Green University of Bangladesh
Department of Computer Science and Engineering (CSE)

Faculty of Science and Engineering
Semester: (Fall, Year:2022), B.Sc. in CSE (Day)

Code & Outputs

Course Title: Data Structure Lab
Course Code: CSE-106   **Section: 221-D6**

Student Details

	Name	ID
1.	Md. Harun-Ur-Roshid	221002138

Submission Date   : 04-01-2023
Course Teacher's Name   : S.M. Rashidul Hasan Nijhum

[For Teachers use only: **Don't Write Anything inside this box**]

Code

```c
/*
Project Name: Bank Management System
Student Name: Md. Harun-Ur-Roshid
Student ID: 221002138
Batch: 221-CSE(R)
*/

#include <stdio.h>
#include <stdlib.h>
#include <windows.h>
int i, j;
int main_exit;
void menu();
struct date
{
   int month, day, year;
};
struct
{

   char name[60];
   int acc_no, age;
   char address[60];
   char citizenship[15];
   double phone;
   char acc_type[10];
   float amt;
   struct date dob;
   struct date deposit;
   struct date withdraw;

} add, upd, check, rem, transaction;

float interest(float t, float amount, int rate)
{
   float SI;
   SI = (rate * t * amount) / 100.0;
   return (SI);
```

```c
}
void fordelay(int j)
{
    int i, k;
    for (i = 0; i < j; i++)
        k = i;
}

void new_acc()

{
    int choice;
    FILE *ptr;

    ptr = fopen("record.dat", "a+");
account_no:
    system("cls");
    printf("\t\t\t\xB2\xB2\xB2\ ADD RECORD  \xB2\xB2\xB2\xB2");
    printf("\n\n\nEnter today's date(mm/dd/yyyy):");
    scanf("%d/%d/%d", &add.deposit.month, &add.deposit.day, &add.deposit.year);
    printf("\nEnter the account number:");
    scanf("%d", &check.acc_no);
    while (fscanf(ptr, "%d %s %d/%d/%d %d %s %s %lf %s %f %d/%d/%d\n",
&add.acc_no, add.name, &add.dob.month, &add.dob.day, &add.dob.year, &add.age,
add.address, add.citizenship, &add.phone, add.acc_type, &add.amt,
&add.deposit.month, &add.deposit.day, &add.deposit.year) != EOF)
    {
        if (check.acc_no == add.acc_no)
        {
            printf("Account no. already in use!");
            fordelay(1000000000);
            goto account_no;
        }
    }
    add.acc_no = check.acc_no;
    printf("\nEnter the name:");
    scanf("%s", add.name);
    printf("\nEnter the date of birth(mm/dd/yyyy):");
    scanf("%d/%d/%d", &add.dob.month, &add.dob.day, &add.dob.year);
    printf("\nEnter the age:");
    scanf("%d", &add.age);
```

```c
    printf("\nEnter the address:");
    scanf("%s", add.address);
    printf("\nEnter the citizenship number:");
    scanf("%s", add.citizenship);
    printf("\nEnter the phone number: ");
    scanf("%lf", &add.phone);
    printf("\nEnter the amount to deposit:$");
    scanf("%f", &add.amt);
    printf("\nType of account:\n\t#Saving\n\t#Current\n\t#Fixed1(for 1
year)\n\t#Fixed2(for 2 years)\n\t#Fixed3(for 3 years)\n\n\tEnter your choice:");
    scanf("%s", add.acc_type);

    fprintf(ptr, "%d %s %d/%d/%d %d %s %s %lf %s %f %d/%d/%d\n", add.acc_no,
add.name, add.dob.month, add.dob.day, add.dob.year, add.age, add.address,
add.citizenship, add.phone, add.acc_type, add.amt, add.deposit.month,
add.deposit.day, add.deposit.year);

    fclose(ptr);
    printf("\nAccount created successfully!");
add_invalid:
    printf("\n\n\n\t\tEnter 1 to go to the main menu and 0 to exit:");
    scanf("%d", &main_exit);
    system("cls");
    if (main_exit == 1)
        menu();
    else if (main_exit == 0)
        close();
