Algorithm :

Step 1 :   Take input from user for username and password and validate whether they are correct or not. If they are correct then continue with the application else display a error message.

Step 2 :   After validating show an Mainmenu to user and ask for an option to enter property Tax, Vehicle Tax, Total or exit from the Application.

Step 3 :   If the option is Property Tax then display the corresponding options like add property details, calculate property Tax, Display all Properties, or back to Main menu.

Step 4 :   Based on the option selected by the user follow the corresponding operations as described. If the user has selected the option as back to Main menu then show the user the Main menu options.

Step 5 :   Similarly if the user has selected the option Vehicle Tax then display the following options Add vehicle details, Calculate vehicle tax, Display all Vehicles, Back to Main menu.

Step 6 : Based on the option selected by the user follow the corresponding operations as described. If the user has selected the option as back to Main menu then show the user the Main menu options.

Step 7 :   If the user has selected the total option then display the required data as mentioned.

Step 8 : If the user has selected the wrong option then ask the user to enter the correct option.

Step 9 : If the user has selected the exit option then display a good bye message and exit from the application.

Source Code :

//Main

```java
package TaxCalculation;

import java.util.Scanner;

 class Mainmenu{
```

```java
    public Mainmenu() {
        while(true) {
        System.out.println("1.PROPERTY TAX");
        System.out.println("2.VEHICLE TAX");
        System.out.println("3.TOTAL");
        System.out.println("4.EXIT");
        System.out.println("Enter your choice");
        Scanner sc = new Scanner(System.in);
        int ch=sc.nextInt();
            switch(ch) {

            case 1 :   propertyMenu pm= new propertyMenu();
                        pm.propertyMenu();
                        break;


            case 2 :  VehicleMenu v = new VehicleMenu();
                        break;

            case 3 :  Display();
                        break;
            case 4 :  System.out.println("Thanks visit again");
                        System.exit(0);
                        break;
            default : System.out.println("enter correct choice");
                        }
        }
        }

    private void Display() {

        int id=propertyMenu.propertyQuantity();
        double ptot=propertyMenu.propertyTotal();
        int t=VehicleMenu.vehicleQuantity();
        double vtot=VehicleMenu.VehicleTotal();

        System.out.println("+-------------------------------------------
-------------------------------+");
        System.out.println("| SR. NO.          PARTICULAR
    QUANTITY   TAX|");
        System.out.println("+-------------------------------------------
-------------------------------+");
        System.out.println("| 1            PROPERTIES          "+id+"
    "+ptot+"|");
        System.out.println("| 2            VEHICLES
"+t+"        "+vtot+"|");
```

```java
        System.out.println("+------------------------------------
-------------------------------+");
        System.out.println("|    TOTAL           ----------
"+(id+t)+"           "+(ptot+vtot)+"|");
        System.out.println("+------------------------------------
-------------------------------+");



    }

 }

public class TaxMain {

    public static void main(String args[])
    {
        System.out.println("+--------------------------------+");
        System.out.println("| WELCOME TO TAX CALCULATION APP |");
        System.out.println("+--------------------------------+");
        System.out.println("PLEASE LOGIN TO CONTINUE");
        System.out.print("USERNAME - ");
        Scanner sc = new Scanner(System.in);
        String uname=sc.next();
        System.out.print("PASSWORD - ");
        String pass=sc.next();
        if(uname.equals("admin") && pass.equals("admin123"))
        {
            Mainmenu menu= new Mainmenu();
        }
        else
        {
            System.out.println("you  have  entered  wrong  data  try
again");

        }

    }
}


    // Property menu

package TaxCalculation;

import java.util.Scanner;
```

```java
public class propertyMenu {
      static int id,pid;
     private static double ptot;
     static int[] base = new int[10];
     static int[] area = new int[10];
     static int[] age = new int[10];
     static double[] pt = new double[10];
     static String[] land = new String[10];
     static int propertyQuantity() {
          return id;
     }
     static double propertyTotal() {
          return ptot;
     }

     private      static      void      display()      throws
ArrayIndexOutOfBoundsException{

System.out.println("=================================================
================================================");
          System.out.println("id BUILD UP AREA        BASE        PRICE
     AGE(YEARS)           IN CITY    PROPERTY TAX");

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

          for(int i=1;i<=id;i++) {
          System.out.printf("%1d      %14d   %20d   %16d   %18s   %23.2f
\n",i,area[i],base[i],age[i],land[i],pt[i]);
          }

System.out.println("=================================================
================================================");
}
     static void propertyMenu()  {


          Scanner sc = new Scanner(System.in);
          while(true) {
           System.out.println("1. ADD PROPERTY DETAILS");
           System.out.println("2.CALCULATE PROPERTY TAX");
           System.out.println("3.DISPLAY ALL PROPERTIES");
           System.out.println("4.BACK TO MAIN MENU");
           System.out.println("enter your choice");
           int c =sc.nextInt();
```

```java
switch(c) {

    case 1 : System.out.println("enter the property details -");
             System.out.println("enter the property id -");

