Jawaharlal Nehru University, New Delhi

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Mini-Project

NAME - ADITYA KUMAR

Enrollment No-22/10/JC/08

Class- MCA(I)

Subject-C Language

Submitted To:-Dr. Piyush Pratap Singh

ATM Machine Simulation

Making of Program

THIS PROGRAM CONSISTS ON THE SYSTEM MANAGEMENT OF ATM AND ITS FUNCTIONS. ATM MACHINES BASED ON STRUCTURE ,FUNCTIONS , LOOPS AND SWITCH CASES . AND BASED ON C-LANGUAGE.

Loops:

In computer programming, a loop is a sequence of instructions that is continually repeated until a certain condition is reached.

USAGE OF LOOP:-

We used the WHILE loop in the program for continuity of the program.
ATM machines need to work
Regularly.

IF-ELSE CONDITION:-

Then we used the if else condition to show the users. We added a pin code option for every user login if the pin code is wrong then the program will give a massage that you have entered an invalid pin. Try with another pin. Users have their own pins from which they will able to withdraw or deposit from their account.

SWITCH CASE:-

IN computer programming language , a switch statement is a type of selection control mechanism used to allow the value of a variable or expression to change the control flow of program execution via a multiple branch

USAGE OF SWITCH CASE:-

I used switch case to make categories of different users and their accounts.
From which they can check their balance, deposit or withdraw their money and also to change their pin codes.

STRUCTURES:-

Structures (also called structs) are **a way to group several related variables into one place**. Each variable in the structure is known as a member of the structure. Unlike an array, a structure can contain many different data types (int, float, char, etc.)

USAGE OF STRUCTURES:-

I uses structure to seed the customers details as we will have to first takes the customers details from bank then after perform rest of the activities on their database through ATM.
So I have used arrays of structure to stores users details like their name, account number, atm card, mobile number, and to set their pins.

Abstract:-

The ATM System is the project which is used to access their bank accounts in order to make cash withdrawals. Whenever the user need to make cash withdraws, they can enter PIN number , Once their withdrawn was successful, the amount will be debited in their account.

The ATM will service one customer at a time . A customer will be required to enter ATM personal identification numbers. Then customer will than be able to perform one or more transactions. Also customer must be able to make a balance inquiry.

USER DEFINED FUNCTION:

Functions:-

```
//Functions
void login();
void checkBalance(struct Customer cust);
float moneyDeposit(struct Customer cust);
float moneyWithdraw(struct Customer cust);
void menuExit(struct Customer cust);
int changepin(struct Customer cust);
void errorMessage();
```

CODE:-

[*] c-project-aditya.c

```c
#include <stdio.h>
#include <stdlib.h>
#include <stdbool.h>
#include <math.h>
#include <time.h>
#include <string.h>

struct Customer
{
    char name[10];
    long int bank_ac;
    long int ATM_card;
    long mob_num;
    int pin;
    double debit;
    double credit;
    double balance;
}cust[10];
//Functions
void login();
void checkBalance(struct Customer cust);
float moneyDeposit(struct Customer cust);
float moneyWithdraw(struct Customer cust);
void menuExit(struct Customer cust);
int changepin(struct Customer cust);
void errorMessage();
```

```
void errormessage();

    int option;
    int n, i,choose;
    bool again = true;
    long int ATM_CARD,ATM_PIN;

int main()
{


   time_t tm;
   time(&tm);

    printf("enter the number of customer:- ");
    scanf("%d",&n);
    printf("Seed the customer's details:\n");
    for(i=1;i<=n;i++)
    {
        printf("customer %d detail's:-\n",i);
        printf("Name:- ");
        scanf("%s",&cust[i].name);
        printf("\nBank_account:- ");
        scanf("%ld",&cust[i].bank_ac);
        printf("\nATM CARD NO:- ");
        scanf("%ld",&cust[i].ATM_card);
        printf("\nMobile.Num:- ");
        scanf("%ld",&cust[i].mob_num);
        printf("\n Deposit Balance:- ");
        scanf("%lf",&cust[i].balance);
        printf("\n Set four digit Pin:- ");
```

```
57          scanf("%d",&cust[i].pin);
58      }
59
60      printf("Customer details:-\n");
61      printf("_____\n");
62      printf("\nS.No\tName\tBank Account\tATM_CARD\tMobile Num\tBalance\tPin\n");
63      printf("_____\n");
64      for(i=1;i<=n;i++)
65      {
66          printf("\n%d).\t%s\t%ld\t%ld\t%ld\t%lf\t%d\n",i,cust[i].name,cust[i].bank_ac,cust[i].ATM_card,
67      }
68      printf("_____\n");
69
70      printf("_____Hello Dear!_____\n");
71      printf("_____Welcome to ATM Banking_____\n\n");
72        printf("_____insert your ATM CARD_____\n");
73        scanf("%ld",&ATM_CARD);
74        printf("_____card Detected_____\n");
75        printf("\nplease Enter your 4 digit pin:\n");
76       while(1)
77       {
78        scanf("%ld",&ATM_PIN);
79        for(i=1;i<=n;i++)
80        {
81          if(ATM_CARD==cust[i].ATM_card)
82            if(ATM_PIN==cust[i].pin)
83
84          {
85            while (again)
86            {
87             printf("welcome %s!!!!\n",cust[i].name);
88             printf("****Please choose one of the options below****\n\n");
89             printf("< 1 >  Check Balance\n");
```

