PROCESS MGMT CONTINUED

- **3 types of schedulers in Linux – LTS ; STS ; MTS**
  - ✓ LTS – New Process to Ready State (also called as Job Scheduler)
  - ✓STS – Ready to Run (also called as CPU Scheduler)
  - ✓MTS – Suspend to Resume (vice versa) – Swapper
  - ✓Feeling of Seamless or Infinite Process Creation for End User

Despite internal limit on no of processes

- ❖Degree of Multiprogramming – No of Processes in Main Memory at a given time t – controlled by the LTS
- ❖LTS Challenge – right balance of CPU bound and IO Bound processes – achieve good throughput
- ❖Swapper – serves the purpose of Context Switching

FORK System Call

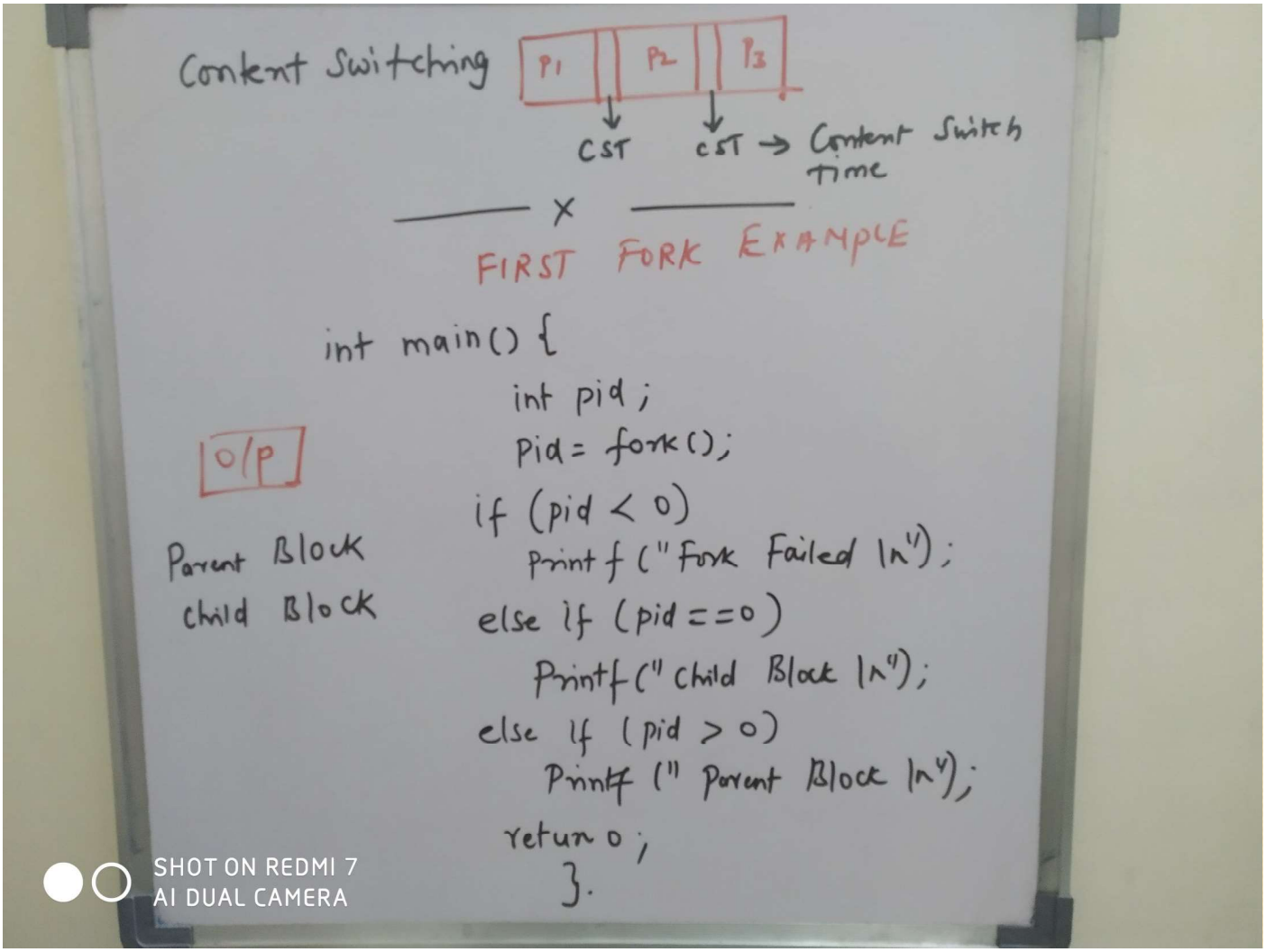
- **Why is it called Fork() – dictionary relevance!**
  - ✓ Helps in creating New Processes in Linux
  - ✓New Process is created as child of the parent process
  - ✓Parent is the calling process (normally ./a.out or main call)
  - ✓On successful fork – Two processes reside in Main Memory (Parent and Child)
- **Child Process definition – statements post the forking point**
- **Three Possible Return values of Fork() Sytem call**

  0 indicates child process control

  >0 indicates parent process control

  <0 failed fork call

- ✓cc first.c
- ✓./a.out and enter – this is parent process in execution
- ✓Leads a call to main – at fork point – a copy of a.out is created and this is the child process
- ✓By default child carries the same image as that of the parent post the forking point
- ✓Order of execution of parent / child operations / statements in in kernel's schedulers hands!
- ✓Next printf example – output statements ordering can change.
- ✓Assume parent gets the control first (which again can vary)
- ✓Subsequent sessions – other calls such as exec, variants of it, wait, etc.
- ✓Overlapped with Scheduling Algorithms – Premptive v/s Non Premptive


Content Switching
P1
P2
P3
CST
CST → Content Switch Time
FIRST FORK EXAMPLE
int main() {
int pid;
Pid = fork();
if (pid < 0)
printf("Fork Failed \n");
else if (pid == 0)
Printf("child Block \n");
else if (pid > 0)
Printf("Parent Block \n");
return 0;
}.
O/P
Parent Block
child Block
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