A

PROJECT REPORT

On

"EMPLOYEE MANAGEMENT SYSTEM"

(Desktop App)

SUBMITTED

TO

BHARATI VIDYAPEETH (DEEMED TO BE) UNIVERSITY PUNE

IN THE PARTIAL FULFILLMENT OF

BACHELOR OF COMPUTER APPLICATIONS

SEMESTER-V (2023-24)

BY

Mr. MD Yusuf Nawaz Shaikh

&

Mr. Soyeb Shaikh

UNDER THE GUIDANCE OF

Prof. Dayanand Mhetre

THROUGH

DIRECTOR

BHARATI VIDYAPEETH (DEEMED TO BE) UNIVERSITY, PUNE

ABHIJIT KADAM INSTITUTE OF MANAGEMENT AND SOCIAL SCIENCES, SOLAPUR

C E R T I F I C A T E

This is to certify that **Mr.Md.Yusuf Nawaz Shaikh & Mr. Soyeb Shaikh** having Exam Seat Nos. _____ & _____respectively are bonafide students of this Institute studying in **BCA SEM–V** have completed the project report entitled **"Employee Management System"** for the partial fulfillment of the requirement of **B.C.A**. submitted to **BHARATI VIDYAPEETH (DEEMED TO BE) UNIVERSITY, PUNE**

They have carried out this work satisfactory.

Place: Solapur

Date: 6/11/2023

Dr. S.B. Sawant

(Director)

BHARATI VIDYAPEETH (DEEMED TO BE) UNIVERSITY, PUNE

ABHIJIT KADAM INSTITUTE OF MANAGEMENT AND SOCIAL SCIENCES, SOLAPUR

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Place: Solapur

Date: 6/11/2023

Dr. A. B. Nadaf

(HOD)

(Department of Computer Application)

BHARATI VIDYAPEETH (DEEMED TO BE) UNIVERSITY, PUNE

ABHIJIT KADAM INSTITUTE OF MANAGEMENT AND SOCIAL SCIENCES, SOLAPUR

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They have carried out this work satisfactory.

Place: Solapur

Date: 6/11/2023

Prof. Dayanand Mhetre

Project Guide (Internal) **External Examiner**

D E C L A R A T I O N

To,

The Director,

Bharati Vidyapeeth (DEEMED TO BE) University,

Abhijit Kadam Institute of Management

And Social Sciences, Solapur – 413004

Respected Sir,

I undersigned hereby declare that the project report entitled **"Employee Management System**" written and submitted under the guidance of **Prof. Dayanand Mhetre** it's my original work. The empirical findings in this project are based on the data collected by myself while preparing this project. I have not copied from any other project report.

I understood that, any such copying is liable to be punished in a way the University authorities may deem fit.

Place: Solapur

Date: 6/11/2023

Mr. Md Yusuf Shaikh **Mr. Soyeb Shaikh**

ACKNOWLEDGEMENT

The happiness of anything depends on what we give more than what we get. I would like to give the words of thanks, but the words are not enough to express my deep sense of gratitude to many persons who spread their time and efforts during the course of study work without their whole hearted assistance and co-operation the project won't be successful

I would like to give special thanks to our **Director Dr. S. B Sawant Sir** for giving an opportunity to complete my project.

I got the opportunity to express my sincere thanks to project guide **Dr. Dayanand Mhetre** Sir for their valuable guidance and contribution in preparing the project.

I am especially thankful to **HOD Dr. A.B Nadaf Sir** for his valuable guidance and contribution in preparing the project.

I also, thank to my classmates every one of my family and all the people who helped me directly and indirectly to complete this project.

Mr. Md Yusuf Shaikh **Mr. Soyeb Shaikh**

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INTRODUCTION OF PROJECT

&

OBJECTIVE OF THE PROJECT

- ***Introduction:***

  In the modern business landscape, managing and maintaining employee records efficiently is paramount to the success of any organization. The Employee Management System (EMS) project is a comprehensive software solution designed to streamline and simplify the process of handling employee information within an organization. This project aims to revolutionize the way businesses manage their workforce by providing a user-friendly interface and an array of features tailored to meet the specific needs of HR departments and managers.

  I have Given a Login System to my Code when you enter a valid Information then only you can access my Software Functionalities.

- ***2.Objective :***

***Eff*icient Employee Data Management: The primary objective of the EMS is to provide a centralized platform for the efficient and organized management of employee data. This includes storing, updating, and retrieving information in a user-friendly manner.**

Enhanced Reporting and Analysis: The EMS should allow for generating comprehensive reports and conducting data analysis on various aspects of employee information, enabling better decision-making and strategic planning.

