

A thick dark blue vertical bar runs down the left side of the page. A blue arrow points to the right from this bar, containing the date.

12/11/2022

PF lab Assignment

Lab 12

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Several thin, curved lines in dark blue and light grey originate from the bottom left corner and sweep upwards and to the right, creating a decorative, organic shape.

QUESTION # 1

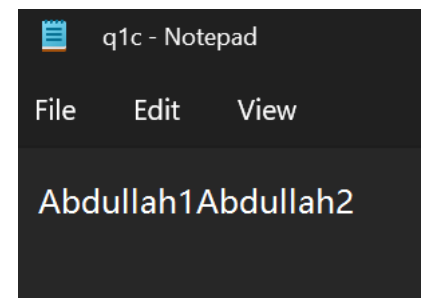
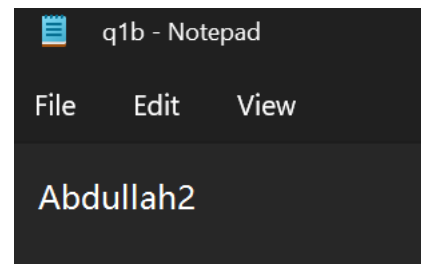
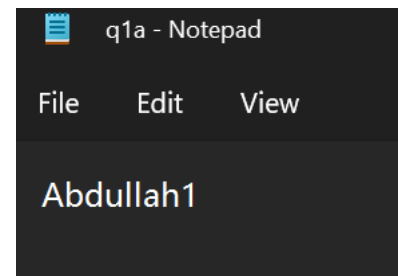
Write a C program to create 2 text files and store some text inside them. Then read these 2 files into the program and merge the text into a 3 rd text file.

Program & Output

```
#include<stdio.h>
#include<stdlib.h>
int main()
{
    char text[100];
    FILE *p1;
    FILE *p2;
    FILE *p3;
    p1=fopen("q1a.txt","w");
    if(p1==NULL)
    {
        printf("ERROR!");
        exit(1);
    }
    printf("Enter Some text to store in File 1:\n");
    scanf("%s",text);
    fprintf(p1,"%s",text);
    fclose(p1);
    p2=fopen("q1b.txt","w");
    if(p2==NULL)
    {
        printf("ERROR!");
        exit(1);
    }
    printf("Enter Some text to store in File 2:\n");
    scanf("%s",text);
    fprintf(p2,"%s",text);
    fclose(p2);

    p1=fopen("q1a.txt","r");
    p2=fopen("q1b.txt","r");
    p3=fopen("q1c.txt","w");
    while(fscanf(p1,"%s",text)!=EOF)
    {
        fprintf(p3,"%s",text);
    }
    while(fscanf(p2,"%s",text)!=EOF)
    {
        fprintf(p3,"%s",text);
    }
    fclose(p1);
    fclose(p2);
    fclose(p3);
    p3=fopen("q1c.txt","r");
    while(fscanf(p3,"%s",text)!=EOF)
    {
        fscanf(p3,"%s",text);
        printf("The merged text is %s",text);
    }
}
```

```
Enter Some text to store in File 1:
Abdullah1
Enter Some text to store in File 2:
Abdullah2
The merged text is Abdullah1Abdullah2
-----
```



QUESTION # 2

Write a C program to count the occurrences of each letter in an existing text file and store this information into a new file, showing the occurrences of each letter and the total characters read in the following format:

Program & Output

```
#include<stdio.h>
#include<string.h>
#include<stdlib.h>
int main()
{
    int count,count1,i,j;
    char temp;
    char text[100];
    FILE *p1;
    FILE *p2;
    p1=fopen("file.txt","r");
    if (p1==NULL)
    {
        printf("No");
    }
    while (fgets(text,100,p1))
    {
        printf("%s",text);
    }
    for (i=0;i<strlen(text);i++)
    {
        for (j=0;j<strlen(text);j++)
        {
            if(text[i]<text[j])
            {
                temp=text[i];
                text[i]=text[j];
                text[j]=temp;
            }
        }
    }
    for ( i=0;i<strlen(text);i++)
    {
        for ( j=0;j<strlen(text);j++)
        {
            if (text[i]==text[j])
            {
                count++;
            }
        }
        if (text[i]!=text[i+1])
        {
            p2=fopen("file1.txt","a");
            fprintf(p2,"\nOccurannce of %c is %d",text[i],count);
            fclose(p2);
            count1++;
        }
        count=0;
    }
    char data[count1][20];
    int line=0;
    p2=fopen("file1.txt","r");
    while(!feof(p2))
    {
        if(fgets(data[line],1000,p2)!=NULL)
        {
            printf("%s",data[line]);
            line++;
        }
    }
}
```

```
abcdshjfgwsjkvfbskjbvf
Occurannce of a is 1
Occurannce of b is 2
Occurannce of c is 1
Occurannce of d is 1
Occurannce of f is 3
Occurannce of g is 1
Occurannce of h is 2
Occurannce of j is 3
Occurannce of k is 2
Occurannce of s is 3
Occurannce of v is 2
Occurannce of w is 1
-----
```

file - Notepad

File Edit View

abcdshjfgwsjkvfbskjbvf

file1 - Notepad

File Edit View

Occurannce of a is 1
Occurannce of b is 2
Occurannce of c is 1
Occurannce of d is 1
Occurannce of f is 3
Occurannce of g is 1
Occurannce of h is 2
Occurannce of j is 3
Occurannce of k is 2
Occurannce of s is 3
Occurannce of v is 2
Occurannce of w is 1

