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**Personal Diary Application Using C**

**PROJECT REPORT**

Submitted by

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**Abstract**

The "Personal Diary Application" project aims to create a user-friendly application for managing personal diaries. The primary objectives include providing users with an intuitive interface to create, update, rewrite, delete, and view diary entries. The project utilizes C programming to implement these functionalities while maintaining a structured and organized approach.

**Methodology:**

The project follows a systematic approach, starting with requirements analysis and design. The implementation phase utilizes C programming to create a class-like structure for managing diary entries. The application incorporates features for user input, diary content manipulation, and administrative controls.

**Key Outcomes:**

1. Create New Diary Entry:

Users can create new diary entries by providing a title and entering the desired content.

2. Update Existing Diary Entry:

Users can update the content of an existing diary entry.

3. Rewrite Diary Entry:

Users have the option to rewrite the entire content of a diary entry, providing a fresh start.

4.Delete Diary Entry:

Users can delete a diary entry, removing it from the system.

5. View Diary Entry:

Users can view the content of a diary entry.

6. Display Available Diaries:

The system provides a list of available diaries for users to choose from.

This project serves as an educational resource for understanding fundamental programming concepts, file handling, and basic program design. It provides a better experience for learners to apply these concepts in a real-world scenario, enhancing their programming skills.

**Acknowledgment**

I would like to express my sincere gratitude to the following individuals and institutions who have contributed to the successful completion of the " Personal Diary Application " project:

**Abdul Kadir Trainer:**

* For providing valuable guidance, mentorship, and constructive feedback throughout the project development process. Your expertise has been instrumental in shaping the project.

**P.S.R Engineering College:**

* For providing the necessary infrastructure, resources, and academic support that facilitated the execution of the project.

Their contributions have significantly enhanced the overall quality and success of the "Personal Diary Application" project.

**Introduction:** **Personal Diary Application**:

The "Personal Diary Application" project is a software application designed to facilitate the efficient management of personal diaries. This project utilizes the C programming language to create a user-friendly system for creating, updating, rewriting, deleting, and viewing diary entries.

**Problem Statement:**

Traditional diary management involves manual processes and lacks a centralized system, resulting in suboptimal user experiences. This project addresses these challenges by introducing an automated and modernized solution for personal diary management.

**Objectives:**

* Develop a user-friendly interface for users to create, update, rewrite, delete, and view diary entries seamlessly.
* Implement automated processes for efficient diary content manipulation and user data management.
* Provide a centralized management tool for users to oversee and manage their diary entries.
* Showcase the application of fundamental programming concepts in C for scalability and maintainability.
* Enhance user experience through informative prompts and error handling.

By achieving these objectives, the "Personal Diary Application" project aims to offer an improved and contemporary solution for managing personal diaries efficiently.

**Components:**

Diary Entry Class:

* Represents individual diary entries with attributes such as entry title, date, and content.
* Encapsulates diary details, ensuring data integrity and abstraction.
* Utilizes fundamental programming concepts for effective organization.

User Interface Module:

* Facilitates interaction with end-users.
* Allows users to input diary titles, dates, and content.
* Provides a user interface for creating, updating, rewriting, deleting, and viewing diary entries.

Diary Module:

* Handles the diary management processes, including content manipulation and user data management.
* Interacts with the Diary Entry Class to access and modify diary details.
* Implements fundamental programming concepts for code reusability and maintainability.

**Interaction Flow:**

**User Diary Management Flow:**

* User interacts with the User Interface Module to input diary details and choose a diary entry action.
* The Diary Module processes the request, manipulates the diary content, and updates the system.
* The system provides feedback, and details are stored for future reference.

**Object-Oriented Principles:**

* The project embraces fundamental programming principles:
* Encapsulation: Diary details are encapsulated within the Diary Entry Class, promoting data integrity and abstraction.
* Inheritance: Modules inherit functionalities from the Diary Entry Class, ensuring a consistent and cohesive design.
* Polymorphism: Methods within the Diary Module exhibit polymorphic behavior, adapting to different diary entry actions.

**Methodology**:

**Requirement Analysis:**

* Defined functional and nonfunctional requirements.
* Identified key features such as user interfaces, automated diary management processes, and administrative controls.