Employee Engagement: The system can contribute to employee engagement by allowing employees to access and update their own information, thereby promoting a sense of ownership and involvement in their records.

FEASIBILITY

The feasibility study proposes one or more conceptual solution to the problem set of the project. In fact, it is an evaluation of whether it is worthwhile to proceed with project or not. Feasibility analysis usually considers a number of project alternatives, one that is chosen as the most satisfactory solution. These alternatives also need to be evaluated in a broad way without committing too many resources. Various steps involved in feasibility analysis are:

- **To propose a set of solution that can realize the project goal. These solutions are usually descriptions of what the new system should look like.**

1. Economic Feasibility -

Cost-Benefit Analysis: Assess the financial viability of developing and implementing the EMS. Calculate the initial development costs, ongoing maintenance expenses, and potential cost savings from increased operational efficiency. Compare the projected costs with the anticipated benefits.

Return on Investment (ROI): Determine the expected ROI over a specific period, factoring in the reduction in manual administrative tasks, potential reduction in HR staff requirements, and improved data accuracy.

Payback Period: Identify how long it will take for the project to pay for itself and begin generating a net positive return.

2.TECHNICAL FEASIBILITY

Technical Feasibility includes existing and new H/W and S/W requirements that are required to operate the project on the platform Turbo C. The basic S/W requirement is Visual Studio Code which the front end of the Employee Management System project has been done. The basic developed in Visual Codeand the data is stored in the FILES.

3.OPERATION FEASIBILITY

User Acceptance: Assess the willingness and readiness of end-users, including HR personnel, managers, and employees, to adopt and utilize the EMS.

Training Requirements: Identify the training needs for users to ensure they can effectively operate the system and leverage its functionalities.

Integration: Evaluate the ability to integrate the EMS with existing HR processes and systems, such as payroll and timekeeping.

4.LEGAL FEASIBILITY -

A determination of any infringement, violation or liability that could result from development of the system, legal feasibility tells that the software used in the project should be original purchased from the legal authorities and they have the license to use it or the software are pirated.

System Analysis

1. EXISTING SYSTEM

The existing system was a manual one. Whatever be the process involved in the system were done through files. There were lots of complexities involved in the system When any new student takes new admission then separate files were maintained. Updating of data was very tedious job. It was not easy to do several administrative works like managing class by class records, addition or modification of existing records & users list.

2. PROBLEM WITH EXISTING SYSTEM

In the existing system all the office works was done manually. The manual work processes was time consuming and hence slow. Following are the main drawbacks of the existing system: • The existing system is totally manual thus there are chances of error in processing.

• The basic and major drawbacks in the existing system are the speed of retrieval of data from files, which leads to delay.

- Maintenance of voluminous data is very cumbersome and laborious job.
- The manual jobs such as calculation are more error prone.
- There are plenty of chances of duplicity of data and information.
- Updating is very tedious job. The above facts, figures and drawbacks clearly indicate that there is need for computerization and thus decided to computerize the "Employee Management System". Since the existing system was totally manual which has lots of complexities, shortcomings in itself and all the data was being stored in registers, files etc thus to overcome the limitation of the existing system, the new computerized system was needed, so that information can be provided to the user more quickly, easily and more accurately.

3.PROPOSED SYSTEM

The new system titled "Employee Management System" was hence proposed to remove all the drawbacks discussed above. Information is a vital ingredient for the operation and management of any organization. Thus any system should have the ability to provide error free filtered information after processing the required data. This system has been taken up with a view for developing a more sophisticated system that can be easily handled by any kind of users. The proposed system aims at efficient and timely information for decision-making, integrate with other functions, and reduce redundant work.

3. IMPORTANT FEATURES OF PROPOSED SYSTEM ARE

- Consistent user interface with high economic features built into it.
- System design is modular and structured way, so as to make the integration with other subsystems easier.

- User has complete control as it provides and accepted only appropriate and valid data.
- User-friendly error messages are provided wherever necessary. Addition, deletion, modification of record is done as and when needed.
- Records retrieval for users is also done by system.

5 .OBJECTIVE OF PROPOSED SYSTEM

- To reduce workload of staff.
- To reduce the delay in processing time.
- To reduce the delay in records update.
- To provide the user-friendliness in all possible ways.
- To provide greater flexibility.
- Make maintenance changes easy

6.COMPUTERIZED SYSTEM

- The existing system is totally manual thus there are chances of error in processing.

- The basic and major drawbacks in the existing system are the speed of retrieval of data from files, which leads to delay.

