Code Modification Report

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Prodi : Ilmu Komputer 2019

❖ **MAKEFILE**

1. Pada line 3-4

```
3 CS333_PROJECT ?= 1
4 PRINT_SYSCALLS ?= 0
```

Dalam mengerjakan Task 1, Line 4 diberi nilai 1:

```
3 CS333_PROJECT ?= 1
4 PRINT_SYSCALLS ?= 1
```

2. Pada line 16

```
16 CS333_UPROGS += _date
```

❖ **TASK 1**

1. File syscall.c, pada line 185-187

```
185    #ifdef PRINT_SYSCALLS
186      cprintf("%s -> %d\n", syscallnames[num], syscalls[num]());
187    #endif
```

❖ **TASK 2**

1. File user.h, pada line 29-30

```
29 #ifdef CS333_P1
30 int date(struct rtcdate*);
31 #endif // CS333_P1
```

2. File usys.s, pada line 33

```
33 SYSCALL(date)
```

3. File syscall.h, pada line 25

```
25 #define SYS_date     SYS_halt+1
```

4. File syscall.c, pada line 109-112

```
109 #ifdef CS333_P1
110 // internally, the function prototype must be ’int’ not ’uint’ for sys_date()
111 extern int sys_date(void);
112 #endif // CS333_P1
```

5. File syscall.c, pada line 136-138

```
136 #ifdef CS333_P1
137 [SYS_date]    sys_date,
138 #endif
```

6. File syscall.c, pada line 170-172

```
170 #ifdef CS333_P1
171 [SYS_date]      "date",
172 #endif
```

7. File sysproc.c, pada line 98-106

```
98 int
99 sys_date(void)
100 {
101 struct rtcdate *d ;
102 if(argptr(0, (void*)&d ,sizeof( struct rtcdate)) < 0 )
103 return -1;
104 cmostime(d);
105 return 0;
106 }
```

8. File date.c, pada line line 38-42

```
38 // r.hour %= 12;
39 // if (r.hour == 0) r.hour = 12;

40 printf(1, "%s %s  %d %s%d:%s%d:%s%d UTC %d\n", days[day], months[r.month], r.da
y,
```

```
41    PAD(r.hour), r.hour, PAD(r.minute), r.minute, PAD(r.second), r.second, r.yea
r, s);
```

❖ **TASK 3**

1. File proc.h, pada line 52

```
52 uint start_ticks;
```

2. File proc.c, pada line 152

```
152 p->start_ticks = ticks;
```

3. File proc.c, pada line 567-580

```
567  int elapsedmilliseconds;
568  int elapsedseconds;
569
570  elapsedmilliseconds = ticks - p->start_ticks;
571  elapsedseconds = elapsedmilliseconds / 1000;
572  elapsedmilliseconds = elapsedmilliseconds % 1000;
573
574  char* zero = "";
575  if(elapsedmilliseconds < 100 && elapsedmilliseconds >= 10)
576    zero = "0";
577  if(elapsedmilliseconds < 10)
578    zero = "00";
579
580 cprintf("%d\t%s\t%s%d.%s%d\t%s\t%d\t", p->pid, p-
>name, "     ", elapsedseconds, zero, elapsedmilliseconds, states[p->state], p-
>sz);
```