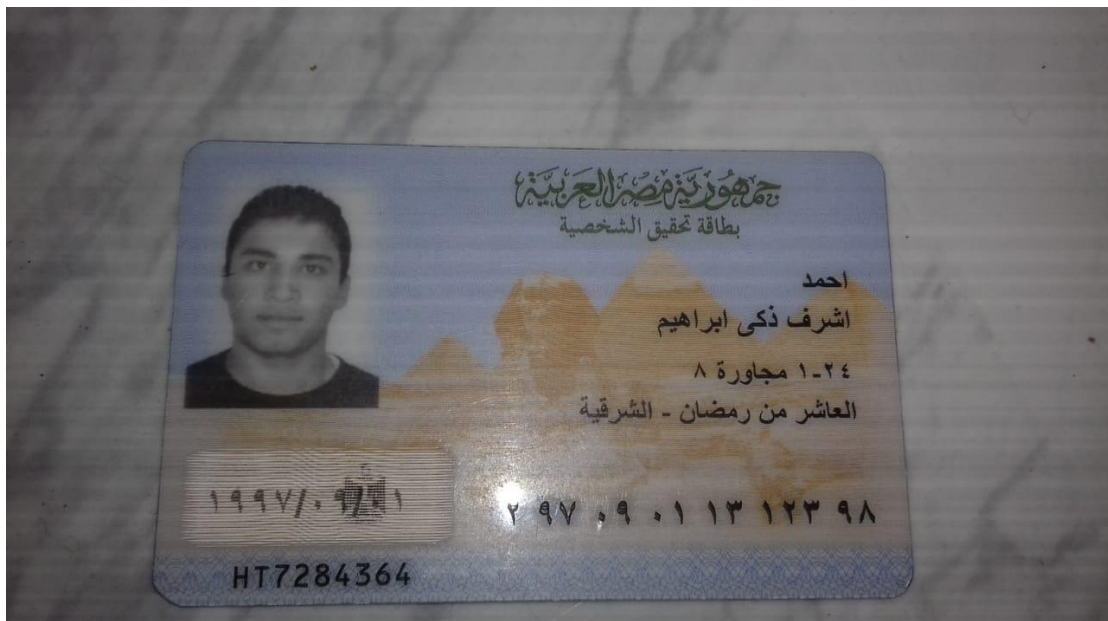


جامعة الزقازيق
كلية الهندسة
الفرقة الأولى قسم الهندسة الكهربائية

Research about

“Bank management system”

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Abstract

With c programming I will design a Bank Management System program. In this program the user will be able to do many things such as create new account, modify account, delete account, and make transactions.

In this program I will use struct for storing customer data (ID, name, phone number, address, birthday, type of deposit, and amount of money) and I will use array for storing many customers.

