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Group Project Report

## **Coin Management System**

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# Coin Management System

## Project Overview

The Coin Management System is a console-based application developed in C that allows users to register, log in, and browse coins from various countries, including Bangladesh, India, Pakistan, and Turkey. The system displays coin images and descriptions, using a menu-driven interface and file handling for user authentication. It demonstrates basic concepts of structures, file I/O, string handling, and interactive console programming.

## Objectives

1. Implement user authentication using file handling.
2. Develop a menu-driven system to navigate through countries and coins.
3. Display coin information, including images and descriptions.
4. Provide a simple, interactive console-based management system for educational purposes.

## System Features

1. **User Registration:** Users can create accounts by entering their first name, last name, username, and password.
2. **User Login:** Validates credentials stored in a text file.
3. **Country Menu:** Users select a country (Bangladesh, India, Pakistan, Turkey).
4. **Coin Menu:** For each country, users can choose coin denominations (1, 2, 5).
5. **Coin Details:** Each coin can display an image or a description.
6. **Splash Screen:** Decorative ASCII banner shown at each menu.

## System Flow

1. The user opens the system and chooses either Sign Up or Sign In.
2. For Sign Up: User registration is done, and data is saved to login.txt.
3. For Sign In: Credentials are validated; if correct, the main menu is displayed.
4. User selects a country → selects a coin → chooses to view an image or description.
5. The user can return to the main menu or exit the system at any time.

# File Structure

project/

```
|
|— main.c      // Main program with login and registration
|— menu.c      // Menu-driven code for countries and coins
|— splash.c    // Splash screen ASCII art
|— splash.h    // Header for splash function
|— menu.h      // Header for menu function
|— login.txt   // File storing user credentials
|— images/     // Folder containing coin images
|   |— one.jpg
|   |— two.jpg
|   |— five.jpg
|   |— oneru.jpg
|   |— tworu.jpg
|   |— 5ru.jpg
|   |— p1.jpg
|   |— p2.jpg
|   |— p5.jpg
|   |— 1lira.jpg
|   |— 2lira.jpg
|   |— 5lira.jpg
```

## Important Code Modules

1. **Registration Module:** Saves user data using structures and `fwrite()` in `login.txt`.
2. **Login Module:** Reads user data using `fread()` and compares credentials using `strcmp()`.
3. **Menu Module:** Displays countries, coin options, and handles user navigation with loops and switch-case statements.
4. **Coin Display Module:** Opens coin images with the `system("start images\\file.jpg")` or prints descriptions.
5. **Splash Screen Module:** Prints ASCII art header for consistent interface design.

## Limitations

1. Passwords are stored in plain text, making the system vulnerable to security breaches.
2. Only one user is supported at a time due to the file overwrite mode.
3. The recursive login function may cause a stack overflow on repeated failed logins.
4. Uses Windows-specific commands (`system("CLS")`, `start`), making it non-portable.

## Recommendations for Improvement

1. Encrypt passwords before saving to a file for security.
2. Use append mode ("a") in registration to allow multiple users.
3. Replace recursion in login with a loop to prevent stack overflow.
4. Refactor repeated code in menu options into separate functions.
5. Make the system cross-platform by avoiding commands that are specific to Windows.

## Code

## Splash.h

```
main.c splashn.x menu.n
C splash.h > ... You, 7 days ago | 1 author (You)
1 #include <stdio.h>
2
3 void splash()
4 {
5     printf(" #####          # #                               ##### \n");
6     printf("#   #### # # #   ## ## ## # # ## #####           # # # #   #### ##### # \n");
7     printf("#   # # # # #   # # # # # # # # # # # # # # # # # # # # # # # # # # # \n");
8     printf("#   # # # # #   # # # # # # # # # # # # # # # # # # # # # # # # # # # \n");
9     printf("#   # # # # #   # # # # # # # # # # # # # # # # # # # # # # # # # # # \n");
10    printf("#   # # # # #   # # # # # # # # # # # # # # # # # # # # # # # # # # # \n");
11    printf("##### # # # #   # # # # # # # # # # # # # # # # # # # # # # # # # \n");
12 }
13
```

