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Source Code phonebookvt.cpp :

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

struct data
{
	char nama[100];
	char nomor[100];
};

// data
data x[100];

void title()
{
	puts("Phone Book Program");
	puts("1. Add a new record");
	puts("2. Search for a name");
	puts("3. Modify a phone number");
```

```
	puts("4. Delete a record");
	puts("5. Exit the program");
	puts("Created by : Nicholas Valenthinus Tanoto - 2401960624 - Game Application and Technology");
	printf(">>");
}



// bool Validation
bool isalphabet(char namabackup[])
{
	for(int i=0;i<strlen(namabackup);i++)
	{
		if( ('a' <=namabackup[i] && namabackup[i] <= 'z') || ('A' <= namabackup[i] && namabackup[i] <= 'Z') )
		{
			if(strlen(namabackup) > 5 && strlen(namabackup) <40)
			{
				return true;
			}
		}
	}
	return false;
}

bool isnum(char nomorbackup[])
{
```

```
	for(int i=0;i<strlen(nomorbackup);i++)
	{
		if( '0' <= nomorbackup[i] && nomorbackup[i] <= '9' )
		{
			if(strlen(nomorbackup) == 12)
			{
				return true;
			}
		}
	}
	return false;
}

bool isexistalpha(char existnama[])
{
	// menghitung banyak data
	int countexist = 0;
	char c;
	FILE* fp;
	fp = fopen("data.txt","r");
	while((c=getc(fp)) != EOF)
	{
		if(c == '\n') ++countexist;
	}
	fclose(fp);
```

```
		for(int i=0;i<countexist;i++)
		{
			if(strcmp(existnama,x[i].nama) == 0)
			{
				printf("The name is already exist!\n");
				system("pause");
				return true;
				break;
			}
		}

	return false;
}

bool isexistnum(char existnum[])
{
	// menghitung banyak data
	int countexist = 0;
	char c;
	FILE* fp;
	fp = fopen("data.txt","r");
	while((c=getc(fp)) != EOF)
	{
		if(c == '\n') ++countexist;
	}
	fclose(fp);
```

```
		for(int i=0;i<countexist;i++)
		{
			if(strcmp(existnum,x[i].nomor) == 0)
			{
				printf("The phonenumber is already exist!\n");
				system("pause");
				return true;
				break;
			}
		}

	return false;
}

bool isExistalphaformodify(char existalpha[])
{
	// menghitung banyak data
	int countexist = 0;
	char c;
	FILE* fp;
	fp = fopen("data.txt","r");
	while((c=getc(fp)) != EOF)
	{
```

```
            if(c == '\n') ++countexist;
        }
        fclose(fp);

            for(int i=0;i<countexist;i++)
            {
                if(strcmp(existalpha,x[i].nama) == 0)
                {
                    return true;
                    break;
                }
            }

        return false;
}



// menu function
int count =0;
void addrecord();
void searchname();
void modifynumber();
void deleterecord();
```

```
int main()
{
	int input;
	do
	{
		title();
		scanf("%d",&input);
		getchar();
		system("cls");
	}while(input < 1 || input > 5);

	switch(input)
	{
		case 1:
		addrecord();
		break;
		case 2:
		searchname();
		break;
		case 3:
		modifynumber();
		break;
		case 4:
		deleterecord();
		break;
		case 5:
```

```
            printf("Thank you for using this program!\n");
            // untuk reset data jadi kosong begitu udah mau exit
            /*remove("data.txt");
            remove("copy.txt"); */

            exit(0);
            break;
        }
        return 0;
}

void addrecord()
{
        FILE* fp;

        // backup
        char namabackup[100];
        char nomorbackup[100];

        // penampung
        bool isalphafix =false;
        bool isnumfix = false;
        bool isexistalphafix = false;
        bool isexistnumfix = false;

        do{
```

```
        system("cls");
        printf("Input your friend name [alphabet only][5 - 40] : ");
        scanf("%[^\n]",namabackup);
        getchar();
        isalphafix = isalphabet(namabackup);
        isexistalphafix = isexistalpha(namabackup);
//      printf("isexistalpha = %d\n",isexistalphafix);
//      printf("isalpha =%d\n",isalphafix);
        }while(isalphafix == false || isexistalphafix == true);


