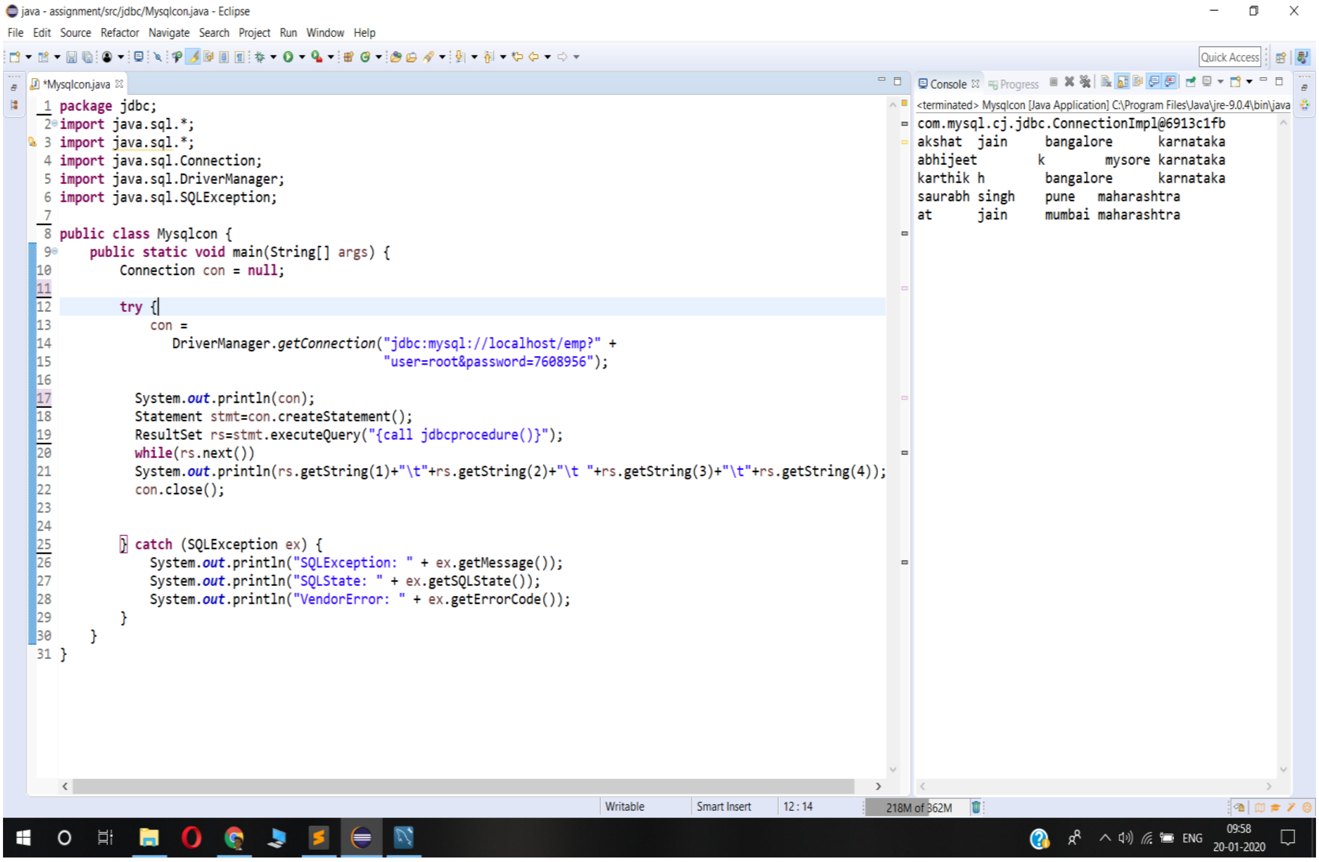
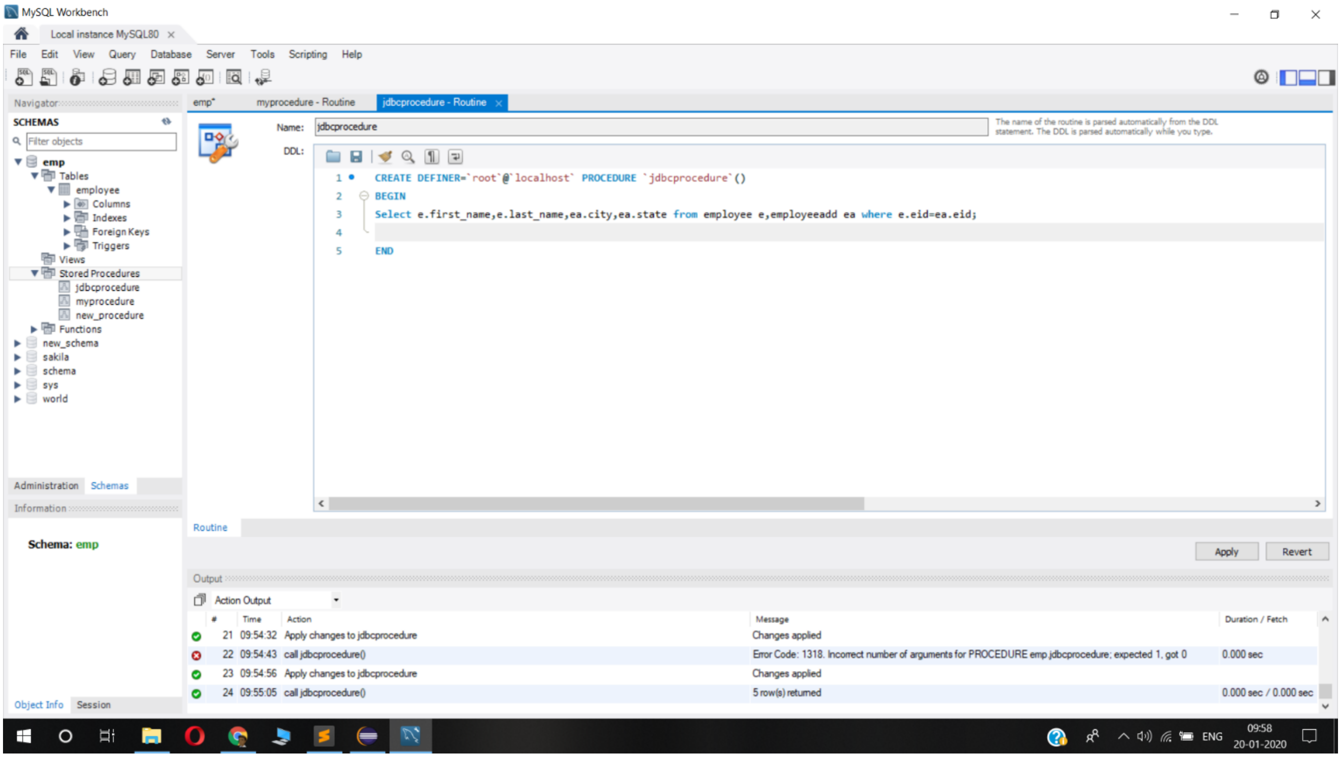
1.Create 2 tables in db having some kind of relationship, create a stored procedure which joins the two tables and returns columns in any db and call it using callable statements and map it to a model object (Use JDBC Methods to make connection)