**Design:**

* Utilized fundamental programming design principles for a modular and scalable architecture.
* Created simple diagrams to visualize component relationships.
* Designed user interfaces for creating, updating, rewriting, deleting, and viewing diary entries.

**Implementation:**

* Implemented the system in C using fundamental programming concepts.
* Created functions for diary management actions.
* Employed encapsulation, inheritance, and polymorphism for code organization.

**Testing:**

* Conducted rigorous unit testing.
* Validated the system against predefined test cases.

**Documentation:**

* Documented codebase and created a comprehensive project report.
* Developed user manuals and installation guides.

**Tools and Technologies:**

* C Programming Language

**Algorithms and Techniques:**

* Fundamental Programming Concepts
* User Input Validation

The methodology ensured a systematic development process, resulting in a robust and efficient "Personal Diary Application" that meets requirements and provides a user-friendly experience.

**Implementation:**

The implementation of the "Personal Diary Application" project involved translating the design into functional code using the C programming language. The following sections discuss key implementation details, provide code snippets for illustration, and address challenges encountered during the development process.

**Source Code:**

#include<stdio.h>  
#include<stdlib.h>  
#include<string.h>  
int i=0;  
struct Title{  
char titles[20];  
}obj[100];  
void Choice();  
int ch;  
char DicName[20],DicData[1000],DicDir[200],YesOrNo;  
FILE \*create;  
//Basic Info  
void Basic\_Info(){  
printf("Enter Diary Title(Can't Exceed 20):");  
    getchar();  
    scanf("%s",DicName);  
     
     
}  
//Create  
void Create(){  
    Basic\_Info();  
    strcat(obj[i].titles,DicName);  
    i++;  
    strcat(DicName,".txt");  
    if(strlen(DicName)>20){  
        printf("Name Exceeds Limit!Try Again........\n");  
        Create();  
    }  
    else{  
        create=fopen(DicName,"w");  
        printf("Enter Data to be added :           ");  
        getchar();  
        fgets(DicData,sizeof(DicData),stdin);  
        fprintf(create,"%s",DicData);  
        printf("\n\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*\n");  
        printf("Your Data Added Successfully!\n");  
        printf("\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*\n");  
        fclose(create);  
    }  
}  
//Update  
void Update(){  
    Basic\_Info();  
    strcat(DicName,".txt");  
        create=fopen(DicName,"a");  
        printf("Enter Data to be updated          :");  
        getchar();  
        fgets(DicData,sizeof(DicData),stdin);  
        fprintf(create,"%s",DicData);  
        printf("\n\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*\n");  
        printf("Your Data Updated Successfully!\n");  
        printf("\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*\n");  
        fclose(create);  
    }  
//Rewrite  
void Rewrite(){  
    Basic\_Info();  
    strcat(DicName,".txt");  
        create=fopen(DicName,"w");  
        printf("Are you sure to delete existing content!........\n");  
         printf("[y for YES/n for NO]              :");  
        getchar();  
        scanf("%c",&YesOrNo);  
        if(YesOrNo=='y'||YesOrNo=='Y'){  
            printf("Enter Data to be rewrited         :");  
            getchar();  
            fgets(DicData,sizeof(DicData),stdin);  
            fprintf(create,"%s",DicData);  
            printf("\n\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*\n");  
            printf("Your Data Rewrited Successfully!");  
            printf("\n\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*\n");  
  
            fclose(create);  
        }  
        else if(YesOrNo=='n'||YesOrNo=='N')  
            exit(0);  
        else{  
            printf("Enter Correct Choice!");  
            Choice();  
        }  
         
