

МІНІСТЕРСТВО ОСВІТИ І НАУКИ  
НАЦІОНАЛЬНИЙ УНІВЕРСИТЕТ «ЛЬВІВСЬКА  
ПОЛІТЕХНІКА»

Кафедра систем штучного інтелекту



Лабораторна робота №8  
З курсу “Алгоритмізація та програмування”

Виконав:  
ст. гр. КН-110  
Марій Павло

Львів – 2018

**Тема:** Блоковий ввід-вивід.

**Мета:** Робота із двійковими файлами, організація вводу-виводу структурованої інформації і її зберігання на зовнішніх носіях.

## Варіант 18

### Код програми:

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>

typedef struct
{
    char name[50];
    char author[50];
    int year;
    int pages;
} Book;

int readMyFile(int size, Book array[])
{
    FILE *f;
    f = fopen("forLab.txt", "w");
    if(f==NULL)
    {
        fprintf(stderr, "\nError open file\n");
        return 1;
    }
    for(int i=0; i<size; i++)
    {
```

```

        printf("Enter name of %d book: ", i+1);
        scanf("%s", &array[i].name);
        printf("Enter name of %d book author: ", i+1);
        scanf("%s", &array[i].author);
        printf("Enter year of %d book: ", i+1);
        scanf("%d", &array[i].year);
        printf("Enter amount of pages of %d book: ", i+1);
        scanf("%d", &array[i].pages);
        fwrite(&array[i], sizeof(Book), 1, f);
        if(fwrite != 0)
            printf("Data is successfully recorded\n");
        else
        {
            printf("Error writing file!\n");
            return 1;
        }
    }
    fclose (f);
    return 0;
}

```

```

void showMyFile(int size, Book array[])
{
    FILE *f;
    int i=0;
    f = fopen("forLab.txt", "r");
    while(!feof(f)&& i<size)
    {
        fread(&array[i], sizeof(Book), 1, f);
        i++;
    }
    printf("Result list:\n");
    for(i=0; i<size; i++)

```

```

        {
            printf("%i)Name: %s\n Author: %s\n Year: %d\n Pages: %d\n",
                i+1,array[i].name,array[i].author,array[i].year,array[i].pages);
        }
        fclose(f);
    }
}

```

```

int addition_and_rewrite(int size, Book array[],char name[40])

```

```

{
    FILE *f;
    int i=0,breakpoint=-1, newsize=0;
    f = fopen("forLab.txt","w");
    while(!feof(f)&& i<size)
    {
        fread(&array[i], sizeof(Book),1,f);
        i++;
    }
    for(i=3;i<size;i++)
    {
        if(fwrite == 0)
            return 1;
        if(strcmp(array[i].name, name)==0)
        {
            breakpoint=i;
            break;
        }
        fwrite(&array[i], sizeof(Book),1, f);
        newsize++;
    }
    if(breakpoint!=-1)
    {
        printf("Enter name of added book: ");
        scanf("%s", &array[size].name);
    }
}

```

```

printf("Enter author of added book: ");
scanf("%s", &array[size].author);
printf("Enter year of added book: ");
scanf("%d", &array[size].year);
printf("Enter amount of pages of added book: ");
scanf("%d", &array[size].pages);
fwrite(&array[size], sizeof(Book),1,f);
newsize++;
for(i=breakpoint;i<size;i++)
{
    fwrite(&array[i], sizeof(Book),1,f);
    newsize++;
}
}
fclose(f);
return newsize;
}

int main(void)
{
    int size, modsize;
    char name[40];

    printf("Enter amount of books: ");
    scanf("%d", &size);

    Book array[size+1];

    readMyFile(size, array);
    showMyFile(size, array);

    printf("Enter name of book, before which to add a new book: ");
    scanf("%s", &name);

```

```

strcpy(array[size].name, name);

modsize = addition_and_rewrite(size, array, name);

showMyFile(modsize, array);

getchar();

getchar();

}

```

## Результат:

```

Enter amount of books: 5
Enter name of 1 book: Money
Enter name of 1 book author: McGragor
Enter year of 1 book: 1999
Enter amount of pages of 1 book: 233
Data is successfully recorded
Enter name of 2 book: Computer
Enter name of 2 book author: Karnegi
Enter year of 2 book: 1945
Enter amount of pages of 2 book: 155
Data is successfully recorded
Enter name of 3 book: Eldgernon
Enter name of 3 book author: Shecspeare
Enter year of 3 book: 1866
Enter amount of pages of 3 book: 332
Data is successfully recorded
Enter name of 4 book: Controll
Enter name of 4 book author: Rowling
Enter year of 4 book: 2001
Enter amount of pages of 4 book: 450
Data is successfully recorded
Enter name of 5 book: Business
Enter name of 5 book author: King
Enter year of 5 book: 2008
Enter amount of pages of 5 book: 520
Data is successfully recorded
Result list:
1)Name: Money
   Author: McGragor
   Year: 1999
   Pages: 233
2)Name: Computer
   Author: Karnegi
   Year: 1945
   Pages: 155
3)Name: Eldgernon
   Author: Shecspeare
   Year: 1866
   Pages: 332
4)Name: Controll
   Author: Rowling
   Year: 2001
   Pages: 450

Enter name of 5 book: Business
Enter name of 5 book author: King
Enter year of 5 book: 2008
Enter amount of pages of 5 book: 520
Data is successfully recorded
Result list:
1)Name: Money
   Author: McGragor
   Year: 1999
   Pages: 233
2)Name: Computer
   Author: Karnegi
   Year: 1945
   Pages: 155
3)Name: Eldgernon
   Author: Shecspeare
   Year: 1866
   Pages: 332
4)Name: Controll
   Author: Rowling
   Year: 2001
   Pages: 450
5)Name: Business
   Author: King
   Year: 2008
   Pages: 520

Enter name of book, before which to add a new book: Controll
Enter name of added book: NewBook
Enter author of added book: Bender
Enter year of added book: 1955
Enter amount of pages of added book: 320
Result list:
1)Name: NewBook
   Author: Bender
   Year: 1955
   Pages: 320
2)Name: Controll
   Author: Rowling
   Year: 2001
   Pages: 450
3)Name: Business
   Author: King
   Year: 2008
   Pages: 520

```

**Висновок:** Я попрацював із двійковими файлами, організував ввід-вивід структурованої інформації і зберіг її на зовнішніх носіях.