java - assignment/src/jdbc/Mysqlcon.java - Eclipse
File Edit Source Refactor Navigate Search Project Run Window Help
Quick Access
*Mysqlcon.java
Console
Progress
Writable
Smart Insert
12 : 14
218M of 362M
ENG
09:58
20-01-2020

```java
package jdbc;
import java.sql.*;
import java.sql.*;
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.SQLException;

public class Mysqlcon {
    public static void main(String[] args) {
        Connection con = null;

        try {
            con =
               DriverManager.getConnection("jdbc:mysql://localhost/emp?" +
                                            "user=root&password=7608956");

          System.out.println(con);
          Statement stmt=con.createStatement();
          ResultSet rs=stmt.executeQuery("{call jdbcprocedure()}");
          while(rs.next())
          System.out.println(rs.getString(1)+"\t"+rs.getString(2)+"\t "+rs.getString(3)+"\t"+rs.getString(4));
          con.close();


        } catch (SQLException ex) {
            System.out.println("SQLException: " + ex.getMessage());
            System.out.println("SQLState: " + ex.getSQLState());
            System.out.println("VendorError: " + ex.getErrorCode());
        }
    }
}
```

```
<terminated> Mysqlcon [Java Application] C:\Program Files\Java\jre-9.0.4\bin\java
com.mysql.cj.jdbc.ConnectionImpl@6913c1fb
akshat  jain     bangalore      karnataka
abhijeet        k        mysore karnataka
karthik h        bangalore      karnataka
saurabh singh    pune   maharashtra
at      jain     mumbai maharashtra
```