    else
    {
        printf("\nInvalid!\a");
        goto add_invalid;
    }
}
void view_list()
{
    FILE *view;
    view = fopen("record.dat", "r");
    int test = 0;
    system("cls");
    printf("\nACC. NO.\tNAME\t\t\tADDRESS\t\t\tPHONE\n");
```

```c
    while (fscanf(view, "%d %s %d/%d/%d %d %s %s %lf %s %f %d/%d/%d",
&add.acc_no, add.name, &add.dob.month, &add.dob.day, &add.dob.year, &add.age,
add.address, add.citizenship, &add.phone, add.acc_type, &add.amt,
&add.deposit.month, &add.deposit.day, &add.deposit.year) != EOF)
    {
        printf("\n%6d\t %10s\t\t\t%10s\t\t%.0lf", add.acc_no, add.name, add.address,
add.phone);
        test++;
    }

    fclose(view);
    if (test == 0)
    {
        system("cls");
        printf("\nNO RECORDS!!\n");
    }

view_list_invalid:
    printf("\n\nEnter 1 to go to the main menu and 0 to exit:");
    scanf("%d", &main_exit);
    system("cls");
    if (main_exit == 1)
        menu();
    else if (main_exit == 0)
        close();
    else
    {
        printf("\nInvalid!\a");
        goto view_list_invalid;
    }
}
void edit(void)
{
    int choice, test = 0;
    FILE *old, *newrec;
    old = fopen("record.dat", "r");
    newrec = fopen("new.dat", "w");

    printf("\nEnter the account no. of the customer whose info you want to change:");
    scanf("%d", &upd.acc_no);
    while (fscanf(old, "%d %s %d/%d/%d %d %s %s %lf %s %f %d/%d/%d",
```

```c
           &add.acc_no, add.name, &add.dob.month, &add.dob.day, &add.dob.year, &add.age,
add.address, add.citizenship, &add.phone, add.acc_type, &add.amt,
&add.deposit.month, &add.deposit.day, &add.deposit.year) != EOF)
    {
      if (add.acc_no == upd.acc_no)
      {
        test = 1;
        printf("\nWhich information do you want to
change?\n1.Address\n2.Phone\n\nEnter your choice(1 for address and 2 for
phone):");
          scanf("%d", &choice);
          system("cls");
          if (choice == 1)
          {
            printf("Enter the new address:");
            scanf("%s", upd.address);
            fprintf(newrec, "%d %s %d/%d/%d %d %s %s %lf %s %f %d/%d/%d\n",
add.acc_no, add.name, add.dob.month, add.dob.day, add.dob.year, add.age,
upd.address, add.citizenship, add.phone, add.acc_type, add.amt, add.deposit.month,
add.deposit.day, add.deposit.year);
            system("cls");
            printf("Changes saved!");
          }
          else if (choice == 2)
          {
            printf("Enter the new phone number:");
            scanf("%lf", &upd.phone);
            fprintf(newrec, "%d %s %d/%d/%d %d %s %s %lf %s %f %d/%d/%d\n",
add.acc_no, add.name, add.dob.month, add.dob.day, add.dob.year, add.age,
add.address, add.citizenship, upd.phone, add.acc_type, add.amt, add.deposit.month,
add.deposit.day, add.deposit.year);
            system("cls");
            printf("Changes saved!");
          }
      }
      else
          fprintf(newrec, "%d %s %d/%d/%d %d %s %s %lf %s %f %d/%d/%d\n",
add.acc_no, add.name, add.dob.month, add.dob.day, add.dob.year, add.age,
add.address, add.citizenship, add.phone, add.acc_type, add.amt, add.deposit.month,
add.deposit.day, add.deposit.year);
    }
```

```c
        fclose(old);
        fclose(newrec);
        remove("record.dat");
        rename("new.dat", "record.dat");

        if (test != 1)
        {
            system("cls");
            printf("\nRecord not found!!\a\a\a");
