JAVA ASSIGNMENT

DONE BY

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ROLL NO : 90/EIE/180002

REG NO : 100654 of 2018-19

PART : IV SEM : 7TH

DATE : 10.02.2022

Q1 Design a class named person and its two subclasses student and employee.

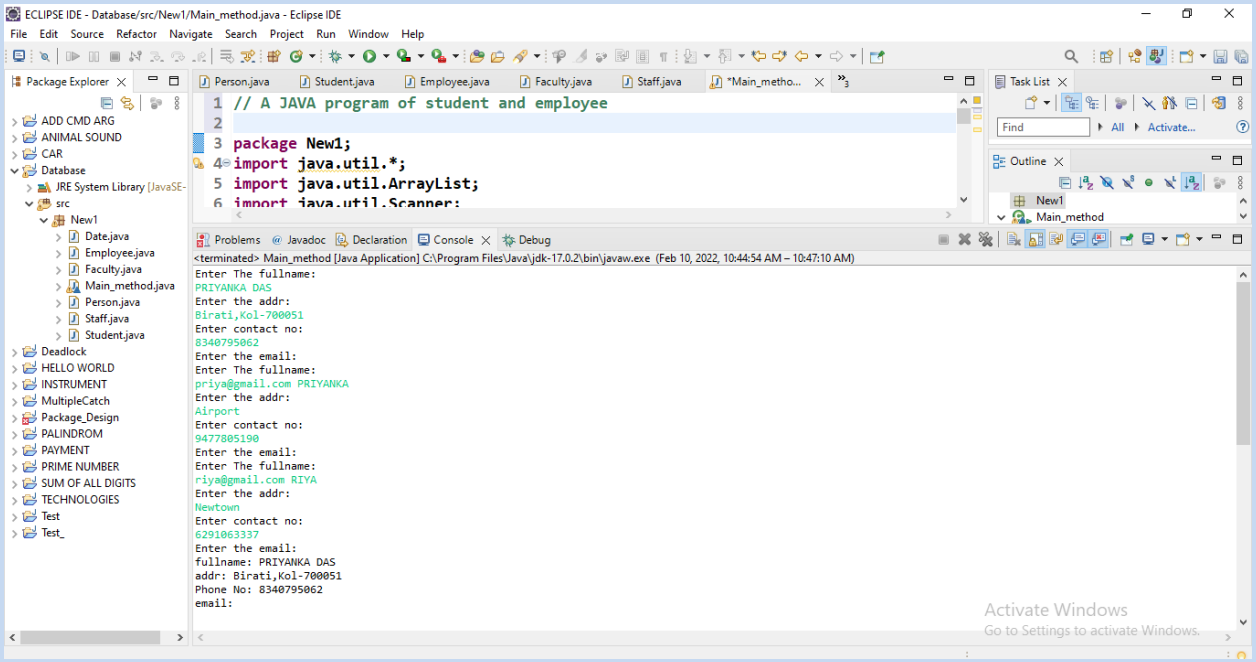
```
package New1;
import java.util.*;
import java.util.ArrayList;
import java.util.Scanner;
class Main_method {
public static void main(String args[])
{
Scanner scan = new Scanner(System.in);
ArrayList<Person> person = new ArrayList<Person>(3);
for (int i = 1; i <= 3; i++) {
System.out.println("Enter The fullname:");
String fullname = scan.nextLine();
System.out.println("Enter the addr:");
String addr = scan.nextLine();
System.out.println("Enter contact no:");
long num = scan.nextLong();
System.out.println("Enter the email:");
String email = scan.nextLine();
Person p = new Person(fullname, addr, num, email);
person.add(p);
}

for (int i = 0; i < person.size(); i++) {
person.get(i).getPerson();
}
person.remove(1);
person.get(1).updatePerson("Priya", "Birati", 9999999,
"priya@gmail.com");
System.out.println("--------After Deleting --------\n");
// view remaining person
for (int i = 0; i < person.size(); i++) {
person.get(i).getPerson();
}
}
}
```