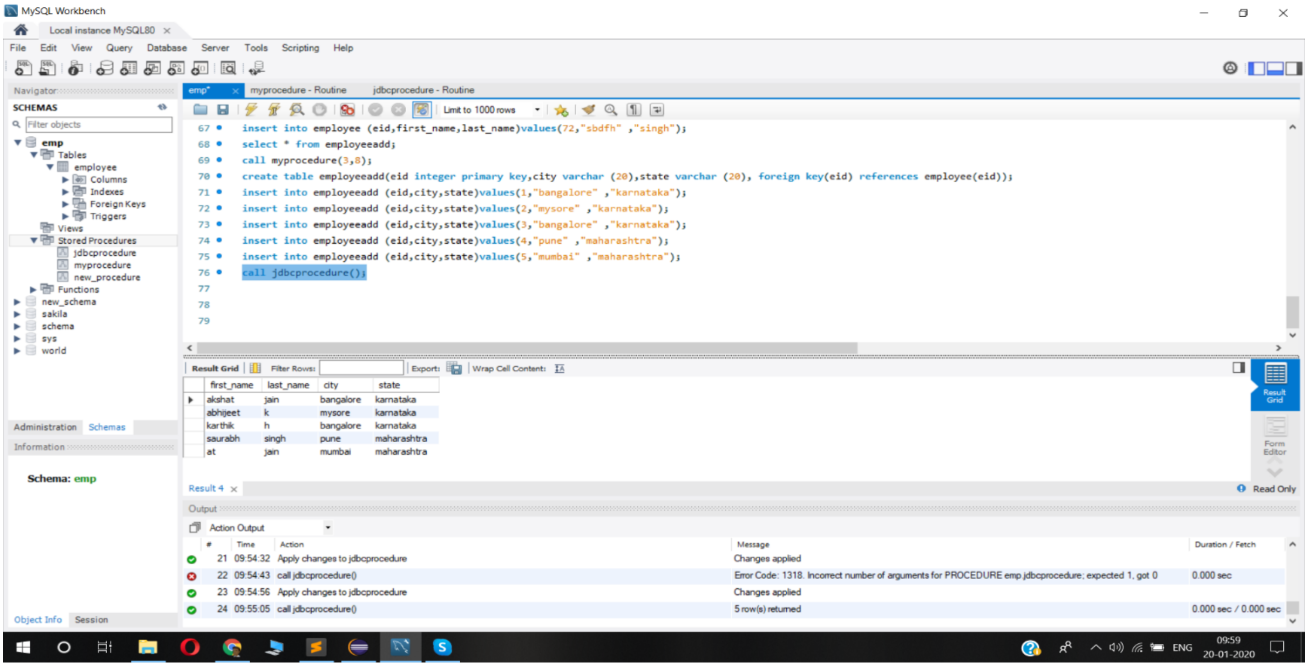
Name: jdbcprocedure

The name of the routine is parsed automatically from the DDL statement. The DDL is parsed automatically while you type.

DDL:

```sql
CREATE DEFINER=`root`@`localhost` PROCEDURE `jdbcprocedure`()
BEGIN
Select e.first_name,e.last_name,ea.city,ea.state from employee e,employeeadd ea where e.eid=ea.eid;

END
```