- Maintenance of voluminous data is very cumbersome and laborious job. The manual jobs such as calculation are more error prone.

- There are plenty of chances of duplicity of data and information. Updating is very tedious job.

SYSTEM REQUIREMENTS SPECIFICATION

1.FUNCTIONAL REQUIREMENTS:

User Authentication and Authorization:

The system should provide secure login and user access controls, allowing different user roles (HR, managers, employees) with specific permissions.

Employee Data Management:

Ability to add, edit, and delete employee records.

Capture and store essential employee information, such as personal details, contact information, employment history, and job-related data.

Employee Self-Service Portal:

Allow employees to access and update their personal information, emergency contacts, and tax-related data.

Enable employees to request leave, view pay stubs, and monitor attendance.

Leave Management:

Support the creation and management of leave requests, including different leave types (e.g., vacation, sick leave).

Automatically calculate leave balances and provide approval workflows

2.NON-FUNCTIONAL REQUIREMENTS :

SAFETY AND SECUIRTY REQUIREMENTS

This application won't be accessing any features of the device like contacts or message inbox and hence does not possess a threat in breaching the privacy of the user. All data entries can only be accessed by authorized users only.

SOFTWARE QUALITY ATTRIBUTES

The quality of this software will be represented by the user friendliness of the user interface, the security of the data, and the flexibility of manipulating data.

3.HARDWARE REQUIRMENTS

- **PIV 2.8GHz Processor and above**
- **RAM 512MB and above**
- **HDD 40GB hard disk space and above**

4.SOFTWARE REQUIRMENTS

- **WINDOWS OS(NT/XP/7/10/11)**
- **Ms Office**
- **Visual Studio Code.**

PROJECT DESIGN

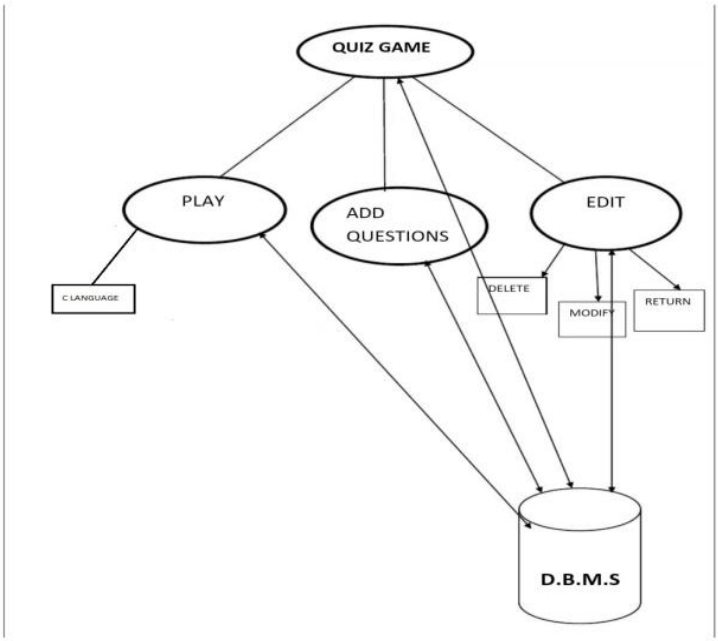
The high-level UML design diagrams are designed using the open source software. Several entities were identified and the relation between these entities is described in these diagrams. The various diagrams determined for this application include:

- **Data flow diagram**
- **Entity relationship diagram**
- **Use case diagram**
- **Sequence diagram**