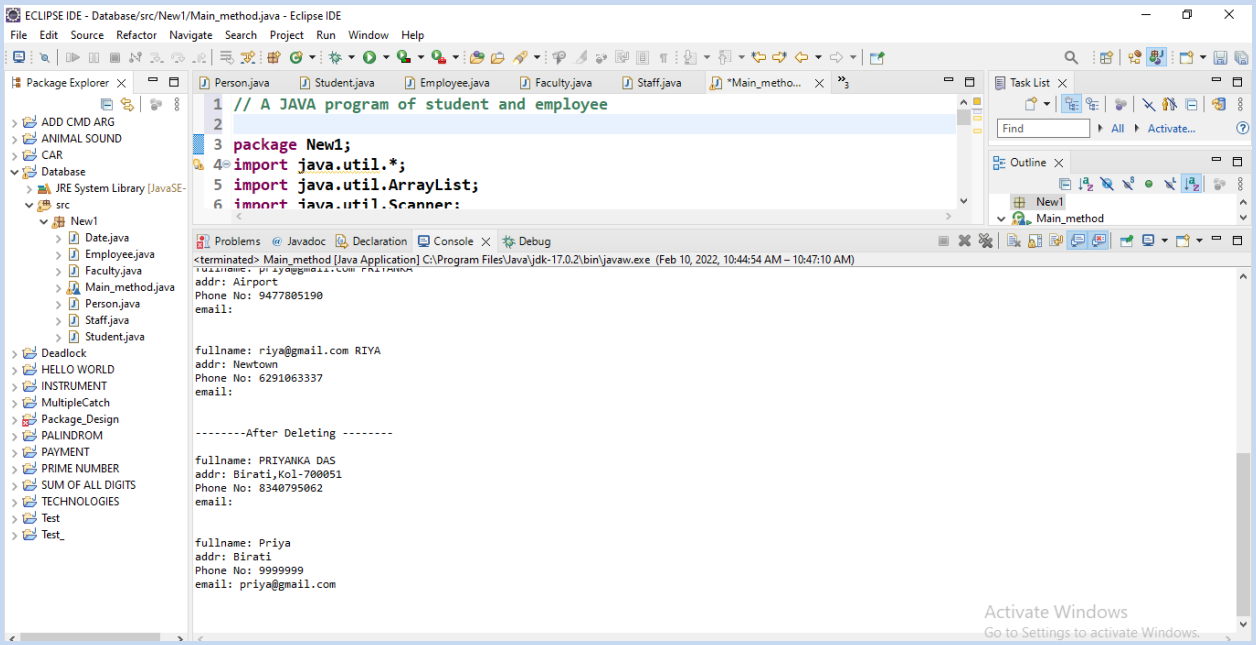
```
package New1;
```

```
public class Person {
     String fullname;
     String addr;
     long phone;
     String email;
     Person() {
     this.fullname = "";
     this.addr = "";
     this.phone = 0;
     this.email = "";
     }
     Person(String n, String addr, long num, String e) {
     this.fullname = n;
     this.addr = addr;
     this.phone = num;
     this.email = e;
     }
     public void getPerson() {
          System.out.println("fullname: " +
this.fullname);
          System.out.println("addr: " + this.addr);
          System.out.println("Phone No: " + this.phone);
          System.out.println("email: " + this.email +
"\n\n");
          }

          public void updatePerson(String n, String
addr, long num,
          String e) {
          this.fullname = n;
          this.addr = addr;
          this.phone = num;
          this.email = e;
          }
          }


package New1;
```

```
public class Student extends Person{
     String stream;
     int rollnumber;
     int regnumber;
}

package New1;

public class Employee extends Person{
     String office;
     int salary;
     String date_of_hired;
}



package New1;

public class Faculty extends Employee{
     int office_hour;
     int rank;
     }

package New1;

public class Staff extends Employee {
     String designation;
}
package New1;

public class Date {
     int year;
     String month;
     int date;
     public String getdate(){
     return year+"/"+month+"/"+date;
     }
}
```