QUESTION # 3

Write a C program to keep records and perform statistical analysis for a class of 20 students. The information of each student contains ID, Name, Sex, quizzes Scores (2 quizzes per semester), mid-term score, final score, and total score. All the records must be store in the file and you must read the scores <50, <80 and <100 until users selects the end file option.

Program & Output

```
#include<stdio.h>
#include<string.h>
#include<stdlib.h>
struct data
{
    char id[4];
    char name[20];
    char sex[1];
    int q1,q2,mid,final,total;
};
int main()
{
    struct data s[20];
    FILE *p;
    p=fopen("record.txt","a");
    for (int i=0;i<20;i++)
    {
        fprintf(p,"\n");
        printf("Enter Id:");
        scanf("%s",s[i].id);
        fprintf(p,"%s",s[i].id);
        printf("Enter Name :");
        scanf("%s",s[i].name);
        fprintf(p,"\t%s",s[i].name);
        printf("Enter Sex:");
        scanf("%s",s[i].sex);
        fprintf(p,"\t%s",s[i].sex);
        printf("Enter Quiz 1:");
        scanf("%d",&s[i].q1);
        fprintf(p,"\t%d",s[i].q1);
        printf("Enter Quiz 2:");
        scanf("%d",&s[i].q2);
        fprintf(p,"\t\t%d",s[i].q2);
        printf("Enter Mid :");
        scanf("%d",&s[i].mid);
        fprintf(p,"\t\t\t%d",s[i].mid);
        printf("Enter Final:");
        scanf("%d",&s[i].final);
        fprintf(p,"\t\t\t\t%d",s[i].final);
        s[i].total=s[i].q1+s[i].q2+s[i].mid+s[i].final;
        fprintf(p,"\t\t\t\t\t%d",s[i].total);
    }
}
```

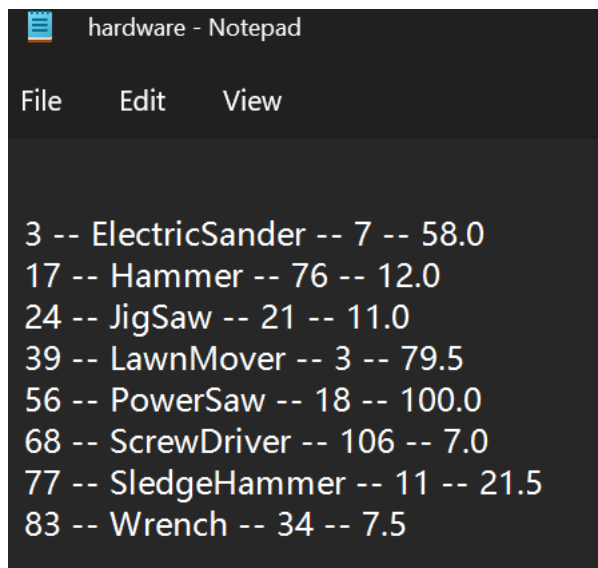
File	Edit	View					
4441	Abdullah1	M	9	8	56	45	118
4442	Abdullah2	F	5	6	78	90	179
4443	Abdullah3	M	34	56	89	45	224
4444	Abdullah4	M	8	7	56	78	149
4445	Abdullah5	M	9	9	56	78	152

QUESTION # 4

You're the owner of a hardware store and need to keep an inventory that can tell you what tools you have, how many you have and the cost of each one. Write a program that initializes the file "hardware.txt" to 10 empty records, lets you input the data concerning each tool, enables you to list all your tools, lets you delete a record for a tool that you no longer have and

Program & Output

```
#include<stdio.h>
#include<string.h>
#include<stdlib.h>
int main()
{
    char tool_name[20];
    int quantity;
    float cost;
    int record;
    FILE *p;
    p=fopen("hardware.txt","a");
    for (int i=0;i<10;i++)
    {
        printf("Enter Record #:");
        scanf("%d",&record);
        printf("Enter Tool Name:");
        scanf("%s",tool_name);
        printf("Enter Quantity:");
        scanf("%d",&quantity);
        printf("Enter Cost:");
        scanf("%f",&cost);
        fprintf(p,"%d -- %s -- %d -- %.1f\n",record,tool_name,quantity,cost);
    }
    fclose(p);
}
```



```
hardware - Notepad
File Edit View

3 -- ElectricSander -- 7 -- 58.0
17 -- Hammer -- 76 -- 12.0
24 -- JigSaw -- 21 -- 11.0
39 -- LawnMover -- 3 -- 79.5
56 -- PowerSaw -- 18 -- 100.0
68 -- ScrewDriver -- 106 -- 7.0
77 -- SledgeHammer -- 11 -- 21.5
83 -- Wrench -- 34 -- 7.5
```

