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Group Project Report

Coin Management System

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Table of Contents

Project Overview.....	3
Objectives.....	3
System Features.....	3
System Flow.....	3
File Structure.....	4
Important Code Modules.....	4
Limitations.....	5
Recommendations for Improvement.....	5
Code.....	5
Testing.....	18
Conclusion.....	21

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/
        └── 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

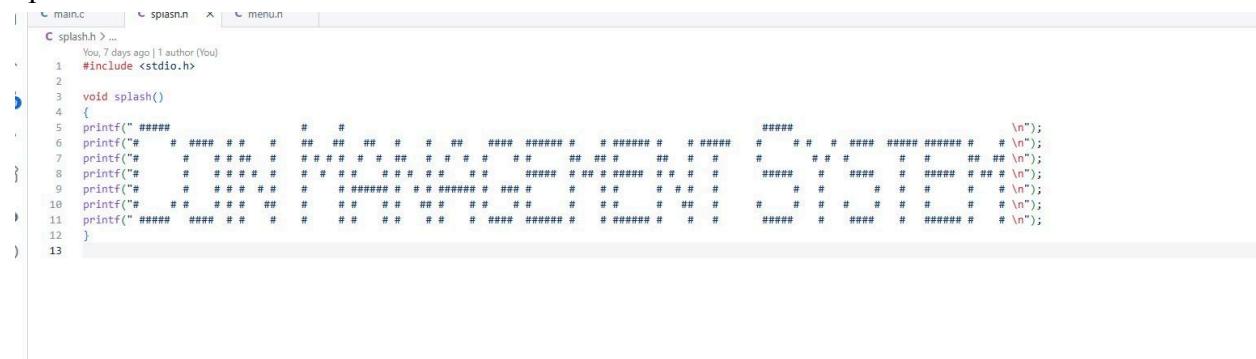
1. Passwords are stored in plain text, making the system vulnerable to security breaches.
2. Only one user is supported at a time due to the file overwrite mode.
3. The recursive login function may cause a stack overflow on repeated failed logins.
4. Uses Windows-specific commands (system("CLS"), start),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



```
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\n\n");
Login Successful\n);
puts("\n");
Welcome to The management System\n);

while(choice !=5)
{
    puts("\n");
    Choose Country\n);
    puts("1.Bangladesh\n");
    puts("2.India\n");
    puts("3.Pakistan\n");
    puts("4.Turkey\n");
    puts("5.Exit\n");
    Enter Your Choice:");

    printf("\n");
    scanf("%d",&choice);
    switch(choice)
    {
        case 1:
            {
                system("CLS");
                splash();
                puts("\n");
                Bangladeshi all coin list\n);
                int sub1=0;
                while(sub1!=4)
                {
                    puts("\n");
                    Choose one.....\n);
                    puts("1.One Taka");
                    puts("2.Two Taka");
                    puts("3.Five Taka");
                    puts("4.Main Menu");
                    printf("\n");
                    Enter 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\ltworu.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
puts("\n
printf("\n
scanf("%d",&tk);
if(tk==1)
{ system("CLS");
splash();
system("start images\\2lira.jpg");}

else if(tk==2)
{ system("CLS");
splash();
puts("\n
puts("\n
Description\n");
Made with silver.");
The Logo of a farmer.");}

else if(sub4==3)
{ system("CLS");
splash();
int tk;
puts("\n
puts("\n
printf("\n
scanf("%d",&tk);
if(tk==1)
{ system("CLS");
splash();
system("start images\\5lira.jpg");}
else if(tk==2)
{ system("CLS");
splash();
puts("\n
puts("\n
Description\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");
    puts("\n");
    printf("Welcome to Coin Management System\n");
    printf("Please Follow the security Steps\n");
    printf("1.Sign Up\n");
    printf("2.Sign In\n\n");

    puts("Press the number & Enter\n");
    printf(">>>>");

    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:");
}