Output :


ECLIPSE IDE - Database/src/New1/Main_method.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Package Explorer
Person.java Student.java Employee.java Faculty.java Staff.java *Main_metho...
1 // A JAVA program of student and employee
2
3 package New1;
4 import java.util.*;
5 import java.util.ArrayList;
6 import java.util.Scanner;
Task List
Outline
New1
Main_method
Problems Javadoc Declaration Console Debug
<terminated> Main_method [Java Application] C:\Program Files\Java\jdk-17.0.2\bin\javaw.exe (Feb 10, 2022, 10:44:54 AM – 10:47:10 AM)
Enter The fullname:
PRIYANKA DAS
Enter the addr:
Birati,Kol-700051
Enter contact no:
8340795062
Enter the email:
Enter The fullname:
priya@gmail.com PRIYANKA
Enter the addr:
Airport
Enter contact no:
9477805190
Enter the email:
Enter The fullname:
riya@gmail.com RIYA
Enter the addr:
Newtown
Enter contact no:
6291063337
Enter the email:
fullname: PRIYANKA DAS
addr: Birati,Kol-700051
Phone No: 8340795062
email:
ADD CMD ARG
ANIMAL SOUND
CAR
Database
JRE System Library [JavaSE-
src
New1
Date.java
Employee.java
Faculty.java
Main_method.java
Person.java
Staff.java
Student.java
Deadlock
HELLO WORLD
INSTRUMENT
MultipleCatch
Package_Design
PALINDROM
PAYMENT
PRIME NUMBER
SUM OF ALL DIGITS
TECHNOLOGIES
Test
Test_
Activate Windows
Go to Settings to activate Windows.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addr: Airport
Phone No: 9477805190
email:
fullname: riya@gmail.com RIYA
addr: Newtown
Phone No: 6291063337
email:
--------After Deleting --------
fullname: PRIYANKA DAS
addr: Birati,Kol-700051
Phone No: 8340795062
email:
fullname: Priya
addr: Birati
Phone No: 9999999
email: priya@gmail.com
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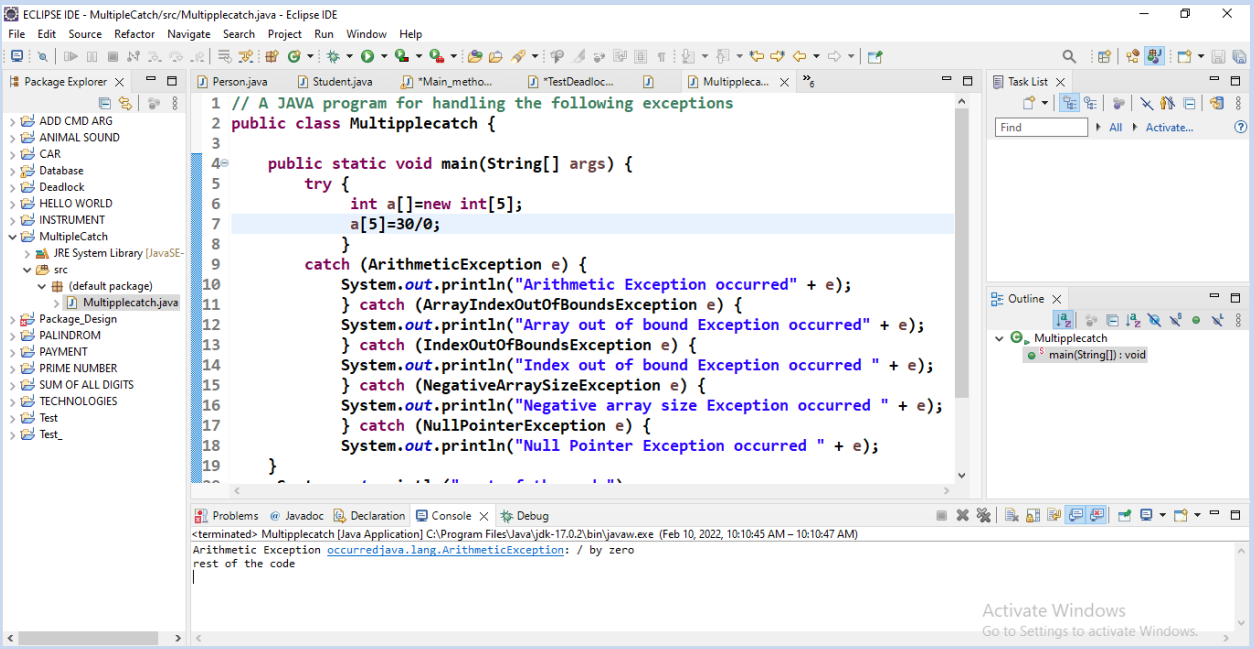
Q2. Design a package for method of string classes.

```
package Design;

public class Package1 {
     public String subString(String s, int start, int end) {
          return s.substring(start, end);
          }

          public int comparison(String s1, String s2) {
          return s1.compareTo(s2);
          }
          public String modify(String s1, char c1, char c2) {
          String s = s1.replace(c1, c2);
          return s;
          }

          public void getDate() {
          Calendar c = Calendar.getInstance();
          System.out.print("Current date is:" + c.getTime());
          }
          public double getFloor(double x) {
          return Math.floor(x);
          }
          public double getLogBaseE(double x) {
          return Math.log(x);
          }
          }

          import packageDesign.*;
          public class Test {
          public static void main(String[] args) {
          Test t = new Test();
          String str1 = "Sun";
          String str2 = "Moon";
          double num = 10.9;
          System.out.println(t.subString(str1, 1, 3));

          System.out.println(t.comparison(str1, str2));
```

```
            double num1 = t.getFloor(num);
            System.out.println(num1);
            System.out.println(t.getLogBaseE(num));
            t.getDate();
            }
            }

      }
```