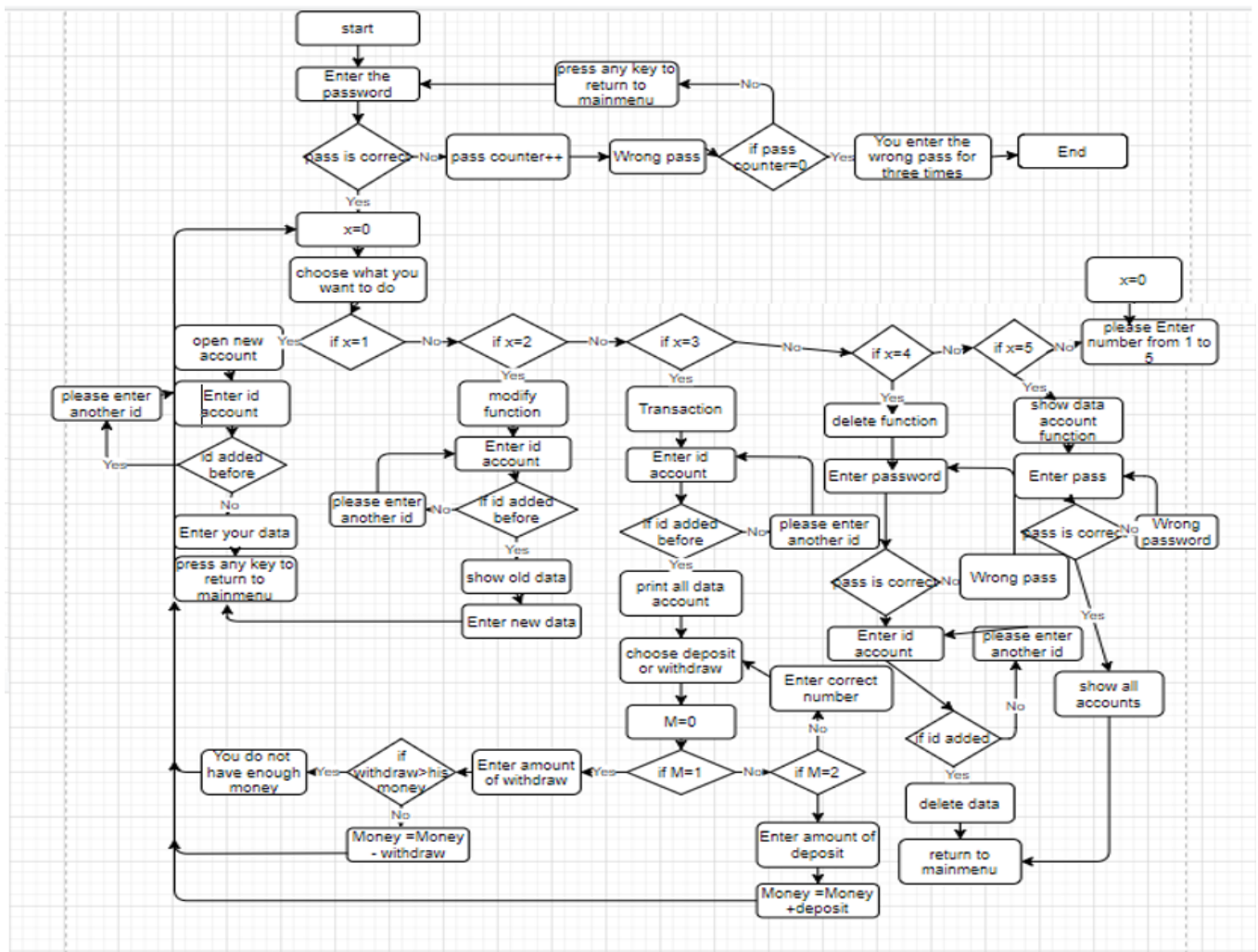
The main function in the program will be (void passwordcheck(), void mainmenu(), void addaccount(), void Updateaccount(), void depositorwithdraw(), void displayrecord(), void removedata(), and void change())

an abstract to purpose of this functions

- 1- **Add account:** This function creates a new customer account. It asks for some personal and banking details of the customer such as name, date of birth, address and phone number. You can enter the amount to deposit and choose one type of deposit account – saving, current, fixed for 1 year, fixed for 2 years or fixed for 3 years.
- 2- **Update account:** This function has been used for changing the name and phone number of a particular customer account.
- 3- **Transaction:** With this function, you can deposit and withdraw money to and from a particular customer account.
- 4- **Delete account:** This function is for deleting a customer account.
- 5- **Show all accounts:** this function for show all accounts data (name, phone number, birth, money, and type of deposit)

Introduction

1. Flow chart for the program



2- explain the functions

Functions	Input	Output
<p>Void passwordcheck()</p>	<p>when the program starts the user should enter the password and if he enters the wrong password for three times the program end and exit. Else the program goes to main menu function.</p>	<p>In the middle of screen program title appears when the program opens and some Sentence appears also such as (enter the password:, press any key to try again, you enter the wrong password for three times:)</p>

