**Лабораторна робота №2.2**

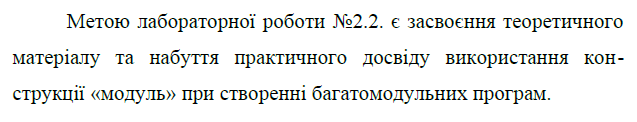
З дисципліни «Структури даних та алгоритми»

Тема: «Модулі»

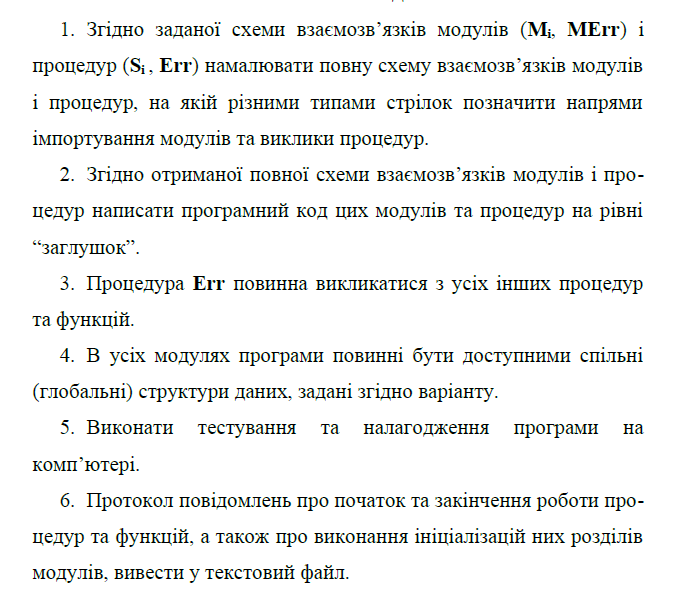
Виконав: Землянський Едуард

Група: КВ-22

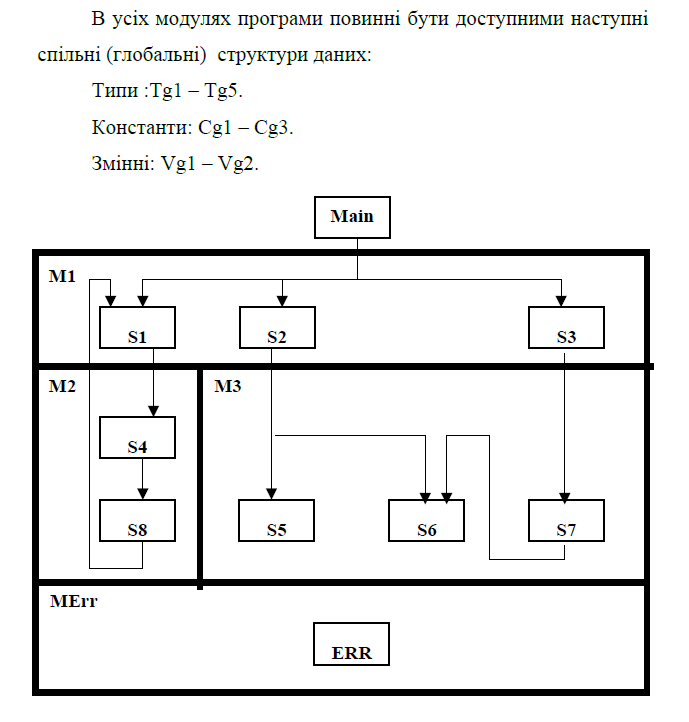
**Мета лабораторної роботи**

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**Постановка задачі**



**Варіант завдання**

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**Текст програми**

main.c

#include <stdio.h>

#include <stdlib.h>

#include "common.h"

#include "M1.h"

#include "MErr.h"

int main(){

    logs = fopen("logs.txt", "w");

    fprintf(logs, "Main started.\n");

    common\_init();

    S1();

    S2();

    S3();

    MErr();

    fprintf(logs, "Main finished.\n");

    fclose(logs);

    return 1;

}

common.c

    #include <stdlib.h>

    #include <stdio.h>

    #include "common.h"

