COVER PAGE

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CODING FOR HOSPITAL MANAGEMNET:

```
package assignment1;

import java.util.Scanner;
import java.io.FileWriter;
import java.io.IOException;
import java.io.FileReader;
import java.io.BufferedReader;
import java.util.Arrays;



public class Assignment1 {

    static final String FILENAME = "database.txt";
    static double Number[]=new double[1];
 static double IDNumber[]=new double[1];
    static String FirstName;
    static String lastName;
    static String Email;
    static String password[]=new String[1];
    static String Diagnose;
    static String Procedure;
    static String effects;
    static String workerType;
    static String gender;
    static String occupation;
    static String availabilityTime;
    static String breakTime;
    static String shift;
    static String Method;
    static String payment;
    static String prescriptionName;
    static String DateOfBirth;
    static String bloodType;
```

```
    static String Risks;
    static String Evidence;
    static String Pills[]=new String[0];
    static double Cardnumber[]=new double[1];
    static double phoneNumber[]=new double[1];
    static int DateofBirth;
    static int Option;
    static double appointmentId;
    static double procedureCost;
    static double medicationCost;
    static double patientId[]=new double[1];
    static double doctorId[]=new double[1];
    static double treatmentId[]=new double[1];
    static double billingId[]=new double[1];
    static double review[]=new double[1];
    static double expense1;
    static double expense2;
    static double expense3;
    static double expense4;
    static double expense5;
    static double totalexpense;
    static double totalCost;
    static double labCost;
    static double tax;
    static double grandTotal;

    static void writeToFile() {
        Scanner scanner = new Scanner(System.in);
        System.out.print("Enter data to write to file: ");
        String data = scanner.nextLine();

        try (FileWriter writer = new FileWriter(FILENAME)) {
            writer.write(data);
            System.out.println("Data written to file successfully.");
        } catch (IOException e) {
            System.out.println("Error writing to file: " + e.getMessage());
        }
    }
    static void PatientRecords(){
    Scanner s=new Scanner(System.in);
            System.out.println("=====THANK YOU FOR MAKING YOUR
DECISION!!!!!!!======");
                        System.out.println("*************************");
                        System.out.println("Enter your First Name below:");
```

```
                        FirstName=s.nextLine();
                        System.out.println("*****************************");
                        System.out.println("Enter your last name:");
                        lastName=s.nextLine();
                        System.out.println("*****************************");
                        System.out.println("Enter the diagnose:");
                        Diagnose=s.nextLine();

System.out.println("*********************************");
                        System.out.println("Enter your Email:");
                        Email=s.nextLine();

System.out.println("*********************************");
                        System.out.println("Enter your Phone Number:");
                        for(int i=0;i<1;i++){
                    phoneNumber[i]=s.nextDouble();
                        }

System.out.println("*********************************");
                        System.out.println("Enter your Date Of Birth");
                        DateofBirth=s.nextInt();
                        System.out.println("*********************************");
                        System.out.println("Enter your password:");
                        for(int i=0;i<1;i++){
                    phoneNumber[i]=s.nextInt();
                }
                            System.out.println("Is the patients procedure can be
'pending/Done':");
                            Procedure=s.nextLine();
                            if (Procedure == "Pending"){
                                    System.out.println("Valid option");
                                    }
                            else if(Procedure == "Done"){
                                System.out.println("Valid Option");
                            }
                            System.out.println("DISPLAYED INFORMATION");

System.out.println("*************************************");
                        System.out.println(Arrays.toString(IDNumber));
                        System.out.println("--------------------------");

                        System.out.println("Your Name is:"+FirstName);
                        System.out.println("--------------------------");
```

```
                        System.out.println("Your Surname is:"+lastName);
                        System.out.println("--------------------------");

                        System.out.println("Patients Diagnose is:"+Diagnose);
                        System.out.println("-------------------------------");

                        System.out.println("Patients Email is:"+Email);
                        System.out.println("---------------------------------");

                        System.out.println(Arrays.toString(phoneNumber));
                        System.out.println("---------------------------------");

                        System.out.println("Patients Date of Birth"+DateofBirth);