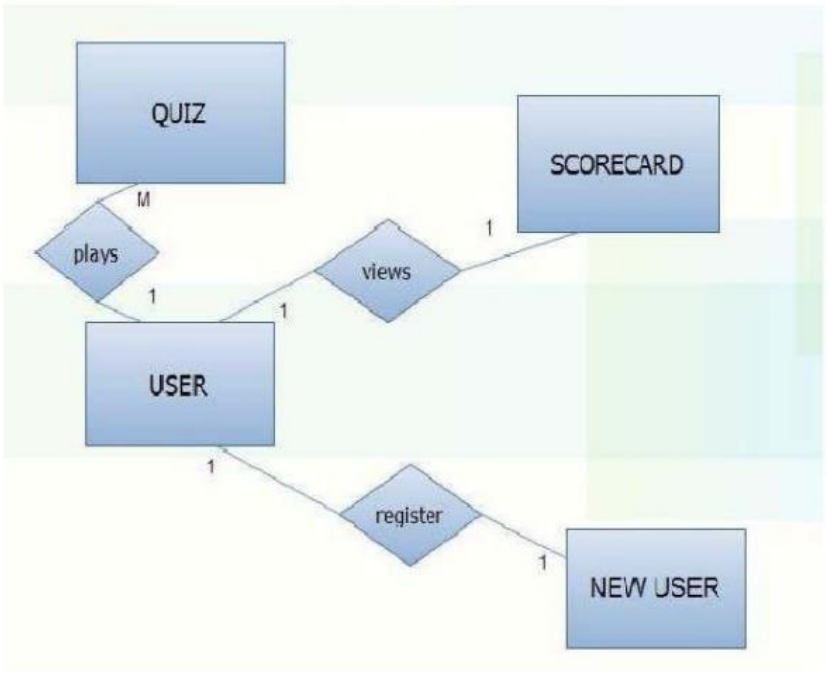
1. DATA FLOW DIAGRAM

Data Flow Diagram (DFD) is a diagrammatic representation of data movement through a system -manual or automated from inputs to outputs through processing. DFD helps in the analysis of the flow of data through a system and thus help in identifying the system requirements. The top level of DFD is known as Context level. It is the first step in requirement determination, which aims at learning the general characteristics of the business process and defines the system that will be studied in the sense that it determines the boundaries.

Data Flow Diagram



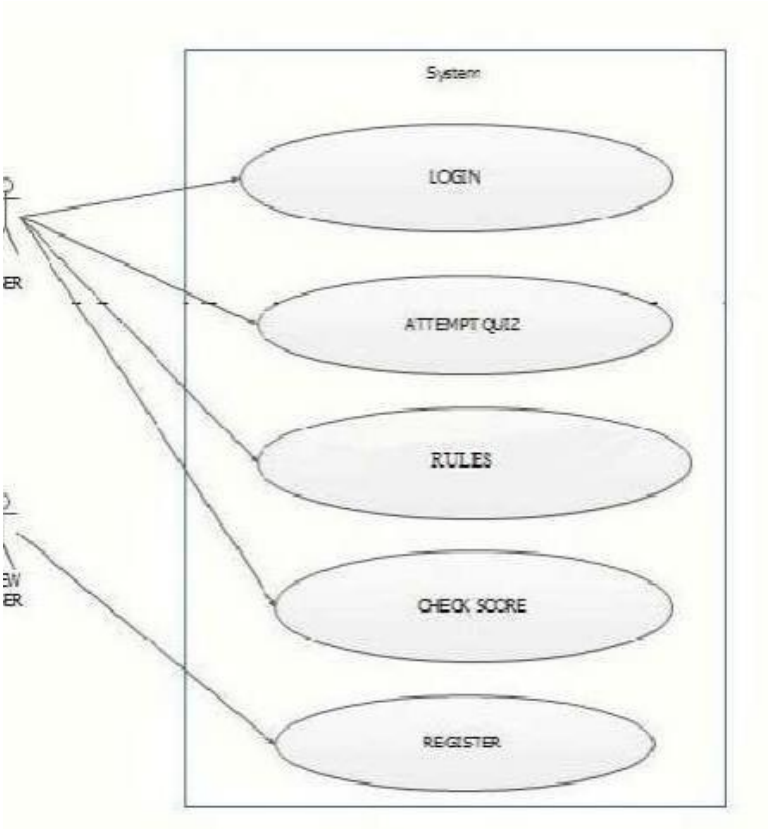
2.ENTITY RELATIONSHIP DIAGRAM



The ERD is the notation that is used to conduct the date modeling activity the attributes of each data object noted is the ERD can be described resign a data object descriptions. The primary purpose of the ERD is to represent data objects and their relationships.