<code>void mainmenu()</code>	When the program opens some options appear in the screen window. These options have a number. If the user wants to do any processes he should enter the number of this option. In this program we have seven options.	In this function many sentences appear to the user. The user should choose one of the options for doing any processes. These sentences are (BANH MANAGEMENT SYSTEM, [1] open new account, [2] transaction (deposit and withdraw), [3] modify account data, [4] show all accounts data)
<code>void addaccount()</code>	When the user enters number 1 the program goes to this function. In this function the user should enter ID. And if it was added before the program asked the user for another ID. Else the user should enter his data such as (ID, name, phone number, address, type of his deposit, and his amount of money). When the user finishes the program return to main menu.	When this function opens, in the middle of screen the title of this function appears (OPEN NEW ACCOUNT). Some sentences such as (Enter Account number, his account number not available:;, Enter customer name:;, Enter customer phone number:;)
	When the user enters number 2 the program goes to this function. In the function the user should enter his ID and the program searches for it. if it	In the middle of screen window, the title of this function appears (Update account). And some sentences appear to the user such as (Enter Account

<code>void Updateaccount()</code>	was not added before the program asked the user for another ID else if the ID was added before the program print his data and asked the user for modifying his phone number and address. After finishing the program return to main menu.	number:, SAVING, current, fixed for one year, fixed for two year, Enter customer phone number:, Enter customer address:, your data has been Updated, press any key to return to main menu, this account did not Exist).
<code>void depositorwithdraw()</code>	When the user enters number 3 the program goes to this function. In the function the user should enter his ID and the program searches for it. if it was not added before the program asked the user for another ID else if the ID was added before the program print his data. And asked the for choosing the any transaction (withdraw or deposit). If the user wants to make withdraw, the amount of withdraw should be less than his money. After finishing the program return to main menu.	In the middle of screen window, the title of this function appears (Transaction:) And some sentences appears to the user such as (Enter Account number:, SAVING, current, fixed for one year, fixed for two year, fixed for three year, please enter number from 0 to 1 only:, enter the amount of withdraw:, you do not have enough money, enter another amount of withdraw:, your money after withdraw is:, enter the amount of deposit:, this account did not Exist).

<code>void displayrecord()</code>	When the user enters number 4 the program goes to this function. In this function the user first should enter the password. If the password was not correct the program returns to main menu. Else the program prints all records of data customers.	In the middle of screen window, the title of this function appears (SHOW ALL RECORDS) And some sentences appears to the user such as (Enter password:, SAVING, fixed for one year, You enter the wrong password, press any key to return to main menu).
<code>void removedata()</code>	User should enter the password to open this function. If the password was incorrect the program returns to main menu. Else the delete record patients open. After that user should enter the number of the patient. the program search for it. If it found the program delete record data of this patient. Else if it was not found, error message told the user that this patient not added before and the program return to main menu.	When the delete record patient function opens its title appear in the middle of the screen with a font down it. Some sentences appear one by one under each other such as(enter the password:, enter number of patient:, data has been delete successfully, press any key to return to main menu:, his number did not found press any key to go to main menu).
	User should enter the old password. If the password was incorrect the program returns to	When the change password function opens its title appear in the middle of the screen with a font

<code>void change()</code>	main menu. Else if the program tell the user that he should enter the new password to change it. After that, the program returns to main menu.	down it. Some sentences appear one by one under each other such as (enter the old password: enter the new password: password has been changed successfully).
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Results