                        System.out.println("-----------------------------------
");


                        System.out.println(Arrays.toString(password));

System.out.println("*************************************");
                        System.out.println("===\n THANK YOU AND COME AGAIN
LATER....======");

}
    static void DoctorInformation() {
        Scanner s = new Scanner(System.in);
        System.out.println("=====\n THANK YOU FOR MAKING YOUR CHOICE......====");
        System.out.println("====\n ANSAWR ALL THE QUESTIONS......======");
        System.out.println("*****************************************");
        System.out.print("Enter Doctor name: ");
         FirstName = s.nextLine();
         System.out.println("*************************************");
        System.out.print("Enter Doctor gender: ");
        gender = s.nextLine();
        System.out.println("*****************************************");
        System.out.print("Enter Doctor occupation: ");
        occupation = s.nextLine();
        System.out.println("*****************************************");
        System.out.print("Enter availability time (HH:MM:SS): ");
        availabilityTime = s.nextLine();
        System.out.println("*****************************************");
        System.out.print("Enter break time (HH:MM:SS): ");
        breakTime = s.nextLine();
        System.out.println("*****************************************");
```

```
        System.out.print("Enter the Doctors shift : ");
        shift = s.nextLine();

System.out.println("**************************************************************
");
            System.out.println("WE ARE ALL AT YOUR BEST INTEREST...");

System.out.println("************************************************");
            System.out.println("--- WELCOME TO OUR WAGE CALCULATOR... ---");

System.out.println("************************************************");
            System.out.print("Enter worker type (Skilled, Semi-skilled,
Unskilled) : ");
            workerType = s.nextLine();

System.out.println("************************************************************");
            System.out.println("Skilled R54000 per month");
            System.out.println("*********************************");
            System.out.println("Semi-skilled R20500 per month");
            System.out.println("*********************************");
            System.out.println("Unskilled as a start up R9500 per month");
            System.out.println("*****************************************");
            System.out.println("Enter your first expense");
            expense1=s.nextDouble();
            expense2=s.nextDouble();
            expense3=s.nextDouble();
            expense4=s.nextDouble();
            expense5=s.nextDouble();

System.out.println("************************************************");
            System.out.println("Your result is:");
            totalexpense=expense1+expense2+expense3+expense4+expense5;
            System.out.println("Your total expense:"+totalexpense);

System.out.println("************************************************");
  System.out.println("====\nDISPLAY INFORMATION:");
        System.out.println("****************************************");
            System.out.println("The Doctors Name is: " + FirstName);
            System.out.println("---------------------------------");

            System.out.println("The Gender of the Doctor: " + gender);
            System.out.println("---------------------------------");

            System.out.println("The Occupation of the Doctor: " + occupation);
```

```
            System.out.println("-----------------------------------------");

            System.out.println("The Availability Time of the Doctor: " +
availabilityTime);
            System.out.println("-----------------------------------------------
---------");

            System.out.println("The Break Time for the Doctor is: " + breakTime);
            System.out.println("-----------------------------------------------
-");

            System.out.println("The Shift time of the doctor is: " + shift);
            System.out.println("-----------------------------------------");

            System.out.println("=====\n THANK YOU...=====");

        }
    static void MedicalTreatments(){
            Scanner s=new Scanner(System.in);
            System.out.println("====\n THANK YOU FOR CHOOSING YOUR
OPTION...=====");
                System.out.println("Enter your ID number:");
                for(int i=0;i<1;i++){
                    IDNumber[i]=s.nextDouble();
                }
                System.out.println("***************************");
                System.out.println("Enter your prescription name");
                prescriptionName=s.nextLine();
                System.out.println("*******************************");
                System.out.println ("Enter your diagnose below: ");
                Diagnose=s.nextLine();
                System.out.println("*********************************");
                System.out.println("State if you had any encounters with a
medical problem before below:");
                prescriptionName=s.nextLine();

System.out.println("************************************************************
***");
                System.out.println("What is your blood type:");
                bloodType=s.nextLine();

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