        //debug checking nama yang distrcpy sesuai
        //printf("%s",x[count].nama);

        do{
        system("cls");
        printf("Input phone number [numeric only][12 digits] : ");
        scanf("%s",nomorbackup);
        getchar();
        isnumfix = isnum(nomorbackup);
        isexistnumfix = isexistnum(nomorbackup);
//      printf("isexistnum = %d\n",isexistnumfix);
//      printf("isnum = %d\n",isnumfix);
        }while(isnumfix == false || isexistnumfix == true);

        strcpy(x[count].nama,namabackup);
```

```
	strcpy(x[count].nomor,nomorbackup);
	fp =fopen("data.txt","a");
	fprintf(fp,"%s#%s\n",x[count].nama,x[count].nomor);
	fclose(fp);
	printf("Name : %s and Phonenumber : %s has been succesfully inputted\n",namabackup,nomorbackup);
	system("pause");

	// data ditambah
	count++;

	system("cls");
	main();
}

void searchname()
{
	// ambil index
	int idx = -1;


	// menghitung banyak data
	int counts = 0;
	char c;
	FILE* fp;
	fp = fopen("data.txt","r");
```

```
while((c=getc(fp)) != EOF)
{
        if(c == '\n') ++counts;
}
fclose(fp);


// check jumlah data sesuai apa ndak
//printf("%d",counts);

char searchnama[100];

//char searchnomor[100];

fp=fopen("data.txt","r");
int size;

// melihat dari awal hingga akhir
fseek(fp,0,SEEK_END);

// memberitahu jumlah char dari awal sampai akhir
size =ftell(fp);
fclose(fp);

// validasi data ada apa ngga pada file
if(size == 0 || fp == NULL)
```

```
	{
		printf("There is No data in File\n");
		system("pause");
		system("cls");
		main();
	}
	else
	{

		fp=fopen("data.txt","r");
		printf("List All Friends Name and Phonenumber\n");
		printf("=======================================\n");
		for(int i=0;i<counts;i++)
		{
			fscanf(fp,"%[^#]#%s\n",x[i].nama,x[i].nomor);
			printf("%d.Name : %s\nPhonenumber :
%s\n",i+1,x[i].nama,x[i].nomor);
		}
		fclose(fp);



		printf("input name that you want to search : ");
		scanf("%[^\n]",searchnama);

		/*
		fp=fopen("data.txt","r");
```

```
		for(int i=0;i<counts;i++)
		{
			fscanf(fp,"%s %s",x[i].nama,x[i].nomor);
			printf("Name : %s\n Number : %s\n",x[i].nama,x[i].nomor);
		}
		*/

		for(int i=0;i<counts;i++)
		{
			if(strcmp(searchnama,x[i].nama) == 0)
			{
				idx = i;
				break;
			}
		}
		fclose(fp);
		if(idx != -1) printf("Found name : %s with Phonenumber : %s\n",x[idx].nama,x[idx].nomor);
		else printf("No Similar name found!\n");
		system("pause");
		system("cls");
		main();
	}

}
```

```
void modifynumber()
{

	// menghitung banyak data
	int countsmodify = 0;

	int idx = -1;
	char c;

	FILE* fp;
	fp = fopen("data.txt","r");
	while((c=getc(fp)) != EOF)
	{
		if(c == '\n') ++countsmodify;
	}
	fclose(fp);

	char modifynama[100];
	char modifynomor[100];

	fp=fopen("data.txt","r");
	int size;

	// melihat dari awal hingga akhir
	fseek(fp,0,SEEK_END);
```

```
// memberitahu jumlah char dari awal sampai akhir
size =ftell(fp);
fclose(fp);

// validasi data ada apa ngga pada file
if(size == 0 || fp == NULL)
{
	printf("There is No data in File\n");
	system("pause");
	system("cls");
	main();
}
else
{



	do{
	system("cls");
	fp=fopen("data.txt","r");
	printf("List All Friends Name and Phonenumber\n");
	printf("=====================================\n");
	for(int i=0;i<countsmodify;i++)
	{
		fscanf(fp,"%[^#]#%s\n",x[i].nama,x[i].nomor);
```

