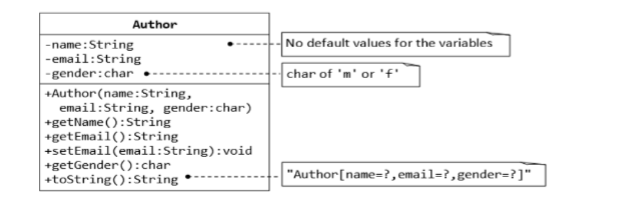
**Ex No 2 ARRAYS AND CLASSES**

**Date :**

**Aim:**

To execute and verify a Java program that prints all the details of an author and generating the electricity bill depending on the type of consumption.

**1 a**. **Algorithm:**

1.START

2. Import the necessary package: `import java.util.\*;`

3. Define the main class as per usage.

4. Define the `main` method within the class: `public static void main(String[] args) { ... }`

5. Declare necessary for instance `n` to get the number of authors from the user.

6. Create a Scanner object `sc` to read input from the user: `Scanner sc = new Scanner(System.in);`

7. Prompt the user to enter a number: `System.out.println("Enter a number:");`

8. Read the user input and store it in the variable `n`: `n = sc.nextInt();`

9. Using a `for` loop to iterate from 0 to `n` (inclusive) accept the inputs from the user from the given fields.

10. Print the same entered fields using a for loop .

11. Within the class author the following operations are performed: getname(), setname(), getemail(), getgender().

12.Finally the output is printed.

13.STOP

**Program:**

import java.util.Scanner;

public class Test

{

public static void main(String[] args)

{

Scanner sc=new Scanner(System.in);

System.out.println("Enter the number:");

int n=sc.nextInt();

String name,email;

char gend;

author obj[]=new author[n];

for(int i=0;i<n;i++)

{

System.out.println("Enter name :");

name=sc.next();

System.out.println("Enter mail");

email=sc.next();

System.out.println("Enter gender-m or f:");

gend=sc.next().charAt(0);

obj[i]=new author(name,email,gend);

}

for(int i=0;i<n;i++)

{

System.out.println(obj[i]);

}

}

static class author

{

String name,email;

char gend;

author(String n,String e,char g)

{

name=n;

email=e;

gend=g;

}

String getname()

{

return name;

}

String getEmail()

{

return email;

}

char getgender()

{

return gend;

}

public String toString()

{

return "Author:"+name+"Email:"+email+"Gender:"+gend;

}

}

}

**Output:**

Enter a number: 2

Enter name: Raj

Enter mail: [raj200@gmail.com](mailto:raj200@gmail.com)

Enter gender-m or f: m

Enter name: Daisy

Enter mail: [daisy1234@gmail.com](mailto:daisy1234@gmail.com)

Enter gender-m or f: f

1 b. Develop a Java application to generate Electricity bill. Create a class with the following members Consumer no., consumer name, previous month reading, current month reading, type of EB connection (i.e domestic or commercial). Compute the bill amount using the following tariff.

If the type of the EB connection is domestic, calculate the amount to be paid as follows:

First 100 units – Rs. 2 per unit

101-200 units – Rs. 3.50 per unit

201 -500 units – Rs. 5 per unit

> 501 units – Rs. 6 per unit

If the type of the EB connection is commercial, calculate the amount to be paid as

follows:

First 100 units – Rs. 3 per unit

101-200 units – Rs. 5.50 per unit

201 -500 units – Rs. 7 per unit

> 501 units – Rs. 8 per unit

**Algorithm:**

1. START
2. Import the necessary packages.
3. Define the Class and Main Method

3. Declare and initialize the necessary variables.

4. Get the necessary information from the user such as : consumer name, number, connection type ,readings ,etc.

5. Calculate the bill amount as per the connection type.

6. Print the output along with necessary details along with the calculated bill amount.

7.STOP

**Program:**

import java.util.Scanner;

class ElectricityBill {

int conNo;

String conName;

double pMonReading;

double curMonReading;

String conType;

public ElectricityBill(int conNo, String conName, double pMonReading, double curMonReading, String conType) {

this.conNo = conNo;

this.conName = conName;

this.pMonReading = pMonReading;

this.curMonReading = curMonReading;

this.conType = conType;

}

public double calculateBillAmount() {

double unitConsumed = curMonReading - pMonReading;

double bill = 0;

if (conType.equals("domestic")) {

if (unitConsumed <= 100) {

bill = unitConsumed \* 2;

} else if (unitConsumed <= 200) {

bill = 100 \* 2 + (unitConsumed - 100) \* 3.5;

} else if (unitConsumed <= 500) {

bill = 100 \* 2 + 100 \* 3.5 + (unitConsumed - 200) \* 5;

} else {

bill = 100 \* 2 + 100 \* 3.5 + 300 \* 5 + (unitConsumed - 500) \* 6;

}

} else if (conType.equals("commercial")) {

if (unitConsumed <= 100) {

bill = unitConsumed \* 3;

} else if (unitConsumed <= 200) {

bill = 100 \* 3 + (unitConsumed - 100) \* 5.5;

} else if (unitConsumed <= 500) {

bill = 100 \* 3 + 100 \* 5.5 + (unitConsumed - 200) \* 7;

} else {

bill = 100 \* 3 + 100 \* 5.5 + 300 \* 7 + (unitConsumed - 500) \* 8;

}

}

return bill;

}

public void displayBill() {

double bill = calculateBillAmount();

System.out.println("Electricity Bill");

System.out.println("Consumer No.: " + conNo);

System.out.println("Consumer Name: " + conName);

System.out.println("Previous Month Reading: " + pMonReading + " units");

System.out.println("Current Month Reading: " + curMonReading + " units");

System.out.println("Connection Type: " + conType);

System.out.println("Bill Amount: Rs. " + bill);

}

}

public class Main {

public static void main(String[] args) {

Scanner scanner = new Scanner(System.in);

System.out.print("Enter Consumer No.: ");

int conNo = scanner.nextInt();

System.out.print("Enter Consumer Name: ");

String conName = scanner.next();

System.out.print("Enter Previous Month Reading: ");

double pMonReading = scanner.nextDouble();

System.out.print("Enter Current Month Reading: ");

double curMonReading = scanner.nextDouble();

System.out.print("Enter Connection Type (Domestic/Commercial): ");

String conType = scanner.next();

ElectricityBill bill = new ElectricityBill(conNo, conName, pMonReading, curMonReading, conType);

bill.displayBill();

}

}

**Output:**

Enter consumer no: 5567

Enter consumer name: Jack

Enter previous month reading: 253 units

Enter current month reading: 250 units

Enter connection type: Domestic

Electricity Bill

Consumer no: 5567

Consumer name: Jack

Previous reading: 253 units

Current month reading: 250 units

Connection type: Domestic

Bill amount: Rs. 92

|  |  |
| --- | --- |
| **Code/output(15)** |  |
| **Quiz(5)** |  |
| **Record(5)** |  |
| **Total(25)** |  |
| **Initial** |  |

Result :

The given programs were executed and verified by using JAVA.