```
                System.out.println("Do you want to know the risks of the
medical treatment:");
                Risks=s.nextLine();

System.out.println("*****************************************************");
                System.out.println("Do you want to know the effectiveness of
the medication:");
                effects=s.nextLine();

System.out.println("*********************************************************")
;
                System.out.println("How long should the treatment take:");
                for(int i=0;i<1;i++){
                    Number[i]=s.nextDouble();
                }

System.out.println("*********************************************************")
;
                System.out.println("Is evidence required for this treatment:");
                Evidence=s.nextLine();

System.out.println("*********************************************************");
                System.out.println("Are there any current pills you are
taking");
                for(int i=0;i<1;i++){
                    Pills[i]=s.nextLine();
                }
                System.out.println("************************************");

                System.out.println("Displayed information:");
                System.out.println("------------------------------------");

                System.out.println(Arrays.toString(IDNumber));
                System.out.println("************************************");

                System.out.println("This is the prescription
name"+prescriptionName);
                System.out.println("----------------------------------------
----");

                System.out.println("This is your blood Type"+bloodType);
                System.out.println("----------------------------------------
--");
```

```
                System.out.println("This is your risk"+Risks);
                System.out.println("-----------------------------------==--------
----------");

                System.out.println("These are the effects"+effects);
                System.out.println("-----------------------------------------
----------");

                System.out.println("This is how long your procedure would
take"+Number);
                System.out.println("-----------------------------------------
-----------");

                System.out.println("These are you your results"+Pills);
                System.out.println("-----------------------------------------
---------");

                System.out.println("=====\n THANK YOU AND PLEASE COME BACK
AGAIN OR CLICK EXIT......======");

System.out.println("**************************************************************
**********");
    }
    static void BillingData(){
        Scanner s=new Scanner(System.in);
        System.out.println("===\nTHANK YOU FOR CHOOSING YOUR OPTION...======");
    System.out.println("Enter Patient ID:");
    for(int i=0;i<1;i++){
        IDNumber[i]=s.nextDouble();
    }
        System.out.println("********************************");
    System.out.println("Enter Patient Name:");
    FirstName = s.nextLine();
        System.out.println("********************************");
    System.out.println("Enter Procedure Done:");
    Procedure = s.nextLine();
        System.out.println("********************************");
    System.out.println("Enter Procedure Cost:");
    procedureCost = s.nextDouble();
        System.out.println("********************************");
    System.out.println("Enter Medication Cost:");
    medicationCost = s.nextDouble();
```

```
        System.out.println("**********************************");
    System.out.println("Enter Lab Test Cost:");
    labCost = s.nextDouble();
        System.out.println("**********************************");
    totalCost = procedureCost + medicationCost + labCost;
    tax = totalCost * 0.05;
    grandTotal = totalCost + tax;
        System.out.println("****************************************");
    System.out.println("===\nBILLING INFORMATION====");
    System.out.println(Arrays.toString(IDNumber));
        System.out.println("**********************************");

    System.out.println("Patient Name: " + FirstName);
        System.out.println("**********************************");

    System.out.println("Procedure: " + Procedure);
        System.out.println("**********************************");

    System.out.printf("Procedure Cost: $%.2f%n"+ procedureCost);
        System.out.println("**********************************");

    System.out.printf("Medication Cost: $%.2f%n"+ medicationCost);
        System.out.println("**********************************");

    System.out.printf("Lab Test Cost: $%.2f%n"+ labCost);
        System.out.println("**********************************");

    System.out.printf("Subtotal: $%.2f%n"+ totalCost);
        System.out.println("**********************************");

    System.out.printf("Tax (5%%): $%.2f%n"+ tax);
        System.out.println("**********************************");

    System.out.printf("Total Amount Due: $%.2f%n"+ grandTotal);
        System.out.println("**********************************");

