CSE 3320 Notes 9.18.2019

**Exam 1: Ch 1-5 (4-5: Palm, Mac)**

* **Basic concept**
* **Kernel, shell**
  + **Shell is not part of Kernel, since linear starts**
  + **May be hidden in Windows/MAC**
* **No Definition**
* **PCB: address point to PCB, address in PCB, Data**
  + **Address of memory**

**Sample Questions:**

1. **Run Program**

**Scanf, chdir, if, opendir, redir, system(“name”), time**

1. **Linux supports BC, not MAC:**
   * **15 graph control works on linux (NO- that’s HW comp)**
   * **Application runs on the HW**
2. **5 windows open: at least 5 PCB**
3. **PCB:**
   * **File**
   * **Device Controller**
   * **Data Structure**
   * **Memory**
4. **Ctime returns string (give ineger and return date and time)**

**Not a system call. A system call related (time)**

1. **Time returns integer (number of seconds since beginning of time)**
2. **UI direct call Kernel**
3. **System function creates a new shell and pas new things?**
4. **Readir returns a pointer to a structure (file name, type)**
5. **Next system call does not exist**
6. **Processes start with either call to system or system call, or shell**
7. **C runs on raspberry, a.out\_\_\_ remove from omega(run in linux) runs not, for different binary code (instruction set)API/ABI not the same**
8. **User cannot use assignment to TS can run another copy of TS over and over**
9. **CPM have BIOS to separate rest of Kernal (BDOS), move around OS without worries**
10. **Virtual Box vs Java VM:**
11. **Soime process from run to wait, waiting for IO, wait for timer, kkey to be hit, etc…**
12. **Chdir(cmd) 🡪 system(“Cd cmd”), would not work ddirectly for when the system leaves new shell(changes directory in new shell).**

**Overlays controlled by OS**

**CPM has 128 byte sector**

**26 sectors/track**

**77traks**

**2 Surfaces**

**Total: 512 (all minus OS – Util- BS)**

**-OS-Util-Boot Sector-**

**Dir size in sector**

**64 entries,**

**200 bytes file on a disk: directory entries 64**

**200K bytes files on a disk: 2 (512/200K)**

**PALM OS process before completing, ready wait: when something else need to run (timer…)**

**PALM: Multitasking, portable (originally came before smartphone):**

* **Cheaper version of PDA (Compare to Apple Newton)**
* **Smaller, inspired by Newton**
* **Bitmat Screen (Newton: without keyboard, with handwriting input- mostly inaccurate)**
* **Palm with Text Input Area (Grafiti)**
  + **Letters and Number area**
* **Learn handwritinhg from user (less keystrokes)**
* **Switch keys for processes switch**

**Architecture View of PALM(PDA):**

* **CPU: 32 bit**
* **Batteries (Rechargable option)**
* **Battery Life: 1-2 months**
* **Slot on top:**
  + **Small Expansion:**
    - **Memory**
    - **Camera attachment**
* **Memory:**
  + **RAM: things for changes**
  + **Virtual Disk:** 
    - **flash memory: persistent memory**
    - **ROM (Programmable)**

**OS:**

**(CPM: 1 task at a time)**

* **PDA: Multitasking, Multiple Processed (Preferable)**

**Applications:**

* **Notes**
* **Schedule**
* **Calendar**
* **Contacts**
* **Games**

**CPU only allowed one core for one processor**

* + **All above is in waiting queue, some in ready queue**

**CPU Scheduling**

* **Process (traditional multi-processes)**
  + **Create, Switch**
  + **Ready🡪 Run**
  + **Under user control, occasionally done from wait queue**
* **Memory (RAM)**
  + **Files**
  + **Not enough memory**
* **Disk/Flash**
  + **Fragmentation.**

**RAM Full (RB)**

**Fragmentation:**

**Multitasking problem?:**

**Switch**

**Memory management**

**Backup storage**

**Intro to Apple:**

* **8 bit CPU memory (1,2,3)**
* **Apple OS/MacOS**
* **8 bit Apple customed Case**
* **MAC**
  + **Xerox Sun: Palo Alto Research Center**
  + **Alto: Muse BM display, 32, 64 bit CPU, memory**

**MAC: (Single tasking single user to multitasking OS)**

* **Was One process, One user**
  + **Allowed Process Switch**
* **Developed to allow multiple processes**
  + **Yield: allow other processes to take over left over processes after completion (yield())**
    - **Cooperative Multiprocessing**
* **CPU 16🡪32🡪IMB🡪Intel (CPU Change)**
* **Backward Compactibilty** 
  + **Run old on new OS without changes (Not MAC)**
  + **Ms got the idea from IBM**