

Prvi kolokvijum iz Operativnih sistema 1

Odsek za računarsku tehniku i informatiku

April 2017.

1. (10 poena)

```
static unsigned *io1Ptr = 0, *io2Ptr = 0;
static int io1Count = 0, io2Count = 0;
static unsigned timeout = 50;

void transfer (unsigned* blk1, int count1, unsigned* blk2, int count2) {
    // I/O 1:
    io1Ptr = blk1;
    io1Count = count1;
    *io1Ctrl = 1; // Start I/O 1
    *io1Data = *io1Ptr++;
    *timer = timeout; // Start timer

    // I/O 2:
    io2Ptr = blk2;
    io2Count = count2;
    *io2Ctrl = 1; // Start I/O 2
    *io2Data = *io2Ptr++;

    // Busy wait for I/O completion:
    while (io1Count || io2Count);
}

interrupt void io2Interrupt() {
    if (--io2Count)
        *io2Data = *io1Ptr++; // New output request
    else
        *io2Ctrl = 0; // Stop I/O 2
}

interrupt void timerInterrupt () {
    if (--io1Count) {
        *io1Data = *io1Ptr++; // New output request
        *timer = timeout; // Restart timer
    } else
        *io1Ctrl = 0; // Stop I/O 1
}
```

2. (10 poena)

```
void IOThread::suspend () {
    IOThread::running->isReady = 0;
    int newRunning = -1;
    while (newRunning==-1) {
        for (int i=0; i<IOThread::NumOfIOThreads; i++)
            if (IOThread::allThreads[i].isReady) {
                newRunning = i;
                break;
            }
    }
    IOThread* oldThread = IOThread::running;
    IOThread* newThread = &IOThread::allThreads[newRunning];
    IOThread::running = newThread;
    yield(oldThread, newThread);
}
```

3. (10 poena) 2349, ili 2439, ili 3249, ili 3429, ili 4239, ili 4329 i ništa više osim toga.