

# Rešenja drugog kolokvijuma iz Operativnih sistema 2, novembar 2013.

## 1. (10 poena)

```
int getHolder (unsigned int rid) {
    for (unsigned int i=0; i<numOfProc; i++)
        if (resourceAlloc[i][rid]==-1) return i;
    return -1; // Free
}

int getWaitedResource (unsigned int pid) {
    for (unsigned int i=0; i<numOfRes; i++)
        if (resourceAlloc[pid][i]==1) return i;
    return -1; // Not waiting
}

int wouldMakeDeadlock (unsigned int pid, unsigned int rid) {
    if (pid>=numOfProc || rid>=numOfRes) return -1; // Exception!
    int p = pid, r = rid;
    while (1) {
        p = getHolder(r);
        if (p==-1) return 0; // No deadlock
        if (p==pid) return 1; // Deadlock
        r = getWaitedResource(p);
        if (r==-1) return 0; // No deadlock
    }
}
```

## 2. (10 poena)

```
#define next(x) pcb->pagefifo[x]

unsigned int getVictimPage(PCB* pcb) {
    if (pcb==0) return -1; // Exception!
    unsigned int victim = -1;
    if (findBestCandidate(pcb,0)) {
        victim = pcb->clockHand;
        pcb->clockHand = next(victim);
        return victim;
    }
    if (findBestCandidate(pcb,1)) {
        victim = pcb->clockHand;
        pcb->clockHand = next(victim);
        return victim;
    }
    if (findBestCandidate(pcb,0)) {
        victim = pcb->clockHand;
        pcb->clockHand = next(victim);
        return victim;
    }
    if (findBestCandidate(pcb,1)) {
        victim = pcb->clockHand;
        pcb->clockHand = next(victim);
        return victim;
    }
    // Should never fall through here:
    return -1;
}
```

## 3. (10 poena) Inicijalno: F256

Nakon A1: A1, F1, F2, F4, F8, F16, F32, F64, F128

Nakon A16: A1, F1, F2, F4, F8, A16, F32, F64, F128

Nakon A64: A1, F1, F2, F4, F8, A16, F32, A64, F128

Nakon A16: A1, F1, F2, F4, F8, A16, A16, F16, A64, F128

Nakon A64: A1, F1, F2, F4, F8, A16, A16, F16, A64, A64, F64

Nakon F1: F16, A16, A16, F16, A64, A64, F64