The code
<pre> #include <stdio.h> #include <stdlib.h> #include<string.h> char password[30]="banksystem"; int counter=0,counter1; /*****To make the functions take time to run*****/ void deltatime(int t){ int t1,t2; for(t1=0;t1<t;t1++){ t2=t1; } } /***** structure for customer data*****/ struct customer { int ID,phonenumner,balance,depositttype; int day,month,year; char name[30],address[50]; };struct customer a [1000]; /** this function for checking the password if it was corrected or not*****/ void passwordcheck(){ system("CLS"); char ps[30]; printf("\n\t\t\t\t\tenter the password:"); scanf("%s",ps); /*****check if the password is correct or not*****/ if(strcmp(ps,password)!=0){ /***** counter to check if the pass entered three times or not*****/ if(counter<2){ counter++; printf("\n\t\t\t\t\tyou enter the wrong password!:("); printf("(press any key to try again)"); </pre>

```

getch();
passwordcheck();
}
/** if the user enter the password wrong for three times*****/
system("CLS");
printf("\n\t\t\t you enter the wrong password for three times:(\n");
exit(0);
}
printf("\nloading");
for(int t=0;t<=50;t++){
    deltatime(99999999);
    printf("\xCD");
}
mainmenu();
}
/***** this function for showing the options which user can
choice one of them*****/
void mainmenu(){
system("CLS");
int m;
do{
system("CLS");
/***** draw borders*****/
for(int x=0;x<=19;x++){
printf("\n\t\t\t\t");
for(int y=0;y<=43;y++){
if(x==0 && y==0)printf("\xD6");
if(x==0 && y!=43)printf("=");
if(x==0 & y==42)printf("\xB7");
if((y==0 || y==43) && x!=0 && x!=19) printf("|");
if(x==1 && y==1)printf("\t BANH MANAGEMENT
SYSTEM\t ");
if(x==2 && y==1)printf("\t\t\t\t");
if(x==3 && y==1)printf("\t\t\t\t");
if(x==4 && y==1)printf("\t\t\t\t");
if(x==5 && y==1)printf(" [1] open new account\t\t");
if(x==6 && y==1)printf("\t\t\t\t");
if(x==7 && y==1)printf(" [2] transaction(deposit and
withdraw) ");
if(x==8 && y==1)printf("\t\t\t\t");
if(x==9 && y==1)printf(" [3] modify account data\t\t");
if(x==10 && y==1)printf("\t\t\t\t");
if(x==11 && y==1)printf(" [4] show all accounts data\t\t");
if(x==12 && y==1)printf("\t\t\t\t");
if(x==13 && y==1)printf(" [5] delete account data\t\t");
if(x==14 && y==1)printf("\t\t\t\t");
if(x==15 && y==1)printf(" [6] change password\t\t");
if(x==16 && y==1)printf("\t\t\t\t");
if(x==17 && y==1)printf(" [0] Exit\t\t\t\t");
if(x==18 && y==1)printf("\t\t\t\t");

```



```

if(x==19 && (y>0 || y>=42))printf("");
if(x==19 && y==0)printf("\xD3");
if(x==19 & y==43)printf("\xBD");
}
}

printf("\nenter number from (0) to (6):");
scanf("%d",&m);
if(m==0)exit(0);
else if(m==1)addaccount();
else if(m==2)depositorwithdraw();
else if(m==3)Updateaccount();
else if(m==4)displayrecord();
else if(m==5)removedata();
else if(m==6)change();
}while(m>=6);
}

/***** this function for adding new account *****/
void addaccount(){
system("CLS");
int accnumber;
printf("\n\t\t\t\tOPEN NEW ACCOUNT\n\n");
printf("\t\t\tEnter Account number: ");
scanf("%d",&accnumber);
/***** check if this number was added before or not*****/
for(int x=0;x<=counter1;x++){
    if(accnumber==a[x].ID){
        printf("\n\t\t\tthis account number not available:");
        printf("\n\npress any key to enter another ID");
        getch();
        addaccount();
    }
}
}

/** adding data of account***/
a[counter1].ID=accnumber;
printf("\n\t\t\tEnter customer name: ");
scanf("%s",a[counter1].name);
printf("\n\t\t\tEnter customer phone number: ");
scanf("%d",&a[counter1].phonenumber);
printf("\n\t\t\tEnter customer address: ");
scanf("%s",a[counter1].address);
printf("\n\t\t\tenter customer birth date(day/month/year): ");
scanf("%d %d %d",&a[counter1].day,&a[counter1].month,&a[counter1].year);
printf("\n\t\t\tEnter customer deposit: ");
scanf("%d",&a[counter1].balance);
printf("\ntype of deposit\n\t\t\t[0] saving\n\t\t\t[1]
current\n\t\t\t[2] fixed for one year");
printf("\n\t\t\t[3] fixed for two year\n\t\t\t[4] fixed for three
year\n");
printf("\n\t\t\tEnter the type of deposit: ");