        edit_invalid:
            printf("\nEnter 0 to try again,1 to return to main menu and 2 to exit:");
            scanf("%d", &main_exit);
            system("cls");
            if (main_exit == 1)

                menu();
            else if (main_exit == 2)
                close();
            else if (main_exit == 0)
                edit();
            else
            {
                printf("\nInvalid!\a");
                goto edit_invalid;
            }
        }
        else
        {
            printf("\n\n\nEnter 1 to go to the main menu and 0 to exit:");
            scanf("%d", &main_exit);
            system("cls");
            if (main_exit == 1)
                menu();
            else
                close();
        }
}

void transact(void)
{
    int choice, test = 0;
```

```c
FILE *old, *newrec;
old = fopen("record.dat", "r");
newrec = fopen("new.dat", "w");

printf("Enter the account no. of the customer:");
scanf("%d", &transaction.acc_no);
while (fscanf(old, "%d %s %d/%d/%d %d %s %s %lf %s %f %d/%d/%d",
&add.acc_no, add.name, &add.dob.month, &add.dob.day, &add.dob.year, &add.age,
add.address, add.citizenship, &add.phone, add.acc_type, &add.amt,
&add.deposit.month, &add.deposit.day, &add.deposit.year) != EOF)
  {

    if (add.acc_no == transaction.acc_no)
    {
       test = 1;
       if (strcmpi(add.acc_type, "fixed1") == 0 || strcmpi(add.acc_type, "fixed2") ==
0 || strcmpi(add.acc_type, "fixed3") == 0)
       {
          printf("\a\a\a\n\nYOU CANNOT DEPOSIT OR WITHDRAW CASH IN
FIXED ACCOUNTS!!!!!");
          fordelay(1000000000);
          system("cls");
          menu();
       }
       printf("\n\nDo you want to\n1.Deposit\n2.Withdraw?\n\nEnter your choice(1
for deposit and 2 for withdraw):");
       scanf("%d", &choice);
       if (choice == 1)
       {
          printf("Enter the amount you want to deposit:$ ");
          scanf("%f", &transaction.amt);
          add.amt += transaction.amt;
          fprintf(newrec, "%d %s %d/%d/%d %d %s %s %lf %s %f %d/%d/%d\n",
add.acc_no, add.name, add.dob.month, add.dob.day, add.dob.year, add.age,
add.address, add.citizenship, add.phone, add.acc_type, add.amt, add.deposit.month,
add.deposit.day, add.deposit.year);
          printf("\n\nDeposited successfully!");
       }
       else
       {
          printf("Enter the amount you want to withdraw:$ ");
```

```c
            scanf("%f", &transaction.amt);
            add.amt -= transaction.amt;
            fprintf(newrec, "%d %s %d/%d/%d %d %s %s %lf %s %f %d/%d/%d\n",
add.acc_no, add.name, add.dob.month, add.dob.day, add.dob.year, add.age,
add.address, add.citizenship, add.phone, add.acc_type, add.amt, add.deposit.month,
add.deposit.day, add.deposit.year);
            printf("\n\nWithdrawn successfully!");
        }
    }
    else
    {
        fprintf(newrec, "%d %s %d/%d/%d %d %s %s %lf %s %f %d/%d/%d\n",
add.acc_no, add.name, add.dob.month, add.dob.day, add.dob.year, add.age,
add.address, add.citizenship, add.phone, add.acc_type, add.amt, add.deposit.month,
add.deposit.day, add.deposit.year);
    }
}
fclose(old);
fclose(newrec);
remove("record.dat");
rename("new.dat", "record.dat");
if (test != 1)
{
    printf("\n\nRecord not found!!");
transact_invalid:
    printf("\n\n\nEnter 0 to try again,1 to return to main menu and 2 to exit:");
    scanf("%d", &main_exit);
