НАЦІОНАЛЬНИЙ ТЕХНІЧНИЙ УНІВЕРСИТЕТ УКРАЇНИ

«КИЇВСЬКИЙ ПОЛІТЕХНІЧНИЙ ІНСТИТУТ»

ФАКУЛЬТЕТ ІНФОРМАТИКИ І ОБЧИСЛЮВАЛЬНОЇ ТЕХНІКИ

КАФЕДРА ОБЧИСЛЮВАЛЬНОЇ ТЕХНІКИ

**Лабораторна робота №7**

*з дисципліни* ***«****Архітектура комп’ютерів 2****»***

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**Лістинг програми:**

**hello.c**

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\*/

#include <linux/init.h>

#include <linux/module.h>

#include <linux/printk.h>

#include <linux/slab.h>

#include <linux/ktime.h>

struct my\_list\_head {

struct my\_list\_head \*next;

ktime\_t time;

};

MODULE\_AUTHOR("Trandashyr Julia");

MODULE\_DESCRIPTION("Hello, world");

MODULE\_LICENSE("Dual BSD/GPL");

static struct my\_list\_head \*header;

static uint times;

module\_param(times, uint, 0444);

MODULE\_PARM\_DESC(times, "The amount of times to print hello world");

static int \_\_init hello(void)

{

uint i;

struct my\_list\_head \*first\_var, \*second\_var;

pr\_info("times: %d\n", times);

if (times == 0) {

pr\_warn("The parameter is 0 \n");

} else if (times >= 5 && times <= 10) {

pr\_warn("5 <= param <= 10 \n");

}

BUG\_ON (times > 10);

header = kmalloc(sizeof(struct my\_list\_head \*), GFP\_KERNEL);

first\_var = header;

for (i = 0; i < times; i++) {

if ( i == 7){ first\_var = NULL; }

first\_var->next = kmalloc(sizeof(struct my\_list\_head), GFP\_KERNEL);

first\_var->time = ktime\_get();

pr\_info("Hello World!\n");

second\_var = first\_var;

first\_var = first\_var->next;

}

if (times != 0) {

kfree(second\_var->next);

second\_var->next = NULL;

}

return 0;

}

static void \_\_exit hello\_exit(void)

{

struct my\_list\_head \*var;

while (header != NULL && times != 0) {

var = header;

pr\_info("Time : %lld", var->time);

header = var->next;

kfree(var);

}

if (times == 0)

pr\_info("Time is 0 because print wasn't used\n");

pr\_info("");

}

module\_init(hello);

module\_exit(hello\_exit);

**Makefile**

ifneq ($(KERNELRELEASE),)

# kbuild part of makefile

obj-m := hello.o

ccflags-y += -g

else

# normal makefile

KDIR ?= /lib/modules/`uname -r`/build

default:

$(MAKE) -C $(KDIR) M=$$PWD

cp hello.ko hello.ko.unstripped

$(CROSS\_COMPILE)strip -g hello.ko

clean:

$(MAKE) -C $(KDIR) M=$$PWD clean

endif

**Посилання на репозиторій:**

https://github.com/julia-t07/AK\_Lab7

**Скріншот виконання:**