```

```

scanf("%d",&a[counter1].deposittype);
while(a[counter1].deposittype>4){
    printf("\n\t\t\t\t\tEnter number from 0 to 4 only: ");
    scanf("%d",&a[counter1].deposittype);
}
counter1++;
printf("\nloading");
for(int t=0;t<=50;t++){
    deltatime(9999999);
    printf("\xCD");
}
printf("\n\t\t\t\t\tyour account has been created successfully");
printf("\n\npress any key to return to main menu");
getch();
mainmenu();
}
/*****this function for modifying account
data*****/
void Updateaccount(){
system("CLS");
int u;
printf("\n\t\t\t\t\tUpdate account\n\n");
printf("\t\t\t\t\tEnter Account number: ");
scanf("%d",&u);
for(int x=0;x<=counter1;x++){
    if(u==a[x].ID){
        printf("\n ID\tname\tphone number\tAddress\t\tday month
year\t\tmoney\tdeposit type\n");
        for(int i=0;i<=116;i++){
            printf("\xCD");
        }
        printf("\n  %d\t%s\t0%d\t%s\t\t%d %d
%d\t\t%d\t",a[x].ID,a[x].name,a[x].phonenumber,a[x].address,a[x].d
ay,a[x].month,a[x].year,a[x].balance);
        /****for printing the type if deposit*****/
        if(a[x].deposittype==0)printf("SAVING");
        else if(a[x].deposittype==1)printf("current");
        else if(a[x].deposittype==2)printf("fixed for one year");
        else if(a[x].deposittype==3)printf("fixed for two year");
        else printf("fixed for three year");
        printf("\n");
        for(int i=0;i<=116;i++){
            printf("\xCD");
        }
    }
}
/*****enter new data*****/
printf("\n\n\t\t\t\t\tEnter customer phone number: ");
scanf("%d",&a[x].phonenumber);
printf("\n\t\t\t\t\tEnter customer address: ");
scanf("%s",a[x].address);
printf("\nloading");

```

```
for(int t=0;t<=50;t++){
    deltatime(99999999);
    printf("\xCD");
}
printf("\n\t\t\t\t\t your data has been Updated");
printf("\n\npress any key to return to main menu");
getch();
mainmenu();
}
}
printf("\n\t\t\t\t\t this account did not Exist");
printf("\n\npress any key to try again");
getch();
Updateaccount();
}
/*****this function allow the user to make deposit or withdraw
by his account*****/
void depositorwithdraw(){
system("CLS");
int number,d,w,z=1;
printf("\n\t\t\t\t\t Transaction:\n\n");
printf("\t\t\t\t Enter Account number: ");
scanf("%d",&number);
for(int x=0;x<=counter1;x++){
    if(number==a[x].ID){
        printf("\n ID\tname\t\tphone number\tAddress\t\tday month
year\t\tmoney\tdeposit type\n");
        for(int i=0;i<=116;i++){
            printf("\xCD");
        }
        printf("\n %d\t%s\t0%d\t%s\t\t%d %d
%d\t\t%d\t",a[x].ID,a[x].name,a[x].phonenumber,a[x].address,a[x].d
ay,a[x].month,a[x].year,a[x].balance);
        /****for printing the type if deposit*****/
        if(a[x].deposittype==0)printf("SAVING");
        else if(a[x].deposittype==1)printf("current");
        else if(a[x].deposittype==2)printf("fixed for one year");
        else if(a[x].deposittype==3)printf("fixed for two year");
        else printf("fixed for three year");
        printf("\n");
        for(int i=0;i<=116;i++){
            printf("\xCD");
        }
        printf("\n\n\n\t\t\t\t\t what is the process which you want to
do\n\n\t\t\t\t\t(0) withdraw or(1) deposit:");
        scanf("%d",&d);
        while(d>1){
            printf("\n\t\t\t\t\t please enter number from o to 1 only: ");
            scanf("%d",&d);
        }
    }
}
```

```

if(d==0){
printf("\n\t\t\t\tenter the amount of withdraw: ");
while(z==1){
scanf("%d",&w);
if(w>a[x].balance){
printf("\n\t\t\t\tyou do not have enough money");
printf("\n\t\t\t\tenter another amount of withdraw:");
}
else{
a[x].balance=a[x].balance-w;
z=2;
}
}
printf("\n\t\t\t\tyour money after withdraw is:
%d",a[x].balance);
printf("\n\npress any key to return to main menu");
getch();
mainmenu();
}
else{
printf("\n\t\t\t\tenter the amount of deposit: ");
scanf("%d",&w);
a[x].balance=a[x].balance+w;
printf("\n\t\t\t\tyour money after withdraw is:
%d",a[x].balance);
printf("\n\npress any key to return to main menu");
getch();
mainmenu();
}
}
}
printf("\n\t\t\t\tthis account did not Exist");
printf("\n\npress any key to try again");
getch();
depositorwithdraw();
}
/*****function for showing all records*****/
void displayrecord(){
system("CLS");
char ps[30];
printf("\n\t\t\t\tSHOW ALL RECORDS\n\n\n");
printf("\n\t\t\t\tEnter password: ");
scanf("%s",ps);
if(strcmp(ps,password)==0){
system("CLS");
printf("\n\t\t\t\tSHOW ALL RECORDS\n");
printf("\nloading");
for(int t=0;t<=50;t++){
deltatime(9999999);