    system("cls");
    if (main_exit == 0)
        transact();
    else if (main_exit == 1)
        menu();
    else if (main_exit == 2)
        close();
    else
    {
        printf("\nInvalid!");
        goto transact_invalid;
    }
}
else
```

```c
    {
        printf("\nEnter 1 to go to the main menu and 0 to exit:");
        scanf("%d", &main_exit);
        system("cls");
        if (main_exit == 1)
            menu();
        else
            close();
    }
}
void erase(void)
{
    FILE *old, *newrec;
    int test = 0;
    old = fopen("record.dat", "r");
    newrec = fopen("new.dat", "w");
    printf("Enter the account no. of the customer you want to delete:");
    scanf("%d", &rem.acc_no);
    while (fscanf(old, "%d %s %d/%d/%d %d %s %s %lf %s %f %d/%d/%d",
&add.acc_no, add.name, &add.dob.month, &add.dob.day, &add.dob.year, &add.age,
add.address, add.citizenship, &add.phone, add.acc_type, &add.amt,
&add.deposit.month, &add.deposit.day, &add.deposit.year) != EOF)
    {
        if (add.acc_no != rem.acc_no)
            fprintf(newrec, "%d %s %d/%d/%d %d %s %s %lf %s %f %d/%d/%d\n",
add.acc_no, add.name, add.dob.month, add.dob.day, add.dob.year, add.age,
add.address, add.citizenship, add.phone, add.acc_type, add.amt, add.deposit.month,
add.deposit.day, add.deposit.year);

        else
        {
            test++;
            printf("\nRecord deleted successfully!\n");
        }
    }
    fclose(old);
    fclose(newrec);
    remove("record.dat");
    rename("new.dat", "record.dat");
    if (test == 0)
    {
```

```c
        printf("\nRecord not found!!\a\a\a");
    erase_invalid:
        printf("\nEnter 0 to try again,1 to return to main menu and 2 to exit:");
        scanf("%d", &main_exit);

        if (main_exit == 1)
            menu();
        else if (main_exit == 2)
            close();
        else if (main_exit == 0)
            erase();
        else
        {
            printf("\nInvalid!\a");
            goto erase_invalid;
        }
    }
    else
    {
        printf("\nEnter 1 to go to the main menu and 0 to exit:");
        scanf("%d", &main_exit);
        system("cls");
        if (main_exit == 1)
            menu();
        else
            close();
    }
}

void see(void)
{
    FILE *ptr;
    int test = 0, rate;
    int choice;
    float time;
    float intrst;
    ptr = fopen("record.dat", "r");
    printf("Do you want to check by\n1.Account no\n2.Name\nEnter your choice:");
    scanf("%d", &choice);
    if (choice == 1)
    {
```

```c
        printf("Enter the account number:");
        scanf("%d", &check.acc_no);

    while (fscanf(ptr, "%d %s %d/%d/%d %d %s %s %lf %s %f %d/%d/%d",
&add.acc_no, add.name, &add.dob.month, &add.dob.day, &add.dob.year, &add.age,
add.address, add.citizenship, &add.phone, add.acc_type, &add.amt,
&add.deposit.month, &add.deposit.day, &add.deposit.year) != EOF)
    {
      if (add.acc_no == check.acc_no)
      {
        system("cls");
        test = 1;

        printf("\nAccount NO.:%d\nName:%s \nDOB:%d/%d/%d \nAge:%d
\nAddress:%s \nCitizenship No:%s \nPhone number:%.0lf \nType Of Account:%s
\nAmount deposited:$ %.2f \nDate Of Deposit:%d/%d/%d\n\n", add.acc_no,
add.name, add.dob.month, add.dob.day, add.dob.year, add.age, add.address,
add.citizenship, add.phone,
            add.acc_type, add.amt, add.deposit.month, add.deposit.day,
add.deposit.year);