             id = sc.nextInt();
             System.out.println("enter the base value of the land");

             base[id] =sc.nextInt();
             System.out.println("enter the build up area of the land");

             area[id] = sc.nextInt();
             System.out.println("enter the age of land in years");

             age[id] = sc.nextInt();
             System.out.println(" is the land located in city? Y: Yes, N: No");

             Land[id] =sc.next();
             if(Land[id].equals("Y")) {

                 pt[id]=(area[id]*age[id]*base[id])+((1/2)*area[id]);

             }
             else {

                 pt[id]=area[id]*age[id]*base[id];

             }
             System.out.println("Values entered successfully");

             ptot = pt[id]+ptot;
             break;
    case 2 :
             display();
             System.out.println("Enter the Property id to Calculate Tax -");

             pid = sc.nextInt();
             System.out.println("Property Tax for Property id -"+pid+"is"+pt[id]);

             break;
    case 3 : display();
             break;

    case 4 : Mainmenu m = new Mainmenu();
```
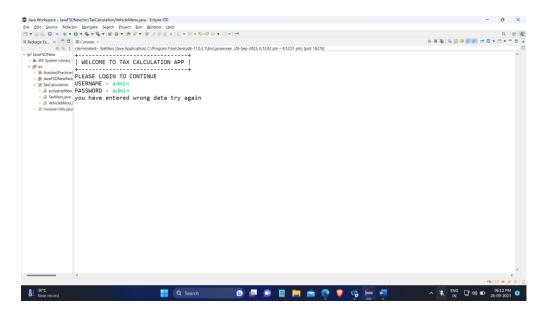
```java
                        default  :   System.out.println("enter   correct
choice");
                            }

        }
        }
        }

        //vehicle menu

package TaxCalculation;

import java.util.Scanner;

public class VehicleMenu {
        private static int t=1,rid,s=0;
        private static double vtot;
        static int[] reg = new int[10];
        static int[] velocity = new int[10];
        static int[] seats = new int[10];
        static int[] temp = new int[10];
        static double[] cost = new double[10];
        static double[] vt = new double[10];
        static String[] brand = new String[10];
        static String[] type = new String[10];
        public VehicleMenu()
        {
            Scanner sc = new Scanner(System.in);
            while(true) {
            System.out.println("1.ADD VEHICLE DETAILS");
            System.out.println("2.CALCULATE VEHICLE TAX");
            System.out.println("3.DISPLAY ALL VEHICLES");
            System.out.println("4.BACK TO MAIN MENU");
            System.out.println("enter your choice");
            int c =sc.nextInt();
                switch(c) {
                case  1  :    System.out.println("ENTER   THE   VEHICLE
REGISTRATION NUMBER -");
                            reg[t]= sc.nextInt();
                            System.out.println("ENTER   BRAND   OF   THE
VEHICLE -");
                            brand[t] = sc.next();
                            System.out.println("ENTER    THE    MAXIMUM
VELOCITY OF THE VEHICLE(KMPH) -");
                            velocity[t] = sc.nextInt();
```

```java
                                System.out.println("ENTER  CAPACITY(NUMBER
OF SEATS) OF THE VEHICLE -");
                                seats[t] = sc.nextInt();
                                System.out.println("CHOOSE   THE   TYPE   OF
THE VEHICLE - \n 1.PETROL DRIVEN \n 2. DIESEL DRIVEN \n 3. CNG/LPG
DRIVEN");
                                temp[t] = sc.nextInt();
                                System.out.println(temp[t]);
                                System.out.println("ENTER   THE   PURCHASE
COST OF THE VEHICLE -");
                                cost[t] = sc.nextDouble();
                                if(temp[t]==1) {
                                        type[t]="Petrol";

vt[t]=velocity[t]+seats[t]+(0.1*cost[t]);
                                }
                                else
                                        if(temp[t]==2) {
                                                type[t]="Diesel";

vt[t]=velocity[t]+seats[t]+(0.11*cost[t]);
                                        }
                                        else
                                        {
                                                type[t]="CNG/LPG";

vt[t]=velocity[t]+seats[t]+(0.12*cost[t]);
                                        }
                                vtot = vt[t]+ vtot;
                                s=t;
                                t++;
                                break;

                case 2 :   System.out.println("ENTER THE REGISTRATION
NO OF VEHICLE TO CALCULATE THE TAX - ");
                                rid = sc.nextInt();
                                for( int i=1;i<=t;i++)
                                {
                                        if(reg[i]==rid) {
                                                System.out.println("VEHICLE
TAX FOR REGISTRATION NO - "+rid+"IS"+vt[i]);
                                        }
                                        else {

System.out.println("REGISTRATION NO NOT FOUND");
                                }
```
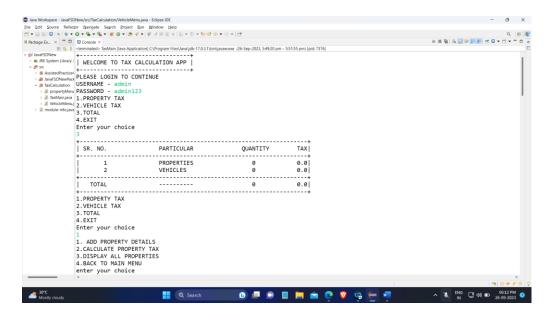
```java
                    }
                case 3 :   display();
                        break;
                case 4 :   Mainmenu m = new Mainmenu();
                        break;
                default   :   System.out.println("ENTER    THE    CORRECT
CHOICE");
                }
        }
    }
    private void display() {

    System.out.println("=============================================
================================================================
==========");
        System.out.println("REGISTRATION NO            BRAND
    MAX. VELOCITY              NO OF SEATS     VEHICLE TYPE        PURCHASE
COST    VEHICLE TAX");

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

        for(int i=1;i<t;i++) {
        System.out.printf("%1d  %25s  %17d  %20d  %20s  %17.2f  %16.2f
\n",reg[i],brand[i],velocity[i],seats[i],type[i],cost[i],vt[i]);
        }

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

    }
    public static int vehicleQuantity() {
        return s;
    }
    public static double VehicleTotal() {

        return vtot;
    }

}
```