```

```

        printf("\xCD");
    }
    printf("\n\n\n ID\tname\t\tphone number\tAddress\t\tday month
year\t\tmoney\t\tdeposit type\n");
    for(int i=0;i<=116;i++){
        printf("\xCD");
    }
    for(int x=0;x<counter1;x++){
        printf("\n  %d\t%s\t0%d\t%s\t\t%d  %d
%d\t\t%d\t",a[x].ID,a[x].name,a[x].phonenumner,a[x].address,a[x].d
ay,a[x].month,a[x].year,a[x].balance);
        /**for printing the type if deposit***/
        if(a[x].deposittype==0)printf("SAVING");
        else if(a[x].deposittype==1)printf("current");
        else if(a[x].deposittype==2)printf("fixed for one year");
        else if(a[x].deposittype==3)printf("fixed for two year");
        else printf("fixed for three year");
        printf("\n");
        for(int i=0;i<=116;i++){
            printf("\xCD");
        }
    }
    printf("\n\npress any key to return to main menu");
    getch();
    mainmenu();
}
else {
    printf("\n\t\t\t\t\tYou enter the wrong password");
    printf("\n\npress any key to return to main menu");
    getch();
    mainmenu();
}
}
}
/*****this function for deleting data of
customer*****/
void removedata(){
    system("CLS");
    int number;
    char r[30];
    printf("\n\t\t\t\t\tDELETE ACCOUNT\n\n\n");
    printf("\t\t\t\t\tEnter password: ");
    scanf("%s",r);
    if(strcmp(r,password)!=0){
        printf("\n\t\t\t\t\tYou enter the wrong password");
        printf("\n\npress any key to return to main menu");
        getch();
        mainmenu();
    }
    system("CLS");
    printf("\n\t\t\t\t\tDELETE ACCOUNT\n\n\n");

