**Code:**

import java.util.Scanner;

import java.time.\*;

class User{

String username,password,gender;

String ph\_number;

boolean isActive;

Scanner scan =new Scanner(System.in);

LocalDate Date;

User(boolean a){

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

username=scan.next();

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

password=scan.next();

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

gender=scan.next();

System.out.println("Enter Ph no.:");

ph\_number=scan.next();

isActive=a;

}

void print(){

System.out.println("Name:"+username);

System.out.println("Password:"+password);

System.out.println("Gender:"+gender);

System.out.println("Is Active:"+isActive);

System.out.println("Mobhile Number:"+ph\_number);

System.out.println("Created date:"+Date);

}

}

class Standard extends User{

String alias,role;

Scanner scan =new Scanner(System.in);

Standard(){

super(true);

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

alias=scan.next();

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

role=scan.next();

Date=LocalDate.now();

}

void print(){

super.print();

System.out.println("Alias:"+alias);

System.out.println("Role:"+role);

System.out.println();

}

}

class Custom extends User{

String email,securityKey,manager;

Scanner scan =new Scanner(System.in);

Custom(){

super(true);

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

email=scan.next();

System.out.println("Enter Security key: ");

securityKey=scan.next();

System.out.println("Enter Manager status: ");

manager=scan.next();

Date=LocalDate.of(1999, 1, 1);

}

void print(){

super.print();

System.out.println("Email:"+email);

System.out.println("Security Key:"+securityKey);

System.out.println("Manager:"+manager);

System.out.println();

}

}

class Lab\_4{

public static void main(String[] args) {

int d=0;

User []usr=new User [4];

usr[0]=new Standard();

usr[1]=new Standard();

usr[2]=new Custom();

usr[3]=new Custom();

for(User u : usr){

if(u instanceof Standard && u.gender.equals("Female")){

u.print();

d+=1;

}

}

if(d==0){

System.out.println("NO RECORDS FOUND");

}

d=0;

for(User u:usr){

if(u instanceof Custom && ((Custom)u).email.contains("gmail.com") && (u.Date).isBefore(LocalDate.of(2000, Month.JANUARY, 1))){

u.print();

d+=1;

System.out.println();

}

}

if(d==0)

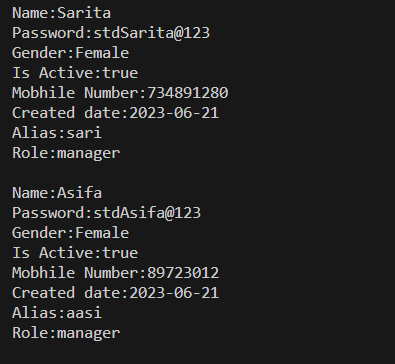
System.out.println("NO RECORDS FOUND");

}

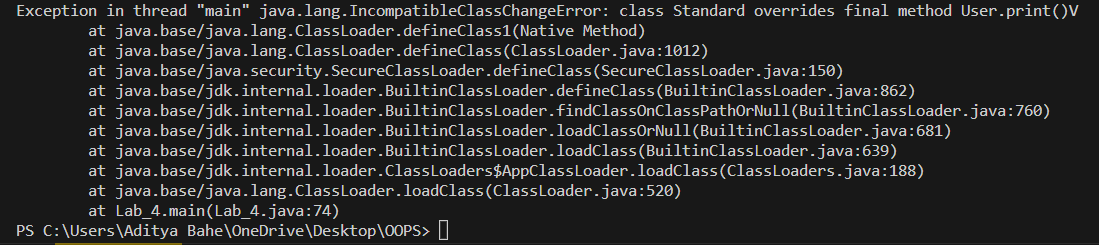
}

**Out-put:**

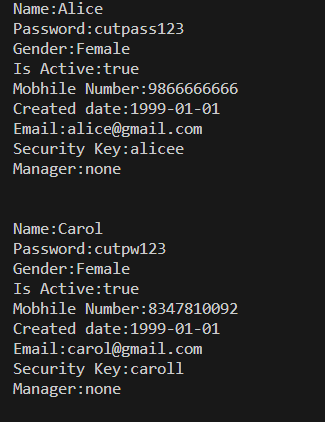
Test-case 1:



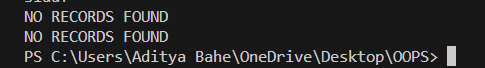
Test-case 2:



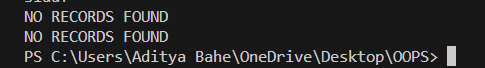
Test-case3:



Test-case4:



Test-case5:



|  |  |  |  |
| --- | --- | --- | --- |
| **Sr no.** | **Input** | **Expected output** | **Actual output** |
|  | When the array contains 2  objects of Female Standard  users | Username: Sarita  Password: stdsarita@123  Mobile Number: 9685746352  Active: true  Gender: Female  Created Date: 2023-05-30  Alias: sari  Role: Manager  Username: Asifa  Password: stdAsifa@567  Mobile Number: 9876543210  Active: true  Gender: Female  Created Date: 2023-05-30  Alias: Aasi  Role: Manager | Username: Sarita  Password: stdsarita@123  Mobile Number: 9685746352  Active: true  Gender: Female  Created Date: 2023-05-30  Alias: sari  Role: Manager  Username: Asifa  Password: stdAsifa@567  Mobile Number: 9876543210  Active: true  Gender: Female  Created Date: 2023-05-30  Alias: Aasi  Role: Manager |
|  | When overriding printUser()  method of base class User | Overridden method is final | Overridden method is final |
|  | When the array contains two  objects of custom users with  Gmail accounts created  before 1 Jan 2000 | Username: Alice  Password: custpass123  Mobile Number: 9866666666  Active: true  Gender: Female  Created Date: 1999-12-31  Email: [alice@gmail.com](mailto:alice@gmail.com)  Security key: alicee  Manager: none  Username: Carol  Password: custpw123  Mobile Number: 985410636  Active: true  Gender: Female  Created Date: 1989-01-11  Email: [carol@gmail.com](mailto:carol@gmail.com)  Security key: caroll  Manager: none | Username: Alice  Password: custpass123  Mobile Number: 9866666666  Active: true  Gender: Female  Created Date: 1999-12-31  Email: [alice@gmail.com](mailto:alice@gmail.com)  Security key: alicee  Manager: none  Username: Carol  Password: custpw123  Mobile Number: 985410636  Active: true  Gender: Female  Created Date: 1989-01-11  Email: [carol@gmail.com](mailto:carol@gmail.com)  Security key: caroll  Manager: none |
|  | When the array does not  contain any objects of Female  Standard users | Print a message  “NO RECORDS FOUND” | Print a message  “NO RECORDS FOUND” |
|  | When the array does not  contain any objects of custom  users with Gmail accounts  created before 1 Jan 2000 | Print a message  “NO RECORDS FOUND” | Print a message  “NO RECORDS FOUND” |