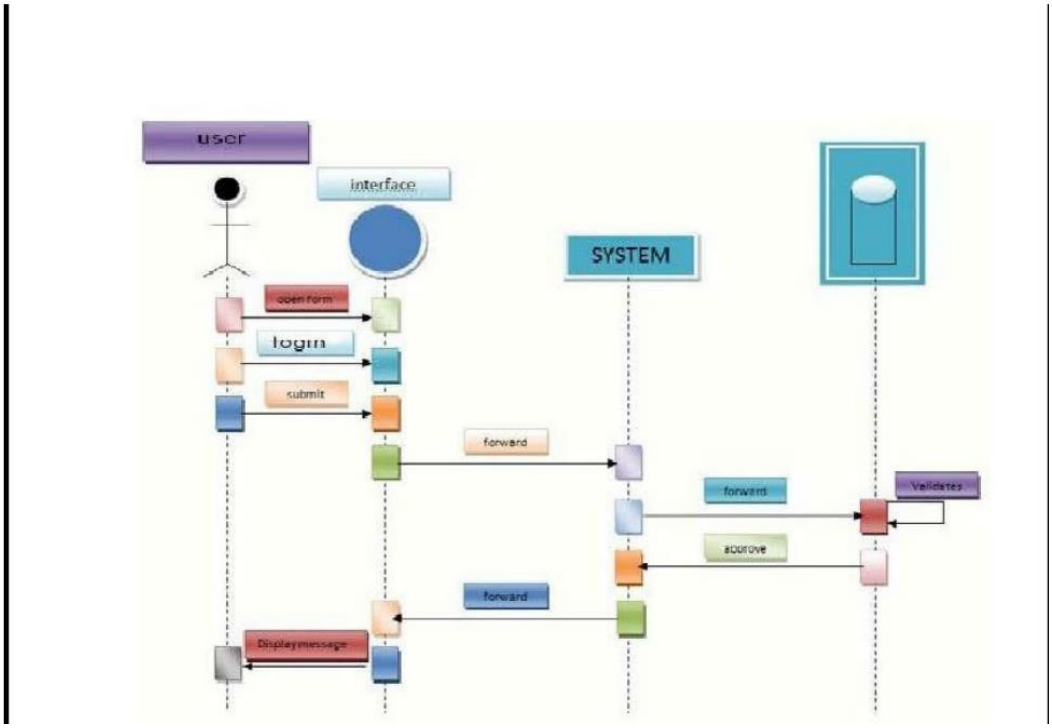
3.USE CASE DIAGRAM

A use case diagram is used to represent roles and action. Each user/role has different privileges and each perform different action. A use case diagram is used to represent the actions by the user in a system. It has user in a system



4.SEQUENCE DIAGRAM

A sequence diagram shows the interaction between the various classes and processes and the interaction order necessary to perform the functionality of the scenario. It showcases the classes involved in an interaction and the function calls and sequence of messages exchanged in that interaction. It forms a prototype to represent the behaviour of various modules of application. The interaction between the various classes is represented by the following sequence diagrams