```

```

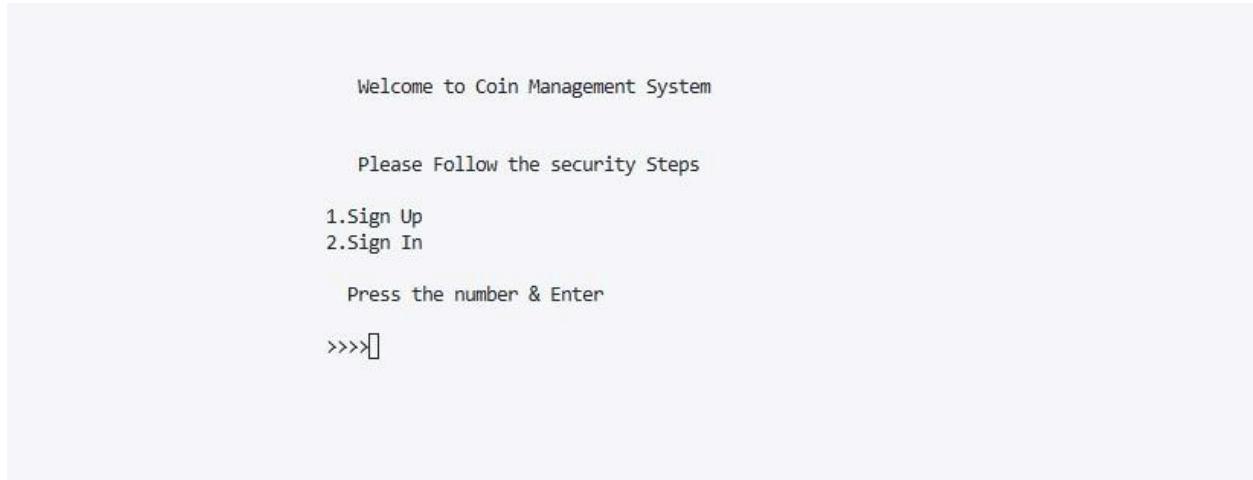
scanf("%99s", l.fname);
printf("Enter last name:");
scanf("%99s", l.lname);
printf("Enter Username:");
scanf("%99s", l.username);
printf("Enter Password:");
scanf("%99s", l.password);

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

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

```

Testing

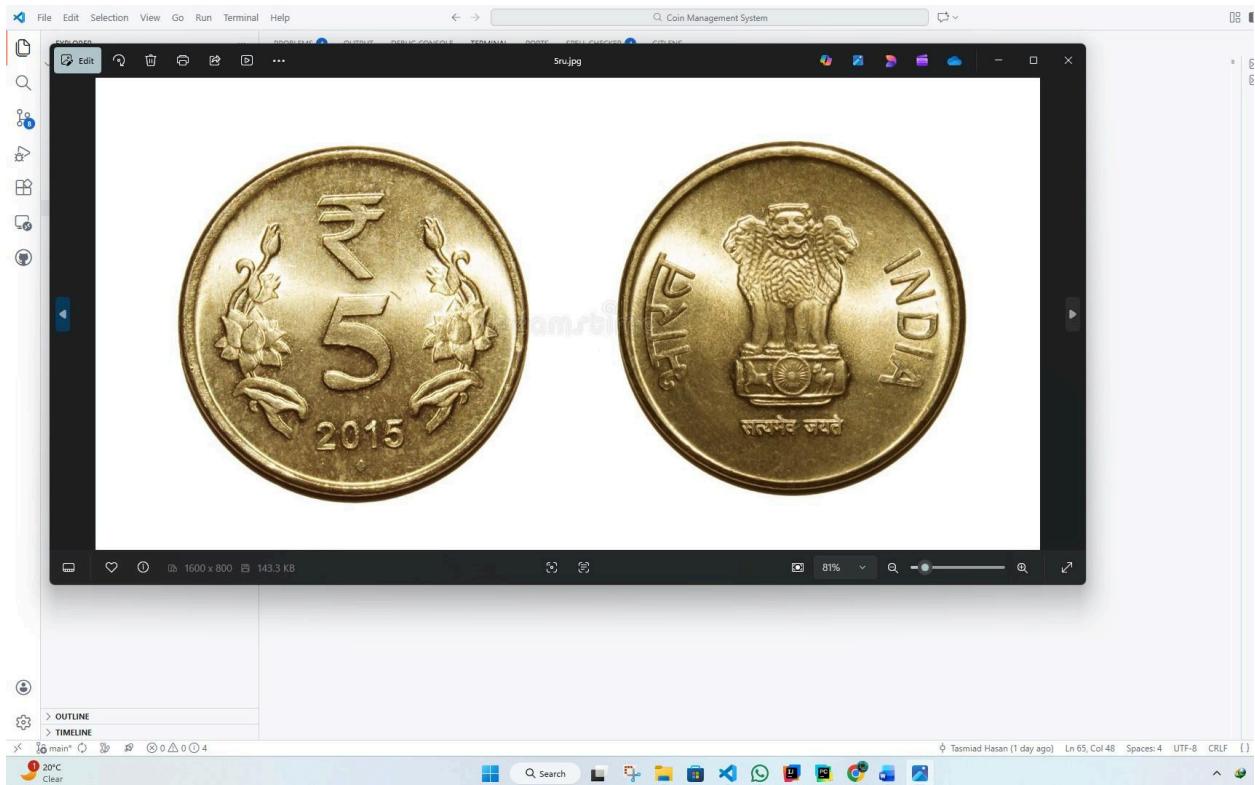


Coin Management Security system Registration

```
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.