## Menu.h

```
#include <stdio.h>
#include <stdlib.h>
#include <conio.h>
```

```
void menu()
{
```

```
system("CLS");
int choice=0;
splash();
puts("\n\nLogin Successful\n");
puts("\nWelcome to The management System\n");
while(choice !=5)
{
    puts("\nChoose Country\n");
    puts("1.Bangladesh\n");
    puts("2.India\n");
    puts("3.Pakistan\n");
    puts("4.Turkey\n");
    puts("5.Exit\n");
    printf("\nEnter Your Choice:");
    scanf("%d",&choice);
    switch(choice)
    {
        case 1:
            {
                system("CLS");
                splash();
                puts("\nBangladeshi all coin list\n");
                int sub1=0;
                while(sub1!=4)
                {
                    puts("\nChoose one.....\n");
                    puts("\n1.One Taka");
                    puts("\n2.Two Taka");
                    puts("\n3.Five Taka");
                    puts("\n4.Main Menu");
                    printf("\nEnter which coin you want to see:");
                    scanf("%d",&sub1);
                    if(sub1==1)
                    {
                        system("CLS");
                        splash();
                        int bd;
```

```

puts("\n                                1.For Coin Image");
puts("\n                                2.Description");
printf("\n                                Your choice is:");
scanf("%d",&bd);
if(bd==1)
{ system("CLS");
splash();
system("start images\\one.jpg");}

else if(bd==2)
{ system("CLS");
splash();
puts("\n                                Description");
puts("\n                                Made with silver.");
puts("\n                                The logo of father of the nation.");
}
}
else if(sub1==2)
{ system("CLS");
splash();
int bd;
puts("\n                                1.For Coin Image");
puts("\n                                2.Description");
printf("\n                                Your choice:");
scanf("%d",&bd);
if(bd==1)
{ system("CLS");
splash();
system("start images\\two.jpg");}

else if(bd==2)

{ system("CLS");
splash();
puts("\n                                Description\n");
puts("\n                                Made with silver.");
puts("\n                                The logo of father of the nation.");
}
}

```

```

    }
    else if(sub1==3)
    { system("CLS");
      splash();
      int bd;

      puts("\n          1.For Coin Image");
      puts("\n          2.Description");
      printf("\n          Your choice:");
      scanf("%d",&bd);
      if(bd==1)
      { system("CLS");
        splash();
        system("start images\\five.jpg");}

      else if(bd==2)
      { system("CLS");
        splash();
        puts("\n          Description\n");
        puts("\n          Made with silver.");
        puts("\n          The logo of Jamuna Bridge.");
        }

    }
    else if(sub1==4)
    {
      system("CLS");
      splash();
      menu();
    }

  }
}
break;
case 2:
{ system("CLS");
  splash();
  puts("\n          Indian all coin list\n");
  int sub2=0;
  while(sub2!=4)

```



```

{
    puts("\n                Choose one.....\n");
    puts("\n                1.One Rupee");
    puts("\n                2.Two Rupee");
    puts("\n                3.Five Rupee");
    puts("\n                4.Main Menu");
    printf("\n                Enter which coin u want to see >>");
    scanf("%d",&sub2);
    if(sub2==1)
    { system("CLS");
      splash();
      int in;
      puts("\n                1.For Coin Image");
      puts("\n                2.Description");
      printf("\n                Your choice:");
      scanf("%d",&in);
      if(in==1)
      { system("CLS");
        splash();
        system("start images\\oneru.jpg");}

      else if(in==2)
      { system("CLS");
        splash();
        puts("\n                Description\n");
        puts("\n                Made with silver.");
        puts("\n                The Logo of Paddy.");
      }
    }
    else if(sub2==2)
    { system("CLS");
      splash();
      int in;
      puts("\n                1.For Coin Image");
      puts("\n                2.Description");
      printf("\n                Your choice:");
      scanf("%d",&in);
      if(in==1)
      { system("CLS");

```

```

    splash();
    system("start images\\tworu.jpg");}

    else if(in==2)
    { system("CLS");
    splash();
    puts("\n                Description\n");
    puts("\n                Made with silver.");
    puts("\n                The Logo of government of India.");}
}
else if(sub2==3)
{ system("CLS");
splash();
int in;
puts("\n                1.For Coin Image");
puts("\n                2.Description");
printf("\n                Your choice:");
scanf("%d",&in);
if(in==1)
{ system("CLS");
splash();
system("start images\\5ru.jpg");}
else if(in==2)
    { system("CLS");
    splash();
    puts("\n                Description\n");
    puts("\n                Made with silver.");
    puts("\n                Coin Color Gold. The Logo of government of India.");}
}
else if(sub2==4)
{
    system("CLS");
    splash();
    menu();
}
}
}
break;
case 3:

```

```

{ system("CLS");
splash();
puts("\n                                Pakistani all coin list\n");
int sub3=0;
while(sub3!=4)
{
    puts("\n                                Choose one.....\n");
    puts("\n                                1.One Rupee");
    puts("\n                                2.Two Rupee");
    puts("\n                                3.Five Rupee");
    puts("\n                                4.Main Menu");
    printf("\n                                Enter which coin u want to see:");
    scanf("%d",&sub3);
    if(sub3==1)
    { system("CLS");
      splash();
      int pk;
      puts("\n                                1.For Coin Image");
      puts("\n                                2.Description");
      printf("\n                                Your choice:");
      scanf("%d",&pk);
      if(pk==1)
      { system("CLS");
        splash();
        system("start images\\p1.jpg");}

      else if(pk==2)
      { system("CLS");
        splash();
        puts("\n                                Description\n");
        puts("\n                                Made with silver.");
        puts("\n                                The Logo of moon and star.");}
    }
    else if(sub3==2)
    { system("CLS");
      splash();
      int pk;
      puts("\n                                1.For Coin Image");
      puts("\n                                2.Description");

```

```

    printf("\n                Your choice:");
    scanf("%d",&pk);
    if(pk==1)
{ system("CLS");
splash();
system("start images\\p2.jpg");}

else if(pk==2)
    { system("CLS");
    splash();
    puts("\n                Description\n");
    puts("\n                Made with silver.");
    puts("\n                The Logo of Mosque.");}
}
else if(sub3==3)
    { system("CLS");
    splash();
    int pk;
    puts("\n                1.For Coin Image");
    puts("\n                2.Description");
    printf("\n                Your choice:");
    scanf("%d",&pk);
    if(pk==1)
{ system("CLS");
splash();
system("start images\\p5.jpg");}
else if(pk==2)
    { system("CLS");
    splash();
    puts("\n                Description\n");
    puts("\n                Made with silver.");
    puts("\n                The Logo of moon and star.");}
}
else if(sub3==4)
{
    system("CLS");
    splash();
    menu();
}

```

```

}
}
break;
case 4:
{
system("CLS");
splash();
puts("\n                Turkish all coin list\n");
int sub4=0;
while(sub4!=4)
{

puts("\n                Choose one.....\n");
puts("\n                1.One Lira");
puts("\n                2.Two Lira");
puts("\n                3.Five Lira");
puts("\n                4.Main Menu");
printf("\n                Enter which coin u want to see:");
scanf("%d",&sub4);
if(sub4==1)
{ system("CLS");
splash();
int tk;
puts("\n                1.For Coin Image");
puts("\n                2.Description");
printf("\n                Your choice:");
scanf("%d",&tk);
if(tk==1)
{ system("CLS");
splash();
system("start images\\1lira.jpg");}

else if(tk==2)
{ system("CLS");
splash();

puts("\n                Description\n");
puts("\n                Made with silver.");
puts("\n                The Logo of Hagia Sophia.");

```

```

    }
}
else if(sub4==2)
{ system("CLS");
  splash();
  int tk;
  puts("\n          1.For Coin Image");
  puts("\n          2.Description");
  printf("\n          Your choice:");
  scanf("%d",&tk);
  if(tk==1)
{ system("CLS");
  splash();
  system("start images\\2lira.jpg");}

  else if(tk==2)
  { system("CLS");
    splash();
    puts("\n          Description\n");
    puts("\n          Made with silver.");
    puts("\n          The Logo of a farmer.");}
}
else if(sub4==3)
{ system("CLS");
  splash();
  int tk;
  puts("\n          1.For Coin Image");
  puts("\n          2.Description");
  printf("\n          Your choice:");
  scanf("%d",&tk);
  if(tk==1)
{ system("CLS");
  splash();
  system("start images\\5lira.jpg");}
  else if(tk==2)
  { system("CLS");
    splash();
    puts("\n          Description\n");
    puts("\n          Made with silver.");

```

```

        puts("\n                The Logo of a horse man.");}
    }
    else if(sub4==4)
    {
        system("CLS");
        splash();
        menu();
    }
}
}
break;
case 5:
    { system("CLS");
      splash();
      printf("\n                You Exited the program.\n\n");
      return;
    }
}
}
}

```

## Main.h

```

#include <stdio.h>
#include<string.h>
#include <stdlib.h>
#include <conio.h>
#include "splash.h"
#include "menu.h"

```

```

void login();
void regis();

```

```

struct login{
char fname[100];
char lname[100];
char username[100];