Q3. A JAVA program for handling exceptions.

```
public class Multipplecatch {

      public static void main(String[] args) {
            try {
                  int a[]=new int[5];
                a[5]=30/0;
                  }
            catch (ArithmeticException e) {
                  System.out.println("Arithmetic Exception
occurred" + e);
                  } catch (ArrayIndexOutOfBoundsException e) {
                  System.out.println("Array out of bound
Exception occurred" + e);
                  } catch (IndexOutOfBoundsException e) {
                  System.out.println("Index out of bound
Exception occurred " + e);
                  } catch (NegativeArraySizeException e) {
                  System.out.println("Negative array size
Exception occurred " + e);
                  } catch (NullPointerException e) {
                  System.out.println("Null Pointer Exception
occurred " + e);
      }
      System.out.println("rest of the code");

}
}
```



Q4. Design a program to handle deadlock using thread.

```
public class TestDeadlock {
        public static void main(String[] args) {
          final String resource1 = "Red";
          final String resource2 = "Blue";

          Thread t1 = new Thread() {
            public void run() {
                synchronized (resource1) {
                 System.out.println("Thread 1: locked resource
1");

                 try { Thread.sleep(100);} catch (Exception e)
{}

                 synchronized (resource2) {
                  System.out.println("Thread 1: locked
resource 2");
                 }
              }
```

```
        }
      };

      Thread t2 = new Thread() {
        public void run() {
          synchronized (resource2) {
            System.out.println("Thread 2: locked resource
2");

            try { Thread.sleep(100);} catch (Exception e)
{}

            synchronized (resource1) {
              System.out.println("Thread 2: locked
resource 1");
            }
          }
        }
      };


      t1.start();
      t2.start();
    }
  }
```