```

```

printf("\t\t\tEnter customer number: ");
scanf("%d",&number);
for(int x=0;x<=counter1;x++){
    if(number==a[x].ID){
        a[x].ID=0;
        a[x].phonenum=0;
        a[x].balance=0;
        a[x].depositttype=0;
        a[x].day=0;
        a[x].month=0;
        a[x].year=0;
        printf("\nloading");
        for(int t=0;t<=50;t++){
            deltatime(9999999);
            printf("\xCD");
        }
        printf("\n\t\t\taccount data has been deleted successfully");
        printf("\n\npress any key to return to main menu");
        getch();
        mainmenu();
    }
}
printf("\n\t\t\tthis account number not available:");
printf("\n\npress any key to return to main menu");
getch();
mainmenu();

}
/*****function for changing password*****/
void change(){
    system("CLS");
    char ps[30];
    printf("\n\t\t\tCHANGE PASSWORD\n\n");
    printf("\t\t\tEnter old password: ");
    scanf("%s",ps);
    if(strcmp(ps,password)!=0){
        printf("\n\t\t\tYou enter the wrong password");
        printf("\n\npress any key to return to main menu");
        getch();
        mainmenu();
    }
    printf("\n\t\t\tEnter new password: ");
    scanf("%s",password);
    printf("\nloading");
    for(int t=0;t<=50;t++){
        deltatime(9999999);
        printf("\xCD");
    }
    printf("\n\t\t\tpassword changed successfully:");
    printf("\n\npress any key to return to main menu");

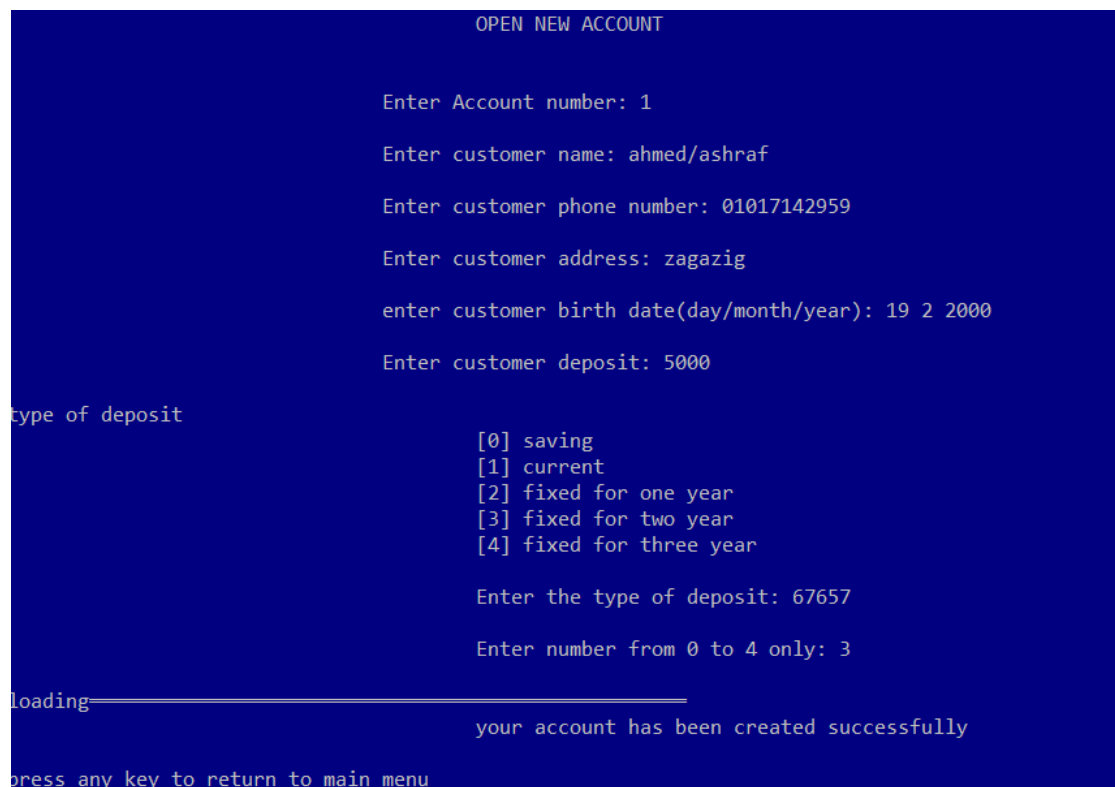
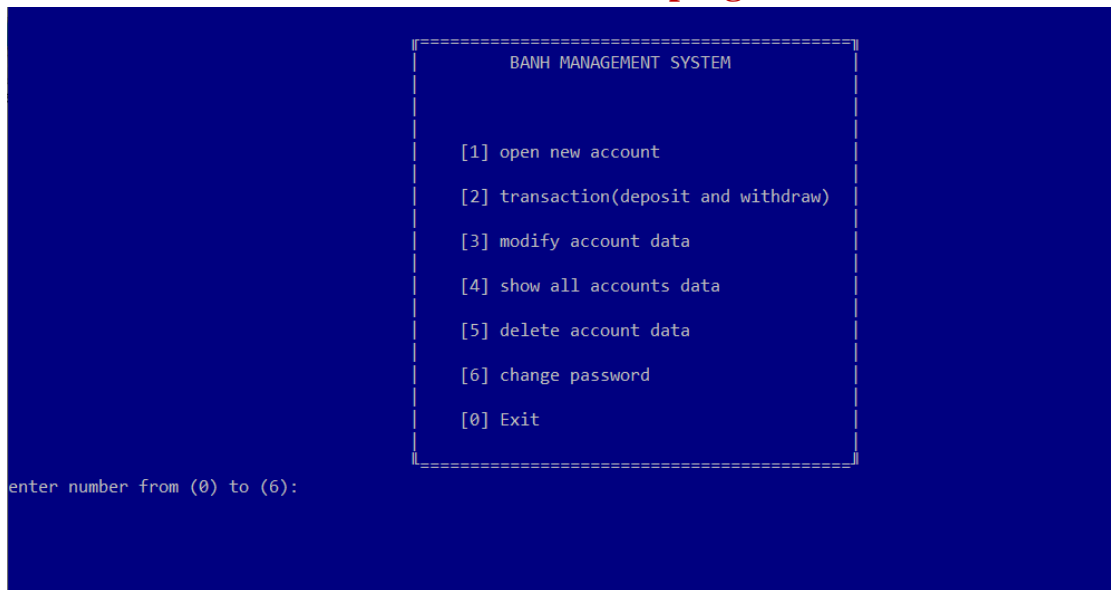
```

```

        getch();
        mainmenu();
    }
    int main()
    {
        system("color 17");
        passwordcheck();
    }