```

```
char password[100];  
};  
  
int main()  
{  
    int cho;  
    puts("\n\n\n\n\t\t\tWelcome to Coin Management System\n");  
    puts("\n\t\t\tPlease Follow the security Steps\n");  
    printf("1.Sign Up\n");  
    printf("2.Sign In\n\n");  
  
    puts("Press the number & Enter\n");  
    printf(">>>>\n");  
  
    scanf("%d",&cho);  
    if(cho==1)  
    {  
        system("CLS");  
        regis();  
    }  
    else if(cho==2)  
    {  
        system("CLS");  
        login();  
    }  
}  
  
void login()  
{  
    char username[200], password[100];  
    FILE *log;  
    struct login l;  
    int found = 0;  
  
    puts("Sign In\n");  
    printf("Enter Username:");  
    scanf("%199s", username);  
    printf("Enter Password:");
```



```

scanf("%99s", password);

log = fopen("login.txt", "rb");
if (log == NULL) {
    printf("\n                No users registered yet. Please sign up first.\n");
    getch();
    system("CLS");
    regis();
    return;
}

while (fread(&l, sizeof(l), 1, log) == 1) {
    if (strcmp(username, l.username) == 0 && strcmp(password, l.password) == 0) {
        found = 1;
        break;
    }
}

fclose(log);

if (found) {
    printf("                Login Successful\n\n");
    menu();
} else {
    printf("                Incorrect username or password.\n");
    getch();
    system("CLS");
    login();
}

}

void regis()
{
    FILE *log;
    struct login l;

    puts("                Coin Management Security system Registration\n\n");
    printf("                Enter first name:");

```

```

scanf("%99s", l.fname);
printf("                                Enter last name:");
scanf("%99s", l.lname);
printf("                                Enter Username:");
scanf("%99s", l.username);
printf("                                Enter Password:");
scanf("%99s", l.password);

log = fopen("login.txt", "ab");

fwrite(&l, sizeof(l), 1, log);
fclose(log);
printf("\n                                Please Remember your user name & password!!!\n\n");
printf("                                PRESS ANY KEY TO CONTINUE");
getch();
system("CLS");
login();
}

```

## Testing

```

Welcome to Coin Management System

Please Follow the security Steps

1.Sign Up
2.Sign In

Press the number & Enter

>>>>