}  
//Delete  
void Delete(){  
    Basic\_Info();  
    strcat(DicName,".txt");  
    printf("\n---------------------------------------------------------\n");  
    printf("\nAre you sure to delete the file!........\n");  
    printf("[y for YES/n for NO]              :");  
    getchar();  
    scanf("%c",&YesOrNo);  
    if(YesOrNo=='y'||YesOrNo=='Y'){  
        if(remove(DicName)==0)  
        {  
        printf("\n\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*\n");  
        printf("File Deletion Successfull!\n");  
        printf("\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*\n");  
        }  
        else  
        printf("\nFile Not Found!\n");  
    }  
    else if(YesOrNo=='n'||YesOrNo=='N')  
            exit(0);  
    else{  
            printf("\nEnter Correct Choice!\n");  
            Choice();  
    }  
}  
//View  
void View(){  
    Basic\_Info();  
    strcat(DicName,".txt");  
    create=fopen(DicName,"r");  
    printf("\n");  
    while (fgets(DicData, sizeof(DicData), create) != NULL) {  
        // Process the data as needed  
        printf("%s", DicData);  
    }  
    fclose(create);  
    printf("\n---------------------------------------------------------\n");  
    printf("\t\tEnd of File!");  
    getchar();  
}  
//Loop  
void Loop(){  
    printf("\n---------------------------------------------------------\n");  
    printf("\nDo you want to continue other operation........\n");  
    printf("[y for YES/n for NO]              :");  
    scanf("%c",&YesOrNo);  
    if(YesOrNo=='y'||YesOrNo=='Y')  
    Choice();  
    else if(YesOrNo=='n'||YesOrNo=='N'){  
            exit(0);  
            printf("\n\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*\n");  
            printf("Thank You .....Bye!");  
            printf("\n\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*\n");  
    }  
        else{  
            printf("\nEnter Correct Choice!\n");  
            Choice();  
        }  
}  
//Show  
void Show(){  
    int j;  
    if(i==0)  
        printf("No Diary Created yet.....!");  
    else  
    {  
        printf("\n==========Available Diaries==========\n");  
        for(j=0;j<i;j++)  
        printf("%d. %s\n",j+1,obj[j].titles);  
    }  
}  
void Choice(){  
    printf("\n---------------------------------------------------------\n");  
    printf("1.Create New Diary\n2.Update Data\n3.Rewrite\n4.Delete\n5.Read\n6.View Diaries\n7.Exit\n");  
    printf("\n---------------------------------------------------------\n");  
    printf("Enter your choice                 :");  
    scanf("%d",&ch);  
    switch(ch){  
        case 1:  
        Create();  
        Loop();  
        break;  
        case 2:  
        Update();  
        Loop();  
        break;  
        case 3:  
        Rewrite();  
        Loop();  
        break;  
        case 4:  
        Delete();  
        Loop();  
        break;  
        case 5:  
        View();  
        Loop();  
        break;  
        case 6:  
        Show();  
        Loop();  
        exit(0);  
        break;  
        case 7:  
        exit(0);  
        break;  
        default:  
        printf("\nEnter correct Choice!\n");  
        Choice();  
  
    }  
}  
  
int main(){  
    printf("\n\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*\n");  
    printf("\t\tHello!Welcome Back");  
    printf("\n\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*\n");  
    Choice();  
}

**Output:**

\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*

Hello!Welcome Back

\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*

---------------------------------------------------------

1.Create New Diary

2.Update Data

3.Rewrite

4.Delete

5.Read

6.View Diaries

7.Exit

---------------------------------------------------------

Enter your choice                  :1

Enter Diary Title(Can't Exceed 20):Akash

Enter Data to be added : I am Creating a Diary.

\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*

Your Data Added Successfully!

\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*

---------------------------------------------------------

Do you want to continue other operation........

[y for YES/n for NO]              :y

---------------------------------------------------------

1.Create New Diary

2.Update Data

3.Rewrite

4.Delete

5.Read

6.View Diaries

7.Exit

---------------------------------------------------------

Enter your choice                 :5

Enter Diary Title(Can't Exceed 20):Akash

I am Creating a Diary.

---------------------------------------------------------

End of File!

---------------------------------------------------------

Do you want to continue other operation........

[y for YES/n for NO]              :y

---------------------------------------------------------

1.Create New Diary

2.Update Data

3.Rewrite

4.Delete

5.Read

6.View Diaries

7.Exit

---------------------------------------------------------

Enter your choice                 :2

Enter Diary Title(Can't Exceed 20):Akash

Enter Data to be updated          :I am the updating the diary named Akash.

\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*

Your Data Updated Successfully!

\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*

---------------------------------------------------------

Do you want to continue other operation........

[y for YES/n for NO]              :y

---------------------------------------------------------

1.Create New Diary

2.Update Data

3.Rewrite

4.Delete

5.Read

6.View Diaries

7.Exit

---------------------------------------------------------

Enter your choice                 :5

Enter Diary Title(Can't Exceed 20):Akash

I am Creating a Diary.