```
                printf("%d.Name : %s\nNumber :
%s\n",i+1,x[i].nama,x[i].nomor);
        }
        fclose(fp);
        printf("input name that you want to modify the phonenumber : ");
        scanf("%[^\n]",modifynama);
        getchar();
        }while(isalphabet(modifynama) == false ||
isExistalphaformodify(modifynama) == false);

        if(countsmodify == 1)
        {
            if(strcmp(modifynama,x[0].nama) == 0)
            {
                idx = 0;
            }

            if(idx == 0)
            {
            int len;
            do{
            printf("input phonenumber to modify it [12 digits] : ");
            scanf("%s",modifynomor);
            len = strlen(modifynomor);
            getchar();
            }while(len != 12);
```

```
                        if(strcmp(x[idx].nomor,modifynomor) != 0)
                        {
                                fp = fopen("data.txt","w");
                                strcpy(x[idx].nomor,modifynomor);
                                printf("Sucessfully modify the
phonenumber!\n");
                                system("pause");
                                fprintf(fp,"%s#%s\n",x[0].nama,modifynomor);
                                fclose(fp);
                        }
                        else
                        {
                                printf("The Phonenumber is already exist!\n");
                                system("pause");
                                system("cls");
                                main();
                        }

                }
                else printf("No Similar name found!\n");
                system("cls");
                main();
        }

        // countmodify lebih dari 1 data
        else
```

```
{

for(int i=0;i<countsmodify;i++)
{
	if(strcmp(modifynama,x[i].nama) == 0)
	{
		idx = i;
		break;
	}
}

if(idx >= -1)
{
	int len;
	do{
	printf("input phonenumber to modify it [12 digits] : ");
	scanf("%s",modifynomor);
	len = strlen(modifynomor);
	getchar();
	}while(len != 12);

	fp = fopen("data.txt","w");
	for(int i=0;i<countsmodify;i++){
		if(strcmp(x[idx].nomor,modifynomor) != 0)
		{
			strcpy(x[idx].nomor,modifynomor);
```

```
                                        printf("Sucessfully modify the
phonenumber!\n");
                                        break;
                                        system("pause");
                                }
                                else
                                {
                                        printf("The Phonenumber is already exist!\n");
                                        break;
                                }
                        }
                        for(int i=0;i<countsmodify;i++){
                                fprintf(fp,"%s#%s\n",x[i].nama,x[i].nomor);
                        }
                        fclose(fp);
                }
                else printf("No Similar name found!\n");
                system("pause");
                system("cls");
                main();
                }
        }

}

void deleterecord()
```

```
{
        // menghitung banyak data
        int countdelete = 0;
        char c;
        FILE* fp;
        fp = fopen("data.txt","r");
        while((c=getc(fp)) != EOF)
        {
                if(c == '\n') ++countdelete;
        }
        fclose(fp);


        // check jumlah data sesuai apa ndak
        //printf("%d",countsdelete);



        fp=fopen("data.txt","r");
        int size;

        // melihat dari awal hingga akhir
        fseek(fp,0,SEEK_END);
```

```
// memberitahu jumlah char dari awal sampai akhir
size =ftell(fp);
fclose(fp);

// validasi data ada apa ngga pada file
if(size == 0 || fp == NULL)
{
	printf("There is No data in File\n");
	system("pause");
	system("cls");
	main();
}

else
{

	// file ke 2 untuk diganti jadi file utama
	char* text = "data.txt";

	fp=fopen("data.txt","r");
	int i;
	for(i=0;i<countdelete;i++)
	{
		fscanf(fp,"%[^#]#%s\n",x[i].nama,x[i].nomor);
	}
		x[i] = x[-99];
```

```
                countdelete--;
        fclose(fp);

        fp = fopen("copy.txt","w");
                        for(int i=0;i<countdelete;i++){
                        fprintf(fp,"%s#%s\n",x[i].nama,x[i].nomor);
                        }
    fclose(fp);

    remove(text);
    rename("copy.txt",text);
    printf("Deleted one Record Sucessfully!\n");
        system("pause");
        system("cls");
        main();
}



}
```