```

## Coin Management Security system Registration

Enter first name:tasmiad

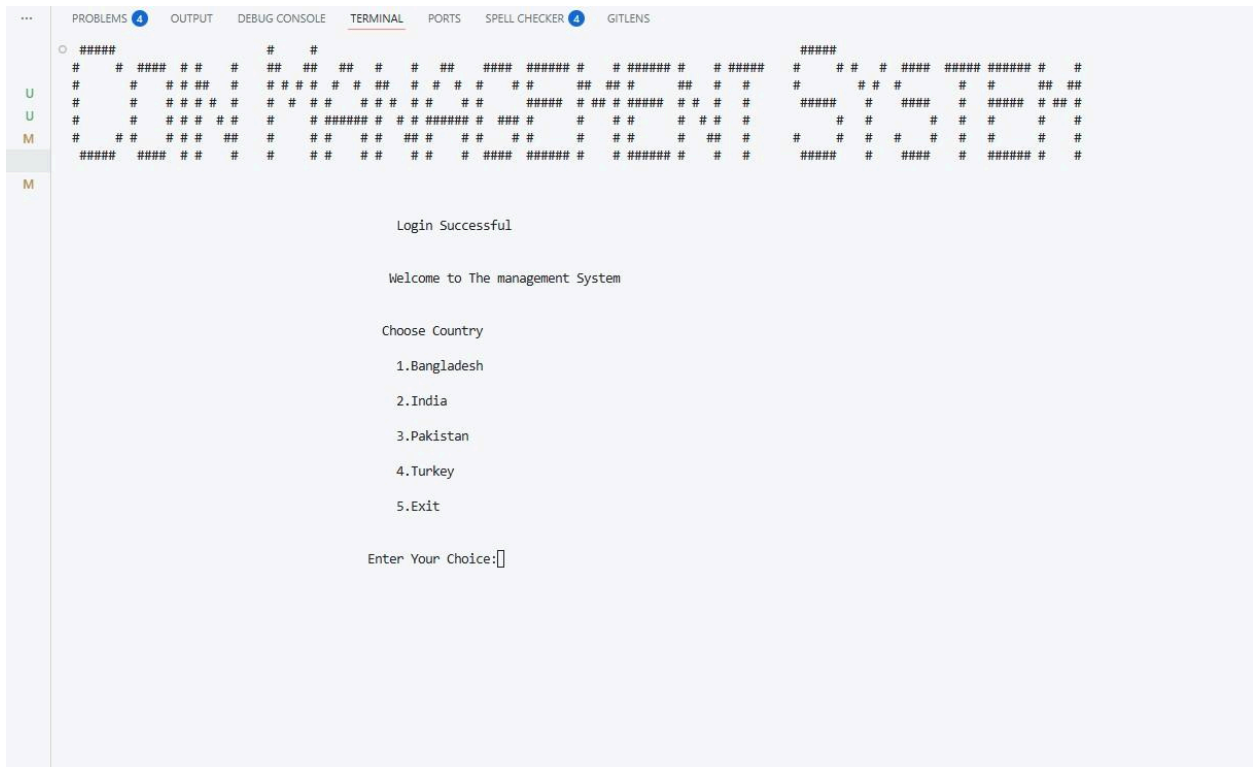
Enter last name:hasan

Enter Username:tasm

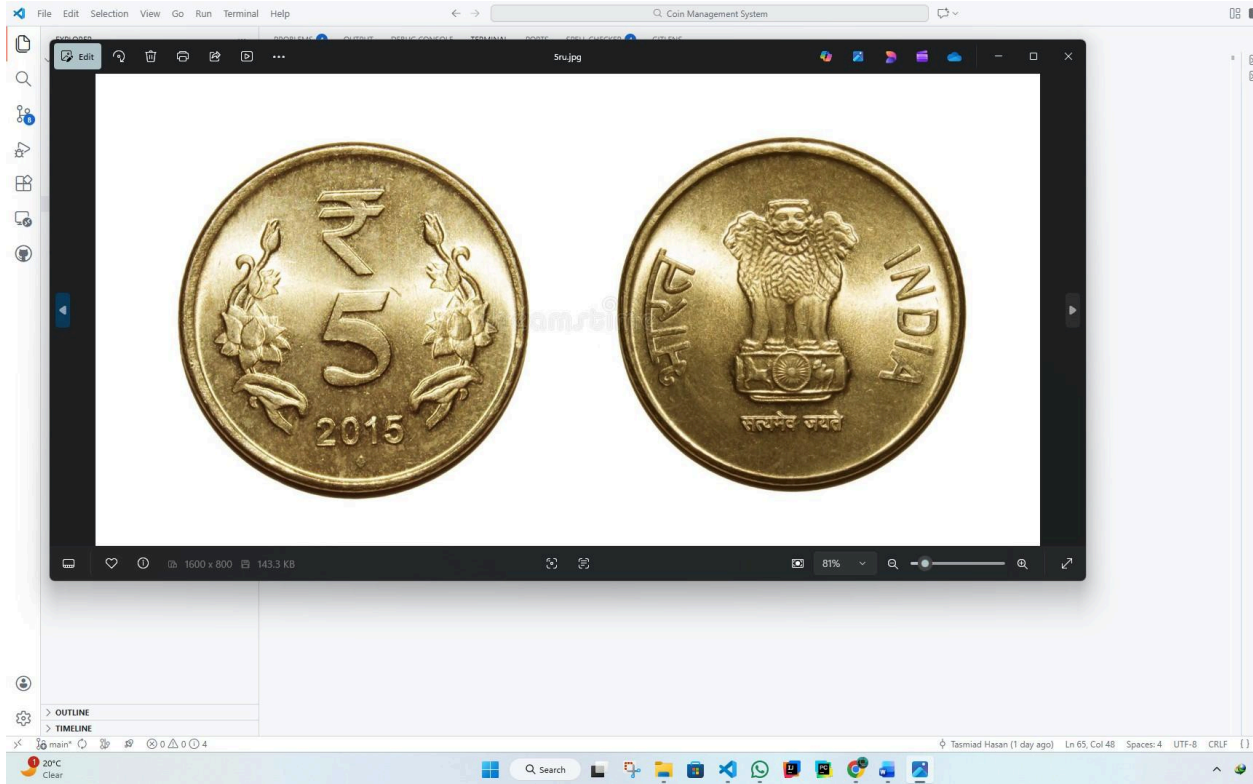
Enter Password:1234

Please Remember your user name & password!!!

PRESS ANY KEY TO CONTINUE







## Conclusion

The Coin Management System effectively demonstrates file handling, structures, menu-driven programming, and basic authentication in C. Users can register, log in, and view coin images and descriptions in a simple console interface. Despite some limitations, the project is educational, easy to understand, and can be further enhanced to include multiple users, secure authentication, and cross-platform functionality. It serves as a practical example of how console applications can be structured to manage real-world data.