Output :

Screenshot for wrong login data

Screenshot for correct login data

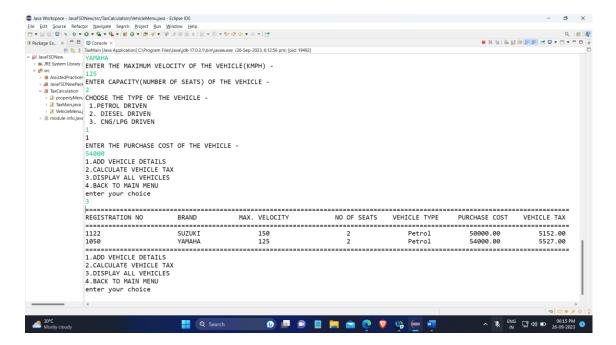Screenshot for 1st property tax data

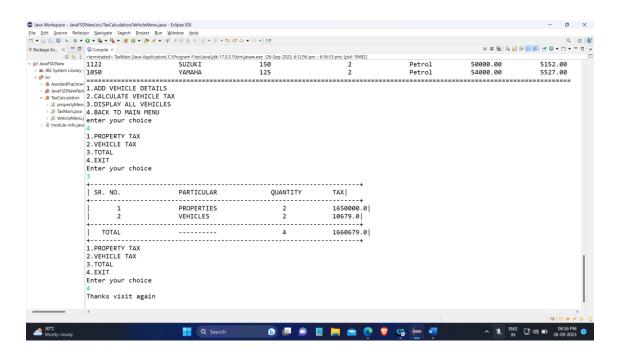screenshot for 2nd property tax data

Screenshot for Display of property tax data

screenshot for Vehicle Data

screenshot for vehicle data display

screenshot for total tax display and Exiting Application