```

Screenshot for the program



Transaction:

Enter Account number: 1

ID	name	phone number	Address	day month year	money	deposit type
1	ahmed/ashraf	01017142959	zagazig	19 2 2000	5000	fixed for two year

what is the process which you want to do

(0) withdraw or(1) deposit:0

enter the amount of withdraw: 5001

you do not have enough money
enter another amount of withdraw:4000

your money after withdraw is: 1000

press any key to return to main menu

Update account

Enter Account number: 1

ID	name	phone number	Address	day month year	money	deposit type
1	ahmed/ashraf	01017142959	zagazig	19 2 2000	1000	fixed for two year

Enter customer phone number: 01017142955

Enter customer address: Faqous

loading=====

your data has been Updated

press any key to return to main menu

SHOW ALL RECORDS

loading=====

ID	name	phone number	Address	day month year	money	deposit type
1	ahmed/ashraf	01017142955	Faqous	19 2 2000	1000	fixed for two year
2	ahmed/zaki	01016577098	zagazig	2 6 2000	4356	current


```
void passwordcheck(){
system("CLS");
char ps[30];
printf("\n\t\t\t\tenter the password:");
scanf("%s",ps);
/*****check if the password is correct or not*****/
if(strcmp(ps,password)!=0){
/***** counter to check if the pass entered three times or not*****/
if(counter<2){
counter++;
printf("\n\t\t\ttyou enter the wrong password!:( ");
printf("(press any key to try again)");
getch();
passwordcheck();
}
/** if the user enter the password wrong for three times****/
system("CLS");
printf("\n\t\t\t\ttyou enter the wrong password for three times:(\n");
exit(0);
}
printf("\nloading");
for(int t=0;t<=50;t++){
deltatime(9999999);
printf("\xCD");
}
mainmenu();
}
```

Conclusion

In the end, this program contains many functions such as create a new account, display all the account, and changing the password. The user can perform any process, deposit funds, or withdraw funds. For security, the program has a password. The user can change it. In this program all data stored in general variables not local, and we used the array to allow the user to enter multiple accounts and not just one account. And we are using struct also. In the end, this program can be run easily without errors.

References

2. I have used this site for flow char
(https://app.diagrams.net/?fbclid=IwAR3uccRe2yf2uzv_qk2efnl1G1GJW0YGzzBIM4hYljGGzogIFctVqt-ZXw)
3. I have used this site for this function [system("color 17");]
(<https://www.programmingsimplified.com/c/graphics.h/colors>)