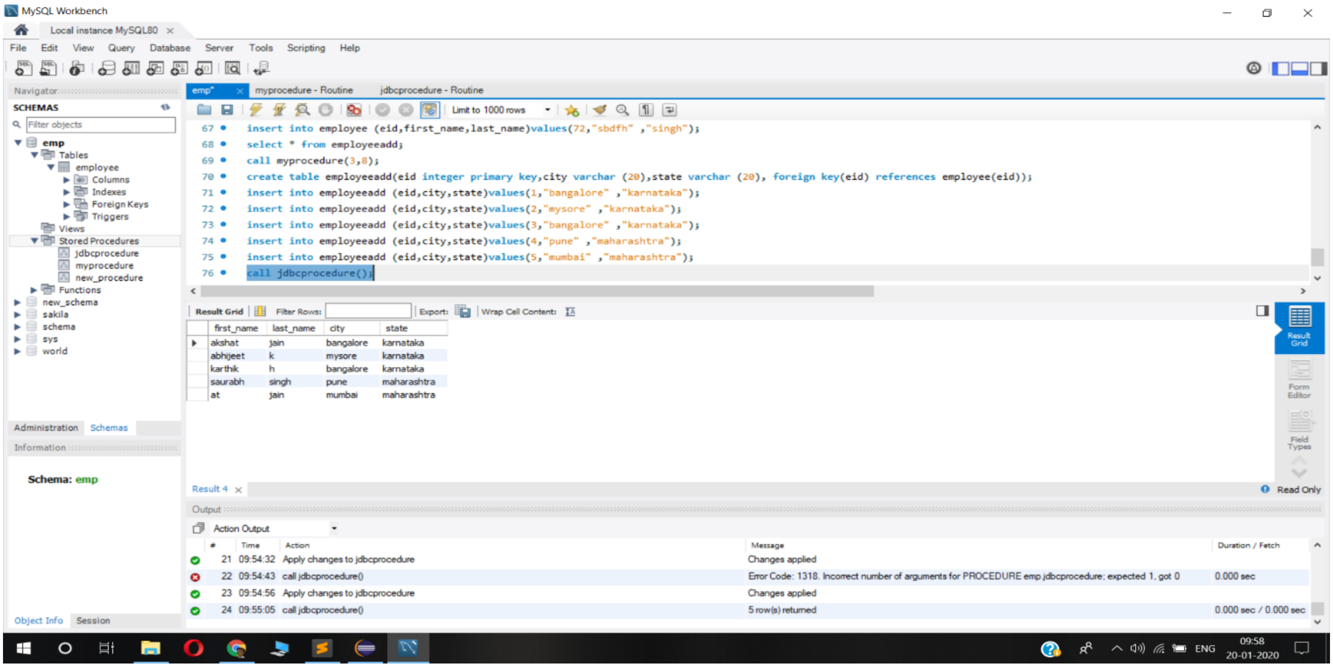
#	Time	Action	Message	Duration / Fetch
21	09:54:32	Apply changes to jdbcprocedure	Changes applied	
22	09:54:43	call jdbcprocedure()	Error Code: 1318. Incorrect number of arguments for PROCEDURE emp.jdbcprocedure; expected 1, got 0	0.000 sec
23	09:54:56	Apply changes to jdbcprocedure	Changes applied	
24	09:55:05	call jdbcprocedure()	5 row(s) returned	0.000 sec / 0.000 sec



```
insert into employee (eid,first_name,last_name)values(72,"sbdfh" ,"singh");
select * from employeeadd;
call myprocedure(3,8);
create table employeeadd(eid integer primary key,city varchar (20),state varchar (20), foreign key(eid) references employee(eid));
insert into employeeadd (eid,city,state)values(1,"bangalore" ,"karnataka");
insert into employeeadd (eid,city,state)values(2,"mysore" ,"karnataka");
insert into employeeadd (eid,city,state)values(3,"bangalore" ,"karnataka");
insert into employeeadd (eid,city,state)values(4,"pune" ,"maharashtra");
insert into employeeadd (eid,city,state)values(5,"mumbai" ,"maharashtra");
call jdbcprocedure();
```

first_name	last_name	city	state
akshat	jain	bangalore	karnataka
abhijeet	k	mysore	karnataka
karthik	h	bangalore	karnataka
saurabh	singh	pune	maharashtra
at	jain	mumbai	maharashtra

