Parth Mangrola
861286610
Section 21
Lab 2

proc.c

- Added setpriority system call to set the priority of a process
- Modified scheduler to run processes based on schedule with 0 being highest priority and 31 the lowest priority
- If the current process' priority doesn't match then the priority increases as a form of priority aging

```
372   int  setpriority(int priority){
373
374           struct proc *p = myproc();
375           if(priority >= 0 || priority <= 31){
376                   p->priority = priority;
377                   return 0;
378           }
379           return -1;
380
381   }
```

```
 void
scheduler(void)
{
  struct proc *p;
  struct cpu *c = mycpu();
  c->proc = 0;
  int pr = 0;
  int newPr = 0;
  for(;;){
    // Enable interrupts on this processor.
    sti();
   for(pr = 0; pr < 32; pr++){
    // Loop over process table looking for process to run.
    acquire(&ptable.lock);
    for(p = ptable.proc; p < &ptable.proc[NPROC]; p++){
      if(p->state != RUNNABLE)
        continue;
      if(p->priority == pr){

      // Switch to chosen process.  It is the process's job
      // to release ptable.lock and then reacquire it
      // before jumping back to us.
      c->proc = p;
      switchuvm(p);
      p->state = RUNNING;

      swtch(&(c->scheduler), p->context);
      switchkvm();

      // Process is done running for now.
      // It should have changed its p->state before coming back.
      c->proc = 0;
      }
      else{
        newPr = p->priority;
        p->priority = newPr++;
      }
    }
    release(&ptable.lock);

   }
  }
}
```

```
 This program tests the correctness of your lab#2

  Step 2: testing the priority scheduler and setpriority(int priority)) systema call:

  Step 2: Assuming that the priorities range between range between 0 to 31

  Step 2: 0 is the highest priority. All processes have a default priority of 10

  Step 2: The parent processes will switch to priority 0

 child# 6 with priority 10 has finished!
 child# 5 with priori
ty 20 has finished!

 child# 4 with priority 30 has finished!

 if processes with highest priority finished first then its correct
```