        if (strcmpi(add.acc_type, "fixed1") == 0)
        {
          time = 1.0;
          rate = 9;
          intrst = interest(time, add.amt, rate);
          printf("\n\nYou will get $%.2f as interest on %d/%d/%d", intrst,
add.deposit.month, add.deposit.day, add.deposit.year + 1);
        }
        else if (strcmpi(add.acc_type, "fixed2") == 0)
        {
          time = 2.0;
          rate = 11;
          intrst = interest(time, add.amt, rate);
          printf("\n\nYou will get $.%.2f as interest on %d/%d/%d", intrst,
add.deposit.month, add.deposit.day, add.deposit.year + 2);
        }
        else if (strcmpi(add.acc_type, "fixed3") == 0)
        {
          time = 3.0;
          rate = 13;
          intrst = interest(time, add.amt, rate);
```

```c
            printf("\n\nYou will get $.%.2f as interest on %d/%d/%d", intrst,
add.deposit.month, add.deposit.day, add.deposit.year + 3);
            }
            else if (strcmpi(add.acc_type, "saving") == 0)
            {
               time = (1.0 / 12.0);
               rate = 8;
               intrst = interest(time, add.amt, rate);
               printf("\n\nYou will get $.%.2f as interest on %d of every month", intrst,
add.deposit.day);
            }
            else if (strcmpi(add.acc_type, "current") == 0)
            {

               printf("\n\nYou will get no interest\a\a");
            }
         }
      }
   }
   else if (choice == 2)
   {
      printf("Enter the name:");
      scanf("%s", &check.name);
      while (fscanf(ptr, "%d %s %d/%d/%d %d %s %s %lf %s %f %d/%d/%d",
&add.acc_no, add.name, &add.dob.month, &add.dob.day, &add.dob.year, &add.age,
add.address, add.citizenship, &add.phone, add.acc_type, &add.amt,
&add.deposit.month, &add.deposit.day, &add.deposit.year) != EOF)
      {
         if (strcmpi(add.name, check.name) == 0)
         {
            system("cls");
            test = 1;
            printf("\nAccount No.:%d\nName:%s \nDOB:%d/%d/%d \nAge:%d
\nAddress:%s \nCitizenship No:%s \nPhone number:%.0lf \nType Of Account:%s
\nAmount deposited:$%.2f \nDate Of Deposit:%d/%d/%d\n\n", add.acc_no,
add.name, add.dob.month, add.dob.day, add.dob.year, add.age, add.address,
add.citizenship, add.phone,
               add.acc_type, add.amt, add.deposit.month, add.deposit.day,
add.deposit.year);
            if (strcmpi(add.acc_type, "fixed1") == 0)
            {
```

```c
            time = 1.0;
            rate = 9;
            intrst = interest(time, add.amt, rate);
            printf("\n\nYou will get $.%.2f as interest on %d/%d/%d", intrst,
add.deposit.month, add.deposit.day, add.deposit.year + 1);
        }
        else if (strcmpi(add.acc_type, "fixed2") == 0)
        {
            time = 2.0;
            rate = 11;
            intrst = interest(time, add.amt, rate);
            printf("\n\nYou will get $.%.2f as interest on %d/%d/%d", intrst,
add.deposit.month, add.deposit.day, add.deposit.year + 2);
        }
        else if (strcmpi(add.acc_type, "fixed3") == 0)
        {
            time = 3.0;
            rate = 13;
            intrst = interest(time, add.amt, rate);
            printf("\n\nYou will get $.%.2f as interest on %d/%d/%d", intrst,
add.deposit.month, add.deposit.day, add.deposit.year + 3);
        }
        else if (strcmpi(add.acc_type, "saving") == 0)
        {
            time = (1.0 / 12.0);
            rate = 8;