        System.out.println("===\nTHANK YOU AND COME AGAIN....=====");

    }
    static void AppointmentsSchedule(){
    Scanner s=new Scanner(System.in);
```

```
    System.out.println("===\nTHANK YOU FOR SELECTING APPOINTMENT SCHEDULE ENTRY
===");

System.out.println("*****************************************************");
    System.out.println("Enter your effects if multiple type in :");
    effects=s.nextLine();

System.out.println("*************************************************************
*****************************");
        System.out.println("What is your method of payment");
        Method=s.nextLine();
        System.out.println("************************************");
        System.out.println("What is the date of the payment(HH:MM:SS)");
        payment=s.nextLine();
        System.out.println("What is the card number max 10 digits");
                for(int i=0;i<10;i++){
                      Cardnumber[i]=s.nextDouble();
                  }
        System.out.println("****************************************");
    System.out.print("Enter Appointment ID: ");
    appointmentId = s.nextDouble();
               System.out.println("*****************************");

    System.out.print("Enter Patient ID: ");

    for(int i=0;i<6;i++){
                      patientId[i]=s.nextDouble();
                  }
               System.out.println("*****************************");

    System.out.print("Enter Doctor ID: ");
    for(int i=0;i<6;i++){
                      doctorId[i]=s.nextDouble();
                  }
               System.out.println("*****************************");

    System.out.print("Enter Treatment ID: ");
    for(int i=0;i<6;i++){
                      treatmentId[i]=s.nextDouble();
                  }
               System.out.println("*****************************");

    System.out.print("Enter Billing ID: ");
```

```
    for(int i=0;i<6;i++){
                    billingId[i]=s.nextDouble();
                }
            System.out.println("****************************");

    System.out.println("---\nAppointment Details ---");
    System.out.println("Appointment ID: " + appointmentId);
        System.out.println("---------------------------------------");

    System.out.println(Arrays.toString(doctorId));
        System.out.println("---------------------------------------");

    System.out.println(Arrays.toString(patientId));
        System.out.println("-----------------------------------------");

    System.out.println(Arrays.toString(treatmentId));
        System.out.println("-----------------------------------------");

    System.out.println(Arrays.toString(billingId));
        System.out.println("-----------------------------------------");

    System.out.println(Arrays.toString(review));
        System.out.println("-----------------------------------------");

        System.out.println("====\n THANK YOU....=====");


}
    static void Exit(){
        Scanner s=new Scanner(System.in);
        System.out.println("====WE ARE GRAETFULL FOR YOUR VISIT=====");
        System.out.println("****************************************");
        System.out.println("====WE HOPE YOU COME BACK AGAIN=====");
        System.out.println("****************************************************");
        System.out.println("====TO CONTINUE PLESAE CLICK MENU OR EXIT TO
QUIT====");

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

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

        System.out.println("WELCOME TO THE MENU BAR");
            System.out.println("********************************");
```

```
            System.out.println("Enter 1 for MENU");
            System.out.println("-------------------------------");
            System.out.println("Enter 2 for EXIT");

System.out.println("*********************************************");
            System.out.println("Enter your Option 1-2");
            Option=s.nextInt();

System.out.println("*********************************************");
            switch(Option){
              case 1:
                menu();
                break;
            case 2:
                Exit();
                break;
            default:
                System.out.println("Invalid option...Please choose again...");

            }
    }
    static void menu(){
Scanner s=new Scanner(System.in);
System.out.println("=====WELCOME TO ULTRA CARE GENERAL HOSPITAL======");
System.out.println("========WHERE YOUR HEALTH IS OUR CONCERN========");