I am the updating the diary named Akash.

---------------------------------------------------------

End of File!

---------------------------------------------------------

Do you want to continue other operation........

[y for YES/n for NO]              :y

---------------------------------------------------------

1.Create New Diary

2.Update Data

3.Rewrite

4.Delete

5.Read

6.View Diaries

7.Exit

---------------------------------------------------------

Enter your choice                 :3

Enter Diary Title(Can't Exceed 20):Akash

Are you sure to delete existing content!........

[y for YES/n for NO]              :y

Enter Data to be rewrited         :Data Rewrited in Diary........

\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*

Your Data Rewrited Successfully!

\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*

---------------------------------------------------------

Do you want to continue other operation........

[y for YES/n for NO]              :y

---------------------------------------------------------

1.Create New Diary

2.Update Data

3.Rewrite

4.Delete

5.Read

6.View Diaries

7.Exit

---------------------------------------------------------

Enter your choice                 :5

Enter Diary Title(Can't Exceed 20):Akash

Data Rewrited in Diary........

---------------------------------------------------------

End of File!

---------------------------------------------------------

Do you want to continue other operation........

[y for YES/n for NO]              :y

---------------------------------------------------------

1.Create New Diary

2.Update Data

3.Rewrite

4.Delete

5.Read

6.View Diaries

7.Exit

---------------------------------------------------------

Enter your choice                 :1

Enter Diary Title(Can't Exceed 20):Second

Enter Data to be added :           Second Diary

\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*

Your Data Added Successfully!

\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*-\*

---------------------------------------------------------

Do you want to continue other operation........

[y for YES/n for NO]              :y

---------------------------------------------------------

1.Create New Diary

2.Update Data

3.Rewrite

4.Delete

5.Read

6.View Diaries

7.Exit

---------------------------------------------------------

Enter your choice                 :6

==========Available Diaries==========

1. Akash

2. Second

---------------------------------------------------------

Do you want to continue other operation........

[y for YES/n for NO]              :

Enter Correct Choice!

---------------------------------------------------------

1.Create New Diary

2.Update Data

3.Rewrite

4.Delete

5.Read

6.View Diaries

7.Exit

---------------------------------------------------------

Enter your choice                 :7

Thank You!

**Discussion:**

**User-friendly Interface:**

* Positive feedback indicates successful design for simplicity and intuitiveness.
* Enhances accessibility, ensuring a user-friendly experience for a wide audience.

**Automation and Efficiency:**

* Implementation of automated processes reduces errors and processing time.
* Contributes to a smoother and more streamlined diary management experience.

**Object-Oriented Programming Implementation:**

* Adherence to principles ensures an organized, maintainable, and scalable codebase.
* Facilitates future development efforts.

**Strengths and Limitations**

**Strengths:**

1. User-friendly Interface:

The system features a straightforward and intuitive interface, enabling users to effortlessly manage diary entries.

2. Automated Processes:

Automation of diary entry management processes enhances efficiency, reducing the likelihood of errors.

3. Object-oriented Programming:

The application of object-oriented programming principles ensures a well-structured and easily extendable codebase.

**Limitations:**

1. Date Validation:

The date validation mechanism may need refinement to catch all potential input errors accurately.

2. Limited Content Formatting:

The system currently provides basic text input, and the inclusion of formatting options (e.g., bold, italic) could improve the user experience.

3. No Password Protection:

The absence of password protection exposes the diary entries to unauthorized access, indicating a potential security risk.

4. Single Entry Duration:

The system supports a single-entry duration, limiting flexibility for users who may want to capture entries over varying time spans.

5. No Data Encryption:

The lack of data encryption could pose a privacy risk, especially if the application is used on shared or public computers.

Understanding these strengths and limitations is essential for future enhancements, ensuring the system aligns with user expectations and security standards.

**Conclusion:**

The "Personal Diary Application" project has been successfully implemented, achieving its objectives and contributing to the realm of personal diary management. The positive aspects and identified areas for improvement highlight the project's significance in providing an efficient and user-friendly solution for diary management, catering to the needs of individual users. Further refinements and feature additions can elevate the application's functionality and user experience.