            intrst = interest(time, add.amt, rate);
            printf("\n\nYou will get $.%.2f as interest on %d of every month", intrst,
add.deposit.day);
        }
        else if (strcmpi(add.acc_type, "current") == 0)
        {

            printf("\n\nYou will get no interest\a\a");
        }
        }
    }
    }

    fclose(ptr);
    if (test != 1)
```

```c
    {
        system("cls");
        printf("\nRecord not found!!\a\a\a");
    see_invalid:
        printf("\nEnter 0 to try again,1 to return to main menu and 2 to exit:");
        scanf("%d", &main_exit);
        system("cls");
        if (main_exit == 1)
            menu();
        else if (main_exit == 2)
            close();
        else if (main_exit == 0)
            see();
        else
        {
            system("cls");
            printf("\nInvalid!\a");
            goto see_invalid;
        }
    }
    else
    {
        printf("\nEnter 1 to go to the main menu and 0 to exit:");
        scanf("%d", &main_exit);
    }
    if (main_exit == 1)
    {
        system("cls");
        menu();
    }

    else
    {

        system("cls");
        close();
    }
}

void close(void)
{
```

```c
    printf("\n\n\n\nThis C Mini Project is developed by Code With C team!");
}

void menu(void)
{
    int choice;
    system("cls");
    system("color 9");
    printf("\n\n\t\t\tCUSTOMER ACCOUNT BANKING MANAGEMENT SYSTEM");
    printf("\n\n\n\t\t\t\xB2\xB2\xB2\xB2\xB2\xB2\xB2 WELCOME TO THE MAIN MENU \xB2\xB2\xB2\xB2\xB2\xB2\xB2");
    printf("\n\n\t\t1.Create new account\n\t\t2.Update information of existing account\n\t\t3.For transactions\n\t\t4.Check the details of existing account\n\t\t5.Removing existing account\n\t\t6.View customer's list\n\t\t7.Exit\n\n\n\n\n\t\t Enter your choice:");
    scanf("%d", &choice);

    system("cls");
    switch (choice)
    {
    case 1:
        new_acc();
        break;
    case 2:
        edit();
        break;
    case 3:
        transact();
        break;
    case 4:
        see();
        break;
    case 5:
        erase();
        break;
    case 6:
        view_list();
        break;
    case 7:
        close();
```

```c
            break;
        }
    }
    int main()
    {
        char pass[10], password[10] = "tutul";
        int i = 0;
        printf("\n\n\t\tEnter the password to login:");
        scanf("%s", pass);

        if (strcmp(pass, password) == 0)
        {
            printf("\n\nPassword Match!\nLOADING");
            for (i = 0; i <= 6; i++)
            {
                fordelay(100000000);
                printf(".");
            }
            system("cls");
            menu();
        }
        else
        {
            printf("\n\nWrong password!!\a\a\a");
        login_try:
            printf("\nEnter 1 to try again and 0 to exit:");
            scanf("%d", &main_exit);
            if (main_exit == 1)
            {

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

            else if (main_exit == 0)
            {
                system("cls");
                close();
            }
            else
            {
```
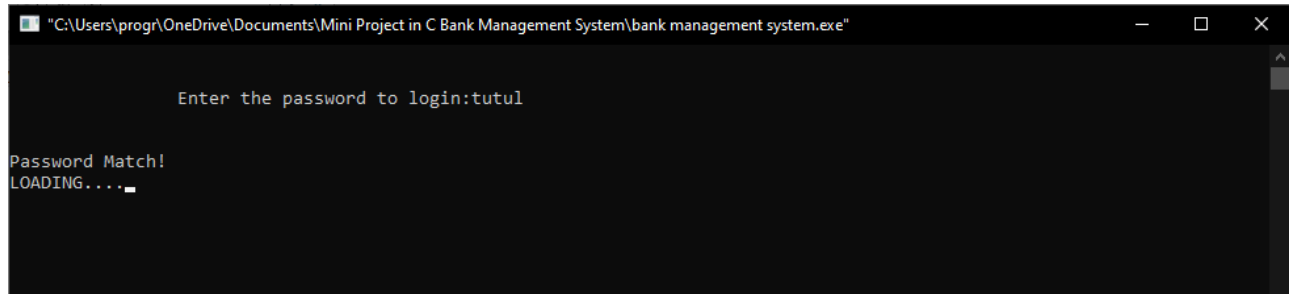
```c
            printf("\nInvalid!");
            fordelay(1000000000);
            system("cls");
            goto login_try;
        }
    }
    return 0;
}
```
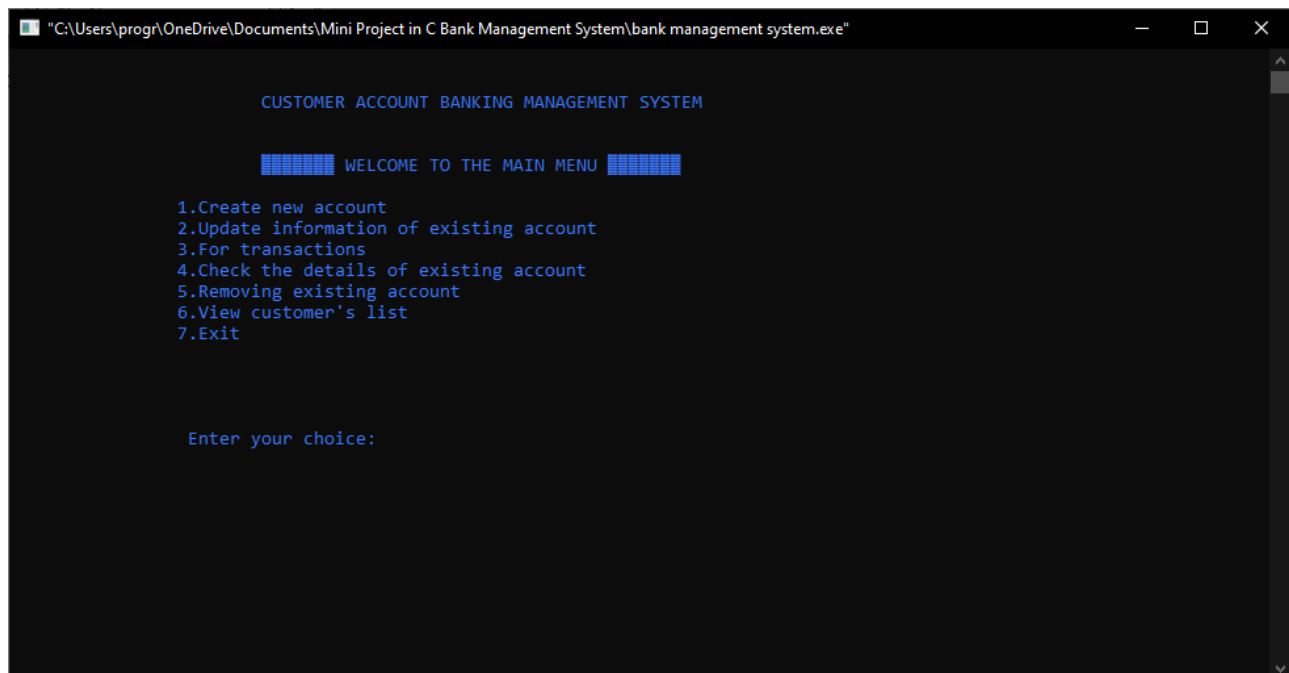
<u>Outputs</u>