System.out.println("################################################");
            System.out.println("WELCOME TO THE MENU BAR");
            System.out.println("*******************************");
            System.out.println("Enter 1 for PATIENT RECORDS");
            System.out.println("--------------------------------");
            System.out.println("Enter 2 for DOCTOR INFORMATION");
            System.out.println("--------------------------------");
            System.out.println("Enter 3 for MEDICAL TREATMENTS");
            System.out.println("--------------------------------");
            System.out.println("Enter 4 for BILLING DATA");
            System.out.println("--------------------------------");
            System.out.println("Enter 5 for APPOINTMENTS SCHEDULE");
            System.out.println("--------------------------------");
            System.out.println("Enter 6 for MENU");
            System.out.println("--------------------------------");
            System.out.println("Enter 7 for EXIT");
```

```
System.out.println("*********************************************");
            System.out.println("Enter your Option 1-7");
            Option=s.nextInt();

System.out.println("*********************************************");
            switch(Option){
            case 1:
                PatientRecords();
                break;
            case 2:
                DoctorInformation();
                break;
            case 3:
                MedicalTreatments();
                break;
            case 4:
                break;
            case 5:
                AppointmentsSchedule();
                break;
            case 6:
                menu();
                break;
            case 7:
                Exit();
                break;
            default:
                System.out.println("Invalid option...Please select another
option...");

    }

}

    static void readFromFile() {
        try (BufferedReader reader = new BufferedReader(new
FileReader(FILENAME))) {
            String line;
            System.out.println("Data from file:");
            while ((line = reader.readLine()) != null) {
                System.out.println(line);
            }
```

```
        } catch (IOException e) {
            System.out.println("Error reading from file: " + e.getMessage());
        }
    }


    static void run() {
        Scanner scanner = new Scanner(System.in);
        while (true) {
            System.out.println("1. Write to file");
            System.out.println("2. Read from file");
            System.out.println("3. Exit");
            System.out.print("Choose an option: ");
            int option = scanner.nextInt();
            scanner.nextLine();

            switch (option) {
                case 1:
                    writeToFile();
                    break;
                case 2:
                    readFromFile();
                    break;
                case 3:
                    System.out.println("Exiting...");
                    return;
                default:
                    System.out.println("Invalid option. Please choose again.");

            }
        }
    }

    public static void main(String[] args) {
    do{
        run();
        menu();
       }while(Option!=100);
    }