Source CODE

```
import java.util.*;

import java.io.*;



/*************************** MENU OF EMS
***************************/


class MainMenu

{

  public void menu()

  {


System.out.println("\t\t**********************************
**********");

   System.out.println("\t\t\t  EMPLOYEE MANAGEMENT
SYSTEM");
```

```
System.out.println("\t\t**********************************
**********");
   System.out.println("\t\t\t    --------------------");
   System.out.println("\t\t\t     ~~~~~ WELCOME ~~~~~~~");
   System.out.println("\t\t\t    --------------------");
   System.out.println("\n\nPress 1 : To Add an Employee
Details");
   System.out.println("Press 2 : To See an Employee Details ");
   System.out.println("Press 3 : To Remove an Employee");
   System.out.println("Press 4 : To Update Employee Details");
   System.out.println("Press 5 : To Exit the EMS Portal");


  }
}

// login system

class LoginSystem{
```

```
    private static final String USERNAME = "Admin";
    private static final String PASSWORD = "1234";

    public boolean authenticate(){
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter Username:");
        String username = sc.nextLine();
        System.out.print("Enter password :");
        String password = sc.nextLine();

        if (username.equals(USERNAME) &&
password.equals(PASSWORD)){
            return true;
        } else {
            System.out.println("invalid username or password.");
            return false;
        }
        }
    }
```

```
/************************ To add details of Employee
**********************/
class Employee_Add
{
   public void createFile()
   {
      Scanner sc=new Scanner(System.in);


      EmployDetail emp=new EmployDetail();
      emp.getInfo();
      try{
         File f1=new File("file"+emp.employ_id+".txt");
         if(f1.createNewFile()){
            FileWriter myWriter = new
FileWriter("file"+emp.employ_id+".txt");
            myWriter.write("Employee
ID:"+emp.employ_id+"\n"+"Employee Name
:"+emp.name+"\n"+
```

```
            "Father's Name
:"+emp.father_name+"\n"+"Employee Contact
:"+emp.employ_contact+"\n"+
            "Email Information :"+emp.email+"\n"+"Employee
position :"+emp.position+"\n"+
            "Employee Salary   :"+emp.employ_salary);
            myWriter.close();
            System.out.println("\nEmployee has been Added :)\n");

            System.out.print("\nPress Enter to Continue...");
            sc.nextLine();
         }
         else {
            System.out.println("\nEmployee already exists :(");
            System.out.print("\nPress Enter to Continue...");
            sc.nextLine();
         }
      }
      catch(Exception e){System.out.println(e);}
```

```
    }
}

/************************* Taking Employee Details
************************/

class EmployDetail
{
    String name;
    String father_name;
    String email;
    String position;
    String employ_id;
    String employ_salary;
    String employ_contact;
    public void getInfo()
    {
        Scanner sc=new Scanner(System.in);
        System.out.print("Enter Employee's name --------: ");
```

```
        name=sc.nextLine();
        System.out.print("Enter Employee's Father name -: ");
        father_name=sc.nextLine();
        System.out.print("Enter Employee's ID ----------: ");
        employ_id=sc.nextLine();
        System.out.print("Enter Employee's Email ID ----: ");
        email=sc.nextLine();
        System.out.print("Enter Employee's Position ----: ");
        position=sc.nextLine();
        System.out.print("Enter Employee contact Info --: ");
        employ_contact=sc.nextLine();
        System.out.print("Enter Employee's Salary ------: ");
        employ_salary=sc.nextLine();
    }
}
/************************ To Show details of Employee
**********************/

class Employee_Show
```

```
{
  public void viewFile(String s) throws Exception
  {
    File file = new File("file"+s+".txt");
    Scanner sc = new Scanner(file);

    while (sc.hasNextLine())
    {
      System.out.println(sc.nextLine());
    }
  }
}

/****************************** To Remove Employee
************************/

class Employee_Remove
{
   public void removeFile(String ID)
```

```
    {


    File file = new File("file"+ID+".txt");
      if(file.exists())
       {
         if(file.delete());
         {
           System.out.println("\nEmployee has been removed
Successfully");
         }
       }
      else
       {
           System.out.println("\nEmployee does not exists :( ");
       }
     }
}
```

```
/************************ To Update details of Employee
*********************/


class Employee_Update
{
  public void updateFile(String s,String o,String n) throws
IOException
  {
   File file = new File("file"+s+".txt");
   Scanner sc = new Scanner(file);
   String fileContext="";
   while (sc.hasNextLine())
      {
        fileContext =fileContext+"\n"+sc.nextLine();
      }
   FileWriter myWriter = new FileWriter("file"+s+".txt");
   fileContext = fileContext.replaceAll(o,n);
   myWriter.write(fileContext);
   myWriter.close();
```

```
  }
}


/************************ To Exit from the EMS Portal
**********************/


class CodeExit
{
  public void out()
  {

System.out.println("\n**********************************
*******");
    System.out.println("Thank You For Using my Software :");

System.out.println("**************************************
*****");
    System.exit(0);
```

```
  }
}



/****************************** Main Class
******************************/
class EmployManagementSystem
{
  public static void main(String arv[])
  {



LoginSystem loginSystem = new LoginSystem();


if (loginSystem.authenticate()){


/** To clear the output Screen **/
    System.out.print("\033[H\033[2J");
```

```
Scanner sc=new Scanner(System.in);
Employee_Show epv =new Employee_Show();

int i=0;

/*** Callining Mainmenu Class function ****/
MainMenu obj1 = new MainMenu();
obj1.menu();

/*** Initialising loop for Menu Choices ***/
while(i<6)
{

  System.out.print("\nPlease Enter choice :");
  i=Integer.parseInt(sc.nextLine());

  /** Switch Case Statements **/
  switch(i)
```

```
    {
      case 1:
      {
      /** Creating class's object and calling Function using that
object **/
      Employee_Add ep =new Employee_Add();
      ep.createFile();

      System.out.print("\033[H\033[2J");
      obj1.menu();
      break;
      }
      case 2:
      {
        System.out.print("\nPlease Enter Employee's ID :");
        String s=sc.nextLine();
        try
        {
          epv.viewFile(s);}
```

```
    catch(Exception e){System.out.println(e);}



    System.out.print("\nPress Enter to Continue...");
    sc.nextLine();
    System.out.print("\033[H\033[2J");
    obj1.menu();
    break;
   }

 case 3:
 {
   System.out.print("\nPlease Enter Employee's ID :");
   String s=sc.nextLine();
   Employee_Remove epr =new Employee_Remove();
   epr.removeFile(s);


   System.out.print("\nPress Enter to Continue...");
```

