

Prvi kolokvijum iz Operativnih sistema 1

Septembar 2012.

1. (10 poena)

```
static unsigned* io2Ptr = 0;
static int io2Count = 0;
static int io2Completed = 0;

int transfer (unsigned* blk1, int count1, unsigned* blk2, int count2) {
    // I/O 2:
    io2Ptr = blk2;
    io2Count = count2;
    io2Completed = 0;
    int status = 0;
    *io2Ctrl = 1; // Start I/O 2

    // I/O 1
    *io1Ctrl = 1; // Start I/O 1
    while (count1>0) {
        while (!( *io1Status&1)); // Busy wait
        if ( *io1Status&2) { // Error in I/O 1
            status |= 1;
            break;
        }
        *blk1++ = *io1Data;
        count1--;
    }
    *io1Ctrl = 0; // Stop I/O 1

    // Wait for I/O 2 completion:
    while (!io2Completed);
    if(io2Completed<0)status |= 2;
    return status;
}

interrupt void io2Interrupt() {
    if ( *io2Status&2) { // Error in I/O 2
        io2Completed = -1;
        *io2Ctrl = 0; // Stop I/O 2
        return;
    }
    *io2Ptr++ = *io2Data;
    if (--io2Count == 0) {
        io2Completed = 1;
        *io2Ctrl = 0; // Stop I/O 2
    }
}
```

2. (10 poena)

VA: Page(8):Offset(16)

PA: Frame(8):Offset(16)

Sekvenca stranica koje se traže: 3, 3, 3, 8, 8, 3, 3, 3, 5, 5, 6, 6

PMT na kraju sekvence:

Entry	Flag	Frame
0	0	
1	0	
2	0	
3	1	20h
4	0	
5	1	22h
6	1	23h
7	0	
8	1	21h
9	0	
A	0	
B	0	
C	0	
D	0	
E	0	
F	0	

3. (10 poena)

```
void Thread::suspend () {
    lock();
    jmp_buf old = Thread::running->context;
    Thread::running = Scheduler::get();
    jmp_buf new = Thread::running->context;
    yield(old,new);
    unlock();
}
```

```
void Thread::resume () {
    lock();
    Scheduler::put(this);
    jmp_buf old = Thread::running->context;
    Scheduler::put(Thread::running);
    Thread::running = Scheduler::get();
    jmp_buf new = Thread::running->context;
    yield(old,new);
    unlock();
}
```

4. (10 poena)

```
int create_thread (void (*fun)(void*), void* p) {
    int ret = fork();
    if (ret<0) return ret; // Error
    if (ret>0) return ret; // Parent thread context
    // Child context (ret==0):
    (*fun)(p);
    exit();
}
```