[*] c-project-aditya.c

```
96          printf("Your Selection:\t");
97          scanf("%d", &option);
98        switch (option)
99        {
100           case 1:
101             checkBalance(cust[i]);
102             break;
103           case 2:
104            cust[i].balance = moneyDeposit(cust[i]);
105             break;
106           case 3:
107            cust[i].balance = moneyWithdraw(cust[i]);
108             break;
109           case 4:
110            cust[i].pin = changepin(cust[i]);
111             break;
112
113           case 5:
114             menuExit(cust[i]);
115             return 0;
116
117           default:
118              errorMessage();
119              break;
120       }
121
122       printf("_____\n");
123       printf("Would you like to do another transaction:\n");
124       printf("< 1 > Yes\n");
125       printf("< 2 > No\n");
126       scanf("%d", &choose);
```

```
126                 scanf("%d", &choose);
127
128                 if (choose == 2)
129                 {
130                   again = false;
131                   menuExit(cust[i]);
132                 }
133               }
134             }
135             else
136               printf("oops!! pin invalid.please enter correct pin\n");
137           }
138
139         }
140
141     return 0;
142 }
143
144 //Functions
145
146 //Main Menu
147
148 void checkBalance(struct Customer cust) {
149     printf("You Choose to See your Balance\n");
150     printf("\n\n****Your Available Balance is:   ₹%.2f\n\n",cust.balance);
151
152 }//Check Balance
153
154 float moneyDeposit(struct Customer cust) {
155     float deposit;
156     printf("You choose to Deposit a money\n");
157     printf("Your Balance is: ₹%.2f\n\n",cust.balance);
158     printf("****Enter your amount to Deposit\n");
```

```
159     scanf("%f", &deposit);
160
161
162    cust.balance += deposit;
163    cust.credit+=deposit;
164
165
166     printf("\nYour New Balance is:   ₹%.2f\n\n", cust.balance);
167     return cust.balance;
168
169 }//money deposit
170
171  float moneyWithdraw(struct Customer cust) {
172     float withdraw;
173     bool back = true;
174
175     printf("You choose to Withdraw a money\n");
176     printf("Your Balance is: ₹%.2f\n\n",cust.balance);
177
178     while (back) {
179     printf("Enter your amount to withdraw:\n");
180     scanf("%f", &withdraw);
181
182
183     if (withdraw < cust.balance) {
184         back = false;
185        cust.balance -= withdraw;
186         cust.debit+=withdraw;
187         printf("\nYour withdrawing money is:  ₹%.2f\n", withdraw);
188         printf("Your New Balance is:   ₹%.2f\n\n",cust.balance);
189
190     }
191
```

```
192         else  {
193
194         printf("oops!!!You don't have enough money\n");
195         printf("Please contact to your Bank Customer Services\n");
196         printf("Your Balance is:   ₹%.2f\n\n",cust.balance);
197
198     }
199     }
200     return cust.balance;
201
202
203 }//money withdraw
204
205 int changepin(struct Customer cust){
206     int oldpin,newpin;
207     printf("please enter your old pin:-");
208     while(1)
209     {
210     scanf("%d",&oldpin);
211     if(cust.pin==oldpin)
212     {
213         printf("\nEnter your new four digit pin:-");
214         scanf("%d",&newpin);
215         cust.pin=newpin;
216         printf("\ncongo!! your pin has been change succesfully!");
217         break;
218     }else
219     {
220         printf("\nsorry! its invalid pin. Try with another pin!");
221     }
222 }
223 return cust.pin;
```

```
218     }else
219     {
220         printf("\nsorry! its invalid pin. Try with another pin!");
221     }
222 }
223 return cust.pin;
224 
225 }
226 
227 void menuExit(struct Customer cust) {
228     time_t tm;
229     time(&tm);
230     printf("--------------Take your receipt!!!------------------\n");
231     printf("---------------------Receipt-------------------------\n");
232     printf("%s",ctime(&tm));
233     printf("_____________________________________________________\n");
234     printf("Transaction details:-\n");
235     printf("Dear %s!!!!\n",cust.name);
236     printf("BANK ACCOUNT:-%ld\n",cust.bank_ac);
237     printf("MOBILE NUMBER:-%ld\n",cust.mob_num);
238     printf("AMOUNT CREDITTED:-%.2f\n",cust.credit);
239     printf("AMOUNT DEBITTED:- %.2f\n",cust.debit);
240     printf("CURRENT BALANCE:-₹%.2f\n",cust.balance);
241     printf("Thank you for using ATM Banking Machine!!!-----\n");
242     printf("_____________________________________________________\n");
243 
244 
245 }
246 
247 void errorMessage() {;
248     printf("!!!You selected invalid number!!!\n");
```

summary

Problem Description:-
This C Program performs ATM transaction. The types of ATM transaction are
1) Balance checking
2) Cash withdrawal
3) Cash deposition.
4) Pin change
5) Exit
Problem Solution:-
1. Firstly initialize the ATM pin and amount with some random number.
2. Take the ATM pin as input.
3. If the input pin is equal to the initialized pin, then do the further operations.
4. Use switch statement to do the operations like Balance checking, Cash withdrawal, Cash deposition etc.
5. Use while loop to terminate or restart the process.

thank you

ADITYA KUMAR

Kaditya125.ak@gmail.com