    #include "MErr.h"

    FILE \* logs;

    typedef int Tg1, Tg2, Tg3, Tg4, Tg5;

    int Vg1, Vg2, counter;

    int const Cg1 = 10, Cg2 = 20, Cg3 = 30;

void common\_init(void){

    logs = fopen("logs.txt", "a");

    fprintf(logs, "Common initialization started.\n");

    Vg1 = 1;

    Vg2 = 2;

    counter = 0;

    MErr();

    fprintf(logs, "Common initialization finished.\n");

}

common.h

#ifndef COMMON\_H\_INCLUDED

#define COMMON\_H\_INCLUDED

#include <stdio.h>

#include <stdlib.h>

typedef int Tg1, Tg2, Tg3, Tg4, Tg5;

extern int Vg1, Vg2, counter;

extern int const Cg1, Cg2, Cg3;

extern FILE \*logs;

void common\_init();

#endif

M1.c

#include <stdio.h>

#include <stdlib.h>

#include "common.h"

#include "M2.h"

#include "M3.h"

#include "MErr.h"

void S1(void){

    counter++;

    fprintf(logs, "S1 started\n");

    S4();

    MErr();

    fprintf(logs, "S1 finished\n");

}

void S2(void){

    fprintf(logs, "S2 started\n");

    MErr();

    // S5();

    // S6();

    fprintf(logs, "S2 finished\n");

}

void S3(void){

    fprintf(logs, "S3 started\n");

    MErr();

    // S7();

    fprintf(logs, "S3 finished\n");

}

M1.h

#ifndef M1\_H\_INCLUDED

#define M1\_H\_INCLUDED

#include <stdio.h>

#include <stdlib.h>

void S1();

void S2();

void S3();

#endif

M2.c

#include <stdio.h>

#include <stdlib.h>

#include "common.h"

#include "M1.h"

#include "MErr.h"

void S4();

void S8();

void S4(void){

    fprintf(logs, "S4 started\n");

    MErr();

    S8();

    fprintf(logs, "S4 finished\n");

}

void S8(void){

    while (counter < 3)

    {

        fprintf(logs, "S8 started\n");

        MErr();

        S1();

        fprintf(logs, "S8 finished\n");

    }

}

M2.h

#ifndef M2\_H\_INCLUDED

#define M2\_H\_INCLUDED

#include <stdio.h>

#include <stdlib.h>

void S4();

void S8();

#endif

M3.c

#include <stdio.h>

#include <stdlib.h>

#include "common.h"

#include "MErr.h"

void S4();

void S8();

void S5(void){

    fprintf(logs, "S5 started\n");

    MErr();

    fprintf(logs, "S5 finished\n");

}

void S6(void){

    fprintf(logs, "S6 started\n");

    MErr();

    fprintf(logs, "S6 finished\n");

}

void S7(void){

    fprintf(logs, "S7 started\n");

    S6();

    MErr();

    fprintf(logs, "S7 finished\n");

}

M3.h

#ifndef M3\_H\_INCLUDED

#define M3\_H\_INCLUDED

#include <stdio.h>

#include <stdlib.h>

void S5();

void S6();

void S7();

#endif

MErr.c

#include <stdlib.h>

#include <stdio.h>

#include "common.h"

void MErr(void){

    fprintf(logs, "MErr triggered\n");

}

Merr.h

#ifndef MErr\_H\_INCLUDED

#define MErr\_H\_INCLUDED

#include <stdio.h>

#include <stdlib.h>

void MErr();

#endif

**Логи** (після виконання програми)**:**

logs.txt

Main started.

zation started.

MErr triggered

Common initialization finished.

S1 started

S4 started

MErr triggered

S8 started

MErr triggered

S1 started

S4 started

MErr triggered

S8 started

MErr triggered

S1 started

S4 started

MErr triggered

S4 finished

MErr triggered

S1 finished

S8 finished

S4 finished

MErr triggered

S1 finished

S8 finished

S4 finished

MErr triggered

S1 finished

S2 started

MErr triggered

S2 finished

S3 started

MErr triggered

S3 finished

MErr triggered

Main finished.