<u>Log In:</u>

<u>Menu:</u>

01. Add Account:

```
                    ▓▓▓▓ ADD RECORD  ▓▓▓▓

Enter today's date(mm/dd/yyyy):01/04/2023

Enter the account number:001

Enter the name:Harun

Enter the date of birth(mm/dd/yyyy):03/01/2001

Enter the age:22

Enter the address:Dhaka

Enter the citizenship number:52169845

Enter the phone number: 01722588086

Enter the amount to deposit:$500

Type of account:
        #Saving
        #Current
        #Fixed1(for 1 year)
        #Fixed2(for 2 years)
        #Fixed3(for 3 years)

        Enter your choice:1

Account created successfully!
```

02. Update Info:

```
■ "C:\Users\progr\OneDrive\Documents\Mini Project in C Bank Management System\bank management system.exe"          —    □    ×

Enter the account no. of the customer whose info you want to change:001

Which information do you want to change?
1.Address
2.Phone

Enter your choice(1 for address and 2 for phone):
```

03. Transact:

```
"C:\Users\progr\OneDrive\Documents\Mini Project in C Bank Management System\bank management system.exe"                — □ ✕

Enter the account no. of the customer:001


Do you want to
1.Deposit
2.Withdraw?

Enter your choice(1 for deposit and 2 for withdraw):
```

04. Search User:

```
"C:\Users\progr\OneDrive\Documents\Mini Project in C Bank Management System\bank management system.exe"                — □ ✕

Do you want to check by
1.Account no
2.Name
Enter your choice:2
```

```
"C:\Users\progr\OneDrive\Documents\Mini Project in C Bank Management System\bank management system.exe"                — □ ✕


Account No.:1
Name:Harun
DOB:3/1/2001
Age:22
Address:jmm
Citizenship No:52169845
Phone number:1722588086
Type Of Account:1
Amount deposited:$600.00
Date Of Deposit:1/4/2023


Enter 1 to go to the main menu and 0 to exit:
```

05. Delete User:

```
"C:\Users\progr\OneDrive\Documents\Mini Project in C Bank Management System\bank management system.exe"                — □ ✕

Enter the account no. of the customer you want to delete:001

Record deleted successfully!

Enter 1 to go to the main menu and 0 to exit:
```

06. View Userlist:

```
"C:\Users\progr\OneDrive\Documents\Mini Project in C Bank Management System\bank management system.exe"

ACC. NO.        NAME                    ADDRESS             PHONE

    1       Harun                       Dhaka               1845216
Enter 1 to go to the main menu and 0 to exit:
```

07. Exit:

```
        7.Exit
```