}
```

DOCUMENTATION FOR HOSPITAL MANAGEMENT

Within the process of writing the “PATIENT RECORDS” code. I played a role in conducting my own research to align everybody to understand how to do their part withing the process of the code. Continuous calls were made error checking was conducted to provide the finale result. Questions were made to know more about the patients history and during their process for getting medical assistance. As the group leader I ensured that there was no struggle within the conducting research. This helped our code very a lot to prevent confusions.

The code was conducted neatly with effort and predicted errors were prevented in that process. The idea of the code was to ensure that with arrays and the scanner that were used could be displayed after the information was inserted. This allowed pour patient to be able to double check for their errors. This allowed our code to be more broard and not just fixed on a singular basis. That we just learned in class. The very same process was done for our questions just to broaden the effect, although some of the questions were clues from our Xampp application project to make it a more broad aspect. This reduced all our mental frustration as well.

As part of the code the integer indication was no way it could be excluded for it made our code less riskier of errors. The double and float variable was very risky for our code. Hence why I concluded to the integer. This conclusion saved the code immensely. The errors were affecting our switch case method at most. The Scanner method was placed under all our void capture method to cause no confusion. This all helped our code immensely and prevented any mental frustration.

Doctor Information Management System in Java .The Doctor Information App is a Java-based application designed to interact with a database for managing doctor records within a hospital management system. The application follows a user-interactive, menu-driven approach via the console, providing a basic yet practical example of how Java can be used to build a functional database application. This reflects more on our projects information.

Upon launching, the application establishes a connection with the database using the provided credentials. It handles potential SQL exceptions gracefully, informing the user if the connection fails. The main interface offers four options: viewing all doctors, adding a new doctor, searching for a doctor by ID, and exiting the program. This structure allows for clear and easy navigation, making it user-friendly for both staff and developers. The view All Doctors method retrieves and displays all doctors.

It questions for each doctor's details in a readable format, including ID, name, gender, occupation, availability time, break time, and shift. This method reflects how data can be fetched and processed from a Result Set object in Java. The add Doctor method enables users to insert a new doctor into the database. It prompts for user input and uses a prepared statement to prevent SQL injection and ensure type safety. Notably, the time fields require input in the "HH:MM:SS" format and are stored .

Time, showcasing proper data type handling between Java and SQL. If a match is found, the system displays the doctor's details; otherwise. Doctor Information Management System in Java it informs the user that no such record exists. Overall, this application is a solid example of integrating Java with MySQL to manage medical personnel data. It reinforces foundational skills , exception handling, and user interaction, and it can be expanded to include more complex features such as updating or deleting records, or integrating with other hospital modules.

With the hospital management system , there were not as many challenges as anticipated . My duties were to create SQL queries for our database , there were a few mistakes and errors that occurred when doing that , with me not correctly naming and identifying the tables . The whole project is an indication of team work , determination and

hard work , working hand in hand to properly understand how Java can be used or handled in order to create a fully functional database application.

The application also provides proper and easier navigations , which can be used by either system / software developers or staff members. Another obstacle in which i faced was to create medical treatments for our patients. Which meant i had to carefully consider the information of our patients and use my creativity to get fitting treatments most suitable for them . That was a slight challenge because the code had not run for a few times , it had to be a repetition until i figured out what my issue was , and it was the slight fact that i was not terminating at the end of my codes .

The overall experience of creating this specific application educating , and showed us the importance of working as a team to correct each others faults and guide one another , although there were challenges we managed to overcome them by enlightening each other.

THESE ARE DEFINITIONS:

Syntax:

They are a set of rules that govern the structure and form of a programming language, dictating how code is written and organized.

Data Types:

These are categories of data that determine the kind of values a variable can hold (e.g., integers, floating-point numbers, strings).

Variables:

These are considered as named storage locations in a program that can hold values, allowing data to be referenced and manipulated.

Operators:

These are symbols that perform operations on values (e.g., +, -, *, / for arithmetic, ==, != for comparisons).

Control Structures:

These are statements that control the flow of execution in a program, including conditional statements (if/else) and loops (for, while).

Functions:

These are blocks of code that perform specific tasks and can be called from other parts of the program.

Object-Oriented Programming (OOP):

It is a programming paradigm that structures code around objects, which encapsulate data and methods.

API (Application Programming Interface):

It is a set of rules and specifications that allow different software systems to communicate and exchange data.

Arrays:

They are considered to be data structures that store collections of elements of the same data type.

Classes:

They are considered to be lueprints for creating objects in OOP languages, defining the properties and behaviors of those objects.

Loops:

These are control structures that allow a block of code to be executed repeatedly, either a specific number of times or until a condition is met.

Conditional Statements:

These are control structures that allow different code paths to be executed based on whether a condition is true or false.

Bugs:

These are errors in code that cause unexpected behavior or prevent a program from running correctly.

Git:

It is a version control system that can allow developers to track changes to code over time, collaborate effectively, and manage different versions of a project.

IN CONCLUSION:

advanced programming means learning how to write better and smarter code. It's not just about making a program work, but making it work fast, safely, and in a way that's easy to fix or change later. You learn how to organize your code, solve harder problems, and make your programs run at the same time without crashing. It also includes checking your code for mistakes and protecting it from hackers. Advanced programming helped us become a stronger, more professional programmer group.

Advanced programming also teaches you how big software systems are built and managed. You learn about software design, which is like making a plan before you build something. This helps you break big problems into smaller parts, so the code is easier to

understand and work with. You also use tools and techniques that professionals use to keep code clean, well-organized, and ready for updates when needed.

Another important part of advanced programming is working with other people. In real projects, many programmers work together, so it's important to write code that others can read and understand. You also learn how to use version control tools like Git, which help teams keep track of changes in the code. Communication, teamwork, and good habits become just as important as writing the code .