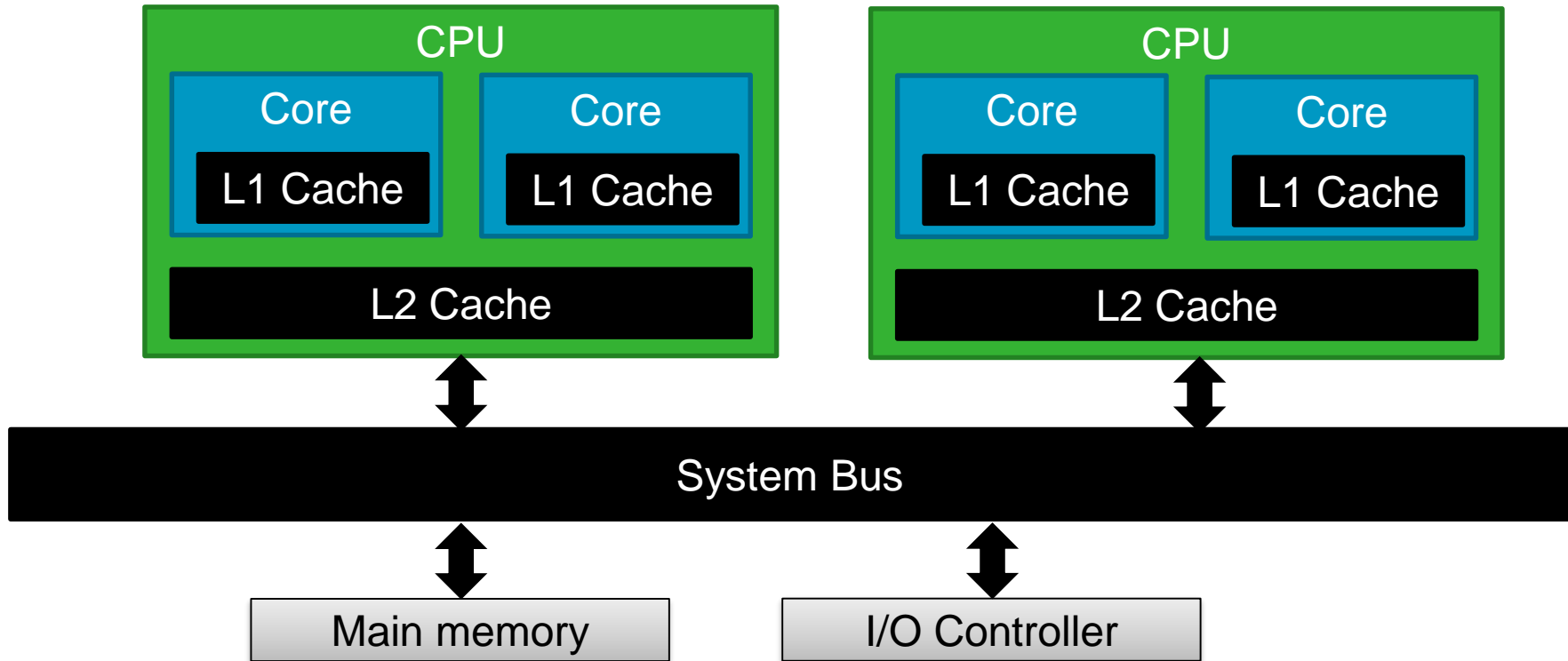
CACHES AND LOCALITY



MEMORY MANAGEMENT UNIT



MULTIPROCESSOR



WHAT KIND OF MACHINE IS THIS?

- Output?
- gcc Uname.c
- ./a.out
- man -k system
- less /usr/include/sys/utsname.h
- lspcu

```
/* Uname.c */
#include <stdio.h>
#include <sys/utsname.h>
int main(int argc, char * argv[]) {
    struct utsname u;
    if(uname(&u) == 0) {
        printf("%s %s %s %s\n",
            u.nodename, u.sysname,
            u.release, u.machine);
    } return 0;
}
```

SUMMARY

- Hardware resources
 - CPU & Instruction cycle
 - Interrupts & stack
 - Memory hierarchy & caches
 - Single & Multi processors
- Principle of locality
- Linux helps you to manage those resources