QUESTION # 5

Using C, create a file named budge.txt that contains three equal-length columns of numbers, like this:

Program & Output

```
#include<stdio.h>
#include<string.h>
#include<stdlib.h>
int main()
{
    float data[10][3];
    float sum_col1,sum_col2,sum_col3;
    FILE *p;
    p=fopen("budge.txt","a");
    for (int i=0;i<10;i++)
    {
        for (int j=0;j<3;j++)
        {
            scanf("%f",&data[i][j]);
            fprintf(p,"%f ",data[i][j]);
        }
        printf("\n");
        fprintf(p,"\n");
    }
    for (int i=0;i<10;i++)
    {
        sum_col1=sum_col1+data[i][0];
        sum_col2=sum_col2+data[i][1];
        sum_col3=sum_col3+data[i][2];
    }
    printf("Columns Sums are:\n");
    printf("%.1f--%.1f--%.1f",sum_col1,sum_col2,sum_col3);
}
```

```
-462.13 486.47 973.79
755.42 843.04 -963.67
442.58 -843.02 -462.86
-233.93 -821.67 399.59
-379.65 -556.37 837.46
55.18 -144.93 -93.15
533.73 804.64 -66.25
-922.12 914.68 -264.67
-600.27 -838.59 747.02
-962.97 49.96 -677.79

Columns Sums are:
-1774.2--105.8--429.5
-----
```

```
budge - Notepad
File Edit View

-462.130005 486.470001 973.789978
755.419983 843.039978 -963.669983
442.579987 -843.020020 -462.859985
-233.929993 -821.669983 399.589996
-379.649994 -556.369995 837.460022
55.180000 -144.929993 -93.150002
533.729980 804.640015 -66.250000
-922.119995 914.679993 -264.670013
-600.270020 -838.590027 747.020020
-962.969971 49.959999 -677.789978
```

QUESTION # 6

Create a structure to store Student data. A student has RollNo, Name, Department, Batch, Section, CGPA. Store the information of N students using array and store it into a file. Then access the file to find out the following information:

Program & Output

```
#include<stdio.h>
#include<string.h>
#include<stdlib.h>
int main()
{
    int n;
    printf("Enter No of Studnet:");
    scanf("%d",&n);
    struct student
    {
        char id[5];
        char name[30];
        char dept[10];
        int batch;
        char section;
        float cgpa;
    }data[n];

    FILE *p;
    for (int i=0;i<n;i++)
    {
        printf("Enter datatudent's id: ");
        scanf("%s",&data[i].id);
        printf("Enter student's name: ");
        scanf("%s",&data[i].name);
        printf("Enter student's department: ");
        scanf("%s",&data[i].dept);
        printf("Enter student's batch: ");
        scanf("%d",&data[i].batch);
        printf("Enter student's section: ");
        scanf("%s",&data[i].section);
        printf("Enter student's CGPA: ");
        scanf("%f",&data[i].cgpa);
    }
    p=fopen("data.txt","a");
    for (int i=0;i<n;i++)
    {
        fprintf(p,"ID: %s\n",data[i].id);
        fprintf(p,"Name: %s\n",data[i].name);
        fprintf(p,"Department: %s\n",data[i].dept);
        fprintf(p,"Batch: %d\n",data[i].batch);
        fprintf(p,"Section: %c\n",data[i].section);
        fprintf(p,"CGPA: %f\n",data[i].cgpa);
        fprintf(p,"\n");
    }
    fclose(p);
    char roll[5];
    printf("Enter Roll No to Find:");
    scanf("%s",roll);
    p=fopen("data.txt","r");
    int line=0;
    char the[n][1000];

    while(!feof(p))
    {
        if(fgets(the[line],1000,p)!=NULL)
        {
            for (int i=0;i<n;i++)
            {
                if(strcmp(roll,data[i].id)==1)
                {
                    fscanf(p,"ID: %s\n",data[i].id);
                    fscanf(p,"Name: %s\n",data[i].name);
                    fscanf(p,"Department: %s\n",data[i].dept);
                    fscanf(p,"Batch: %d\n",data[i].batch);
                    fscanf(p,"Section: %c\n",data[i].section);
                    fscanf(p,"CGPA: %f\n",data[i].cgpa);
                    fscanf(p,"\n");
                }
                line++;
            }
        }
    }
}
```

```
Enter No of Studnet:1
Enter datatudent's id: 4489
Enter student's name: Abdullah
Enter student's department: BSCS
Enter student's batch: 2022
Enter student's section: D
Enter student's CGPA: 3.0
Enter Roll No to Find:4489
-----
```

*data - Notepad

File Edit View

ID: 4489
Name: Abdullah
Department: BSCS
Batch: 2022
Section: D
CGPA: 3.000000