

**Міністерство освіти і науки України
Національний технічний університет України «КПІ» імені Ігоря Сікорського
Кафедра обчислювальної техніки ФІОТ**

**ЗВІТ
з лабораторної роботи №6
з навчальної дисципліни
«Архітектура комп'ютерів-2. Процесори»**

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rubertos@Maksym-box: ~/repos/busybox

3.587356] uart-pl011 9000000.pl011: no DMA platform data
4.094813] Freeing unused kernel memory: 2048K
4.127696] Run /init as init process

Please press Enter to activate this console.
# insmod hello.ko amount=8
148.322523] hello: loading out-of-tree module taints kernel.
148.341491] Entered parameter is between 5 and 10
148.341746] Hello World!
148.343025] Hello World!
148.343904] Hello World!
148.344629] Hello World!
148.345283] Hello World!
148.345980] Hello World!
148.346757] Hello World!
148.347770] Unhandled fault: page domain fault (0x81b) at 0x00000008
148.353842] pgd = (ptrval)
148.354101] [00000008] *pgd=48b3e835, *pte=00000000, *ppte=00000000
148.355284] Internal error: : 81b [#1] SMP ARM
148.360862] Modules linked in: hello(0+)
148.363814] CPU: 0 PID: 53 Comm: insmod Tainted: G          0      4.19.219 #1
148.366032] Hardware name: Generic DT based system
148.367668] PC is at helloinit+0xc8/0x1000 [hello]
148.368939] LR is at 0x17
148.369645] pc : [<bf0050c8>]   lr : [<00000017>]   psr: 900f0013
148.370691] sp : c8af5db8   ip : c0000000   fp : 00000000
148.371316] r10: 006000c0   r9 : bf0010c0   r8 : c135a34c
148.372010] r7 : 00000000   r6 : 00000000   r5 : bf002000   r4 : 00000008
148.372884] r3 : 00000022   r2 : 30000000   r1 : 00000022   r0 : 874db1f0
148.373720] Flags: NzCv IRQs on FIQs on Mode SVC_32 ISA ARM Segment none
148.374687] Control: 10c5387d Table: 48b5406a DAC: 00000051
148.375543] Process insmod (pid: 53, stack limit = 0x(ptrval))
148.376466] Stack: (0xc8af5db8 to 0xc8af6000)
```

```
rubertos@Maksym-box: ~/repos/busybox

148.376466] Stack: (0xc8af5db8 to 0xc8af6000)
148.377226] 5da0:                                     c1788300 c1604c48
148.378561] 5dc0: fffff000 bf005000 00000000 c1604c48 bf002040 c0302d4c 00000000 c8af5df8
148.379949] 5de0: 00210d00 c0460954 c1604c48 c8ae9a00 00000051 bf000000 00000000 e0972fff
148.381377] 5e00: ffe00000 fffff000 8040003f c8ae9a40 dbcef9e0 6dc644a9 dbcef9e0 c8ae9a00
148.386195] 5e20: bf002040 6dc644a9 bf002040 00000002 c8b59840 00000002 c8b59780 c03d1ba8
148.386805] 5e40: 00000001 c03d3f04 c8af5f30 c8af5f30 00000002 c8b59740 00000002 c03d3f20
148.387924] 5e60: bf00204c 00007fff bf002040 c03d0de0 c8b05418 bf002088 c8b0569c bf002234
148.394697] 5e80: bf002170 c13587f8 00000000 c121f1e4 c121f254 c1604c48 c1608f04 c8ae8380
148.396070] 5ea0: fffff000 e0800000 c8ae8380 c8ae9a00 00000000 00000000 00000000 00000000
148.397576] 5ec0: 00000000 00000000 6e72656b 00006c65 00000000 00000000 00000000 00000000
148.399688] 5ee0: 00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
148.400986] 5f00: 00000000 6dc644a9 00000080 00001404 00000000 e0971404 0012c654 c1604c48
148.402219] 5f20: 0011b1f8 fffff000 00000051 c03d4380 e09602aa e0960380 e0960000 00011404
148.403416] 5f40: e0970c84 e0970aac e096d2a0 00003000 00003040 00000000 00000000 00000000
148.404626] 5f60: 0000171c 0000002d 0000002e 00000017 00000000 00000010 00000000 6dc644a9
148.405922] 5f80: 000f411e 0011b1f8 b6f66950 00011404 00000080 c0301204 c8af4000 00000080
148.407180] 5fa0: 000f411e c0301000 0011b1f8 b6f66950 0011b250 00011404 0011b1f8 00000000
148.408531] 5fc0: 0011b1f8 b6f66950 00011404 00000080 00000001 bed2dea0 001086c4 000f411e
148.409865] 5fe0: bed2db58 bed2db48 0003b270 b6e201b0 600f0010 0011b250 00000000 00000000
148.412793] [<bf0050c8>] (helloinit [hello]) from [<c0302d4c>] (do_one_initcall+0x54/0x208)
148.418098] [<c0302d4c>] (do_one_initcall) from [<c03d1ba8>] (do_init_module+0x64/0x224)
148.419427] [<c03d1ba8>] (do_init_module) from [<c03d3f20>] (load_module+0x2150/0x2458)
148.420465] [<c03d3f20>] (load_module) from [<c03d4380>] (sys_init_module+0x158/0x18c)
148.421468] [<c03d4380>] (sys_init_module) from [<c0301000>] (ret_fast_syscall+0x0/0x54)
148.427944] Exception stack(0xc8af5fa8 to 0xc8af5ff0)
148.428774] 5fa0: 0011b1f8 b6f66950 0011b250 00011404 0011b1f8 00000000
148.430096] 5fc0: 0011b1f8 b6f66950 00011404 00000080 00000001 bed2dea0 001086c4 000f411e
148.431977] 5fe0: bed2db58 bed2db48 0003b270 b6e201b0
148.433200] Code: e5860000 03a06000 eb4ece52 e1a07006 (e1c600f8)
148.434910] ---[ end trace 7b0336ffcb0ea0c ]---

Segmentation fault
/ #
```

```
rubertos@Maksym-box: ~/AK-labs/Lab6

a0: e3a02010    mov     r2, #16
a4: e1a0100a    mov     r1, sl
a8: e5980018    ldr     r0, [r8, #24]
ac: ebfffffe    bl      0 <kmem_cache_alloc_trace>
    if (i == 7) var_1 = NULL;
b0: e3540007    cmp     r4, #7
for (i = 0; i < amount; i++) {
b4: e2844001    add     r4, r4, #1
    var_1->next = kmalloc(sizeof(struct head_list), GFP_KERNEL);
b8: e5860000    str     r0, [r6]
    if (i == 7) var_1 = NULL;
bc: 03a06000    moveq   r6, #0
    var_1->time = ktime_get();
c0: ebfffffe    bl      0 <ktime_get>
    var_2 = var_1;
c4: e1a07006    mov     r7, r6
    var_1->time = ktime_get();
c8: e1c600f8    strd    r0, [r6, #8]
    pr_info("Hello World!");
cc: e1a00009    mov     r0, r9
d0: ebfffffe    bl      0 <printk>
    var_1 = var_1->next;
d4: e5966000    ldr     r6, [r6]
d8: eafffffd    b       94 <init_module+0x94>
}

if (amount != 0) {
dc: e3530000    cmp     r3, #0
e0: 0a000003    beq     f4 <init_module+0xf4>
    kfree(var_2->next);
e4: e5970000    ldr     r0, [r7]
```