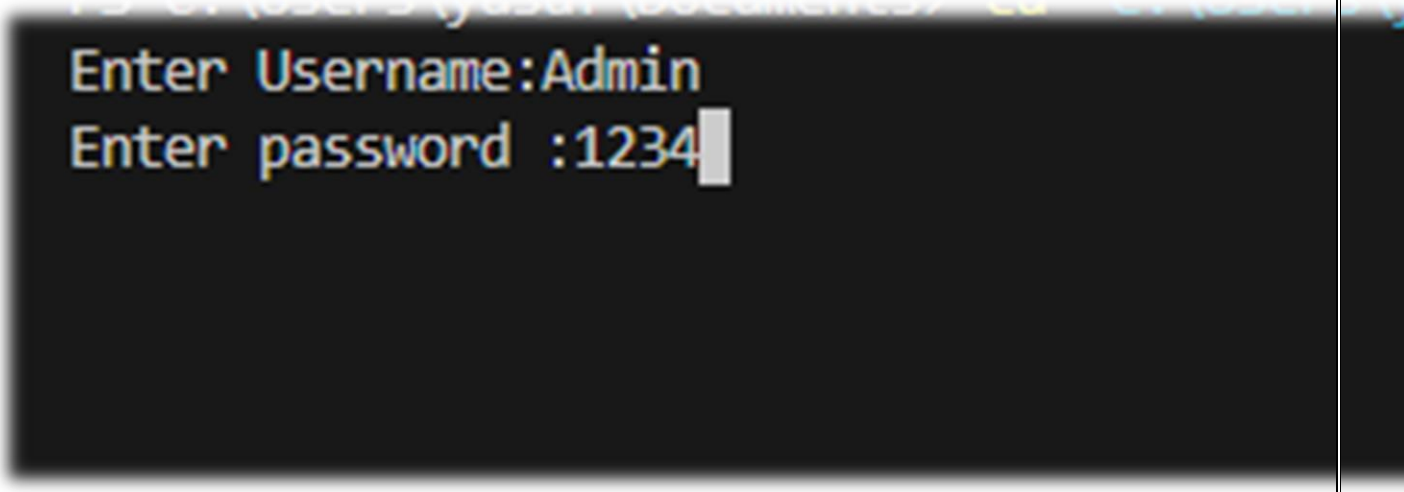
```
  sc.nextLine();
  System.out.print("\033[H\033[2J");
  obj1.menu();
  break;
}
case 4:
{
   System.out.print("\nPlease Enter Employee's ID :");
   String I=sc.nextLine();
   try
   {
    epv.viewFile(I);
   }
   catch(Exception e)
   {
    System.out.println(e);
   }
   Employee_Update epu = new Employee_Update();
```

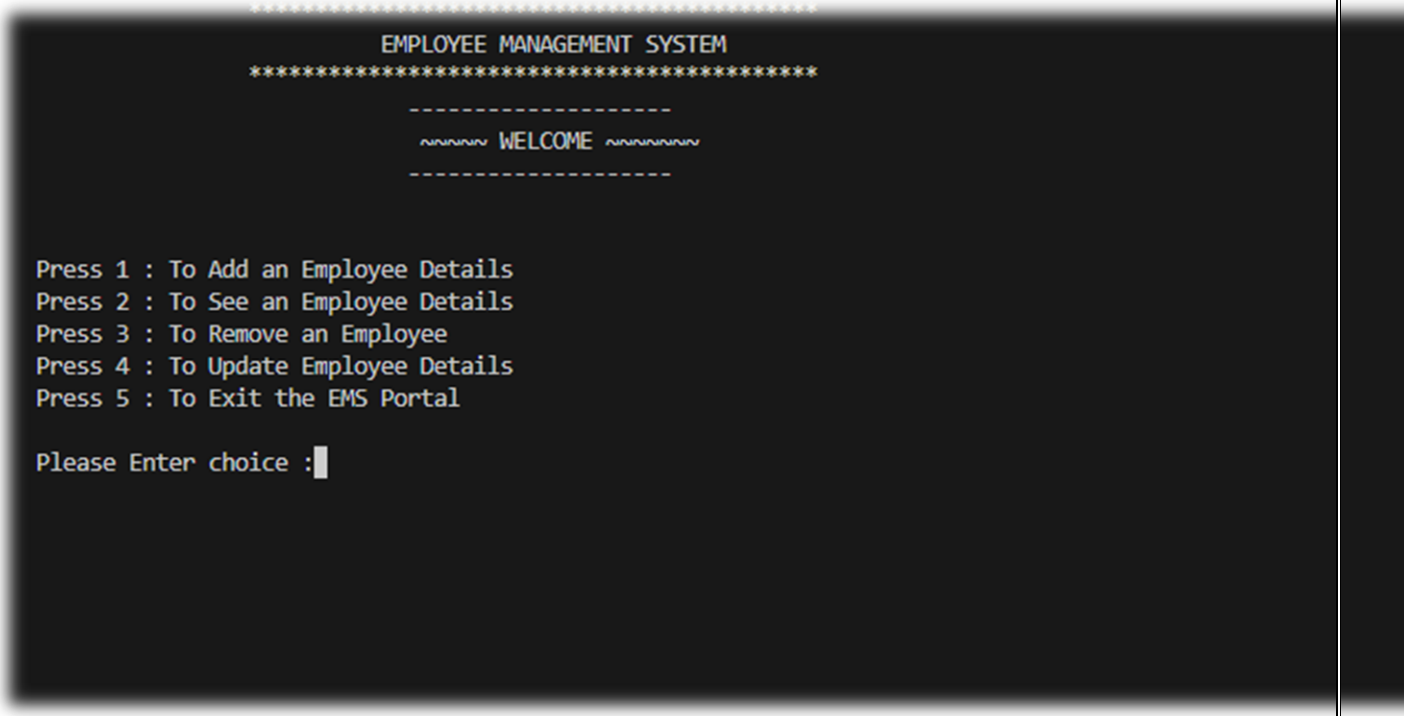
```
System.out.print("Please Enter the detail you want to Update :");
System.out.print("\nFor Example :\n");
System.out.println("If you want to Change the Name, then Enter Current Name and Press Enter. Then write the new Name then Press Enter. It will Update the Name.\n");
String s=sc.nextLine();
System.out.print("Please Enter the Updated Info :");
String n=sc.nextLine();
try
{
 epu.updateFile(I,s,n);

 System.out.print("\nPress Enter to Continue...");
 sc.nextLine();
 System.out.print("\033[H\033[2J");
 obj1.menu();
 break;
}
```

```
        catch(IOException e)
        {
          System.out.println(e);
        }
      }
      case 5:
      {
        CodeExit obj = new CodeExit();
        obj.out();
      }
    }
   }
}
}
```

OUTPUT:


Enter Username:Admin
Enter password :1234


EMPLOYEE MANAGEMENT SYSTEM
WELCOME
Press 1 : To Add an Employee Details
Press 2 : To See an Employee Details
Press 3 : To Remove an Employee
Press 4 : To Update Employee Details
Press 5 : To Exit the EMS Portal
Please Enter choice :

TECHNOLOGY USED

1 .FRONT END ***: JAVA***

JAVA was developed by James Gosling at Sun Microsystems Inc in the year 1995 and later acquired by Oracle Corporation. It is a simple programming language. Java makes writing, compiling, and debugging programming easy. It helps to create reusable code and modular programs

❖ ***Key Characterstics :***

Platform Independence: ***Java code is compiled into an intermediate form known as bytecode, which is executed by the JVM. As a result, Java applications can be run on any platform that has a compatible JVM installed.***

Object-Oriented: ***Java is primarily an object-oriented language, promoting the use of objects and classes for code organization and reusability.***

Strongly Typed: *Java enforces strong typing, meaning that variable types are explicitly declared and checked at compile time, reducing the likelihood of type-related errors.*

Security: *Java has built-in security features to protect against malicious code, making it a preferred choice for developing applications that run in potentially untrusted environments, such as web browsers.*

2. BACK END

Any file for storing database. Many real life problems handle large volumes of data so we

need to use some devices such as floppy disk or hard disk to store a data. The data is stored in

these devices using a concept of files. A file is a collection of data stored in a particular area

on a disk. Programs can be designed to perform read and write operations on these files.

CONCLUSION

The Employee Management System is a Crucial tool for organization to streamline their HR processes,enhance employee productivity and ensure efficient workforce management.

This Project has demonstrated the significance of leveraging technology to optimize human resource functions ,improve employee satisfaction and ultimately contribute to overall success of the organization.

LIMITATION

Certainly, here are some limitations that may apply to an Employee Management System (EMS) project:

<u>Initial Development Costs:</u> Developing a comprehensive EMS with all the desired features can be expensive, particularly for small or resource-constrained organizations. The initial investment in software development and implementation may be a limitation.

<u>Technical Expertise</u>: Ensuring that the system is properly developed, maintained, and scaled requires a team with technical expertise. Smaller organizations without access to such expertise may face challenges in managing the EMS effectively.

<u>Data Privacy and Security</u>: Ensuring compliance with data privacy laws and maintaining the security of sensitive employee data is critical. Any breaches or data leaks could have serious legal and reputational consequences.

<u>Maintenance and Upkeep:</u> Like any software system, the EMS will require ongoing maintenance, updates, and bug fixes. Failure to maintain the system can lead to limitations and reduced functionality over time.

~~~~~~
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