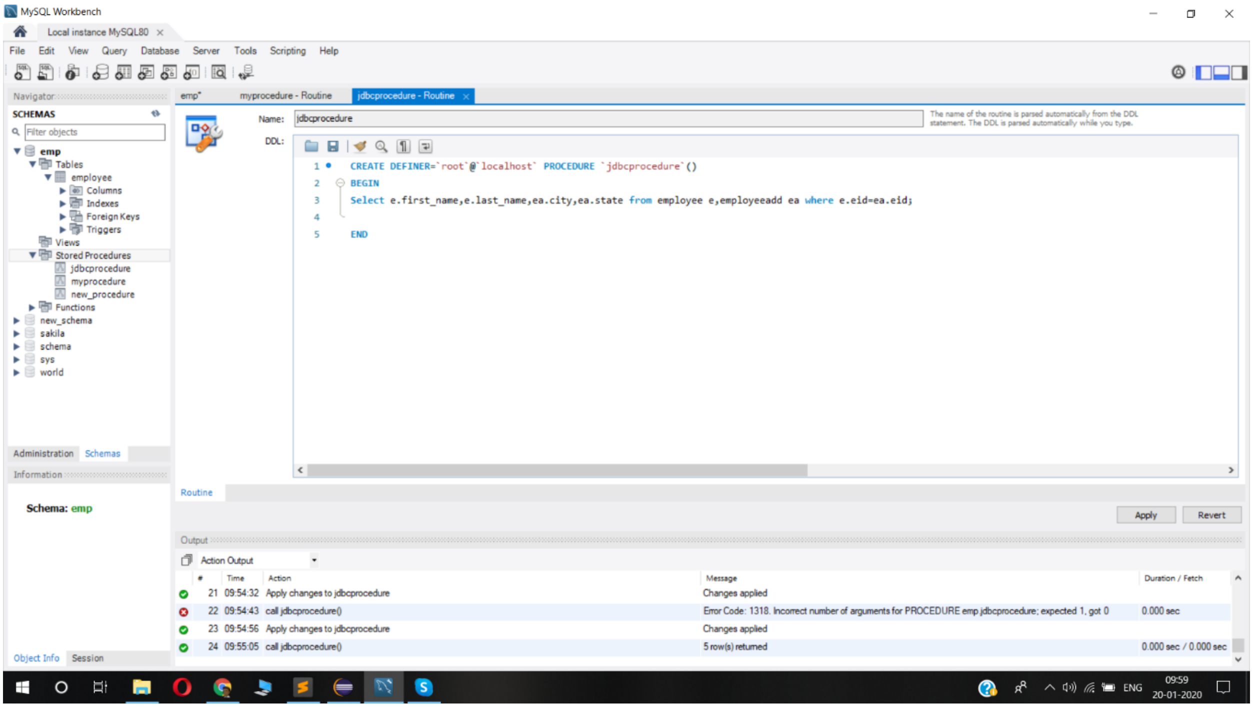
```
#   Time      Action                            Message                                                                                    Duration / Fetch
21  09:54:32  Apply changes to jdbcprocedure   Changes applied
22  09:54:43  call jdbcprocedure()             Error Code: 1318. Incorrect number of arguments for PROCEDURE emp.jdbcprocedure; expected 1, got 0   0.000 sec
23  09:54:56  Apply changes to jdbcprocedure   Changes applied
24  09:55:05  call jdbcprocedure()             5 row(s) returned                                                                          0.000 sec / 0.000 sec
```



```
insert into employee (eid,first_name,last_name)values(72,"sbdfh" ,"singh");
select * from employeeadd;
call myprocedure(3,8);
create table employeeadd(eid integer primary key,city varchar (20),state varchar (20), foreign key(eid) references employee(eid));
insert into employeeadd (eid,city,state)values(1,"bangalore" ,"karnataka");
insert into employeeadd (eid,city,state)values(2,"mysore" ,"karnataka");
insert into employeeadd (eid,city,state)values(3,"bangalore" ,"karnataka");
insert into employeeadd (eid,city,state)values(4,"pune" ,"maharashtra");
insert into employeeadd (eid,city,state)values(5,"mumbai" ,"maharashtra");
call jdbcprocedure();
```

first_name	last_name	city	state
akshat	jain	bangalore	karnataka
abhijeet	k	mysore	karnataka
karthik	h	bangalore	karnataka
saurabh	singh	pune	maharashtra
at	jain	mumbai	maharashtra

```
#   Time      Action                            Message                                                                                    Duration / Fetch
21  09:54:32  Apply changes to jdbcprocedure   Changes applied
22  09:54:43  call jdbcprocedure()             Error Code: 1318. Incorrect number of arguments for PROCEDURE emp.jdbcprocedure; expected 1, got 0   0.000 sec
23  09:54:56  Apply changes to jdbcprocedure   Changes applied
24  09:55:05  call jdbcprocedure()             5 row(s) returned                                                                          0.000 sec / 0.000 sec
```



Name: jdbcprocedure

The name of the routine is parsed automatically from the DDL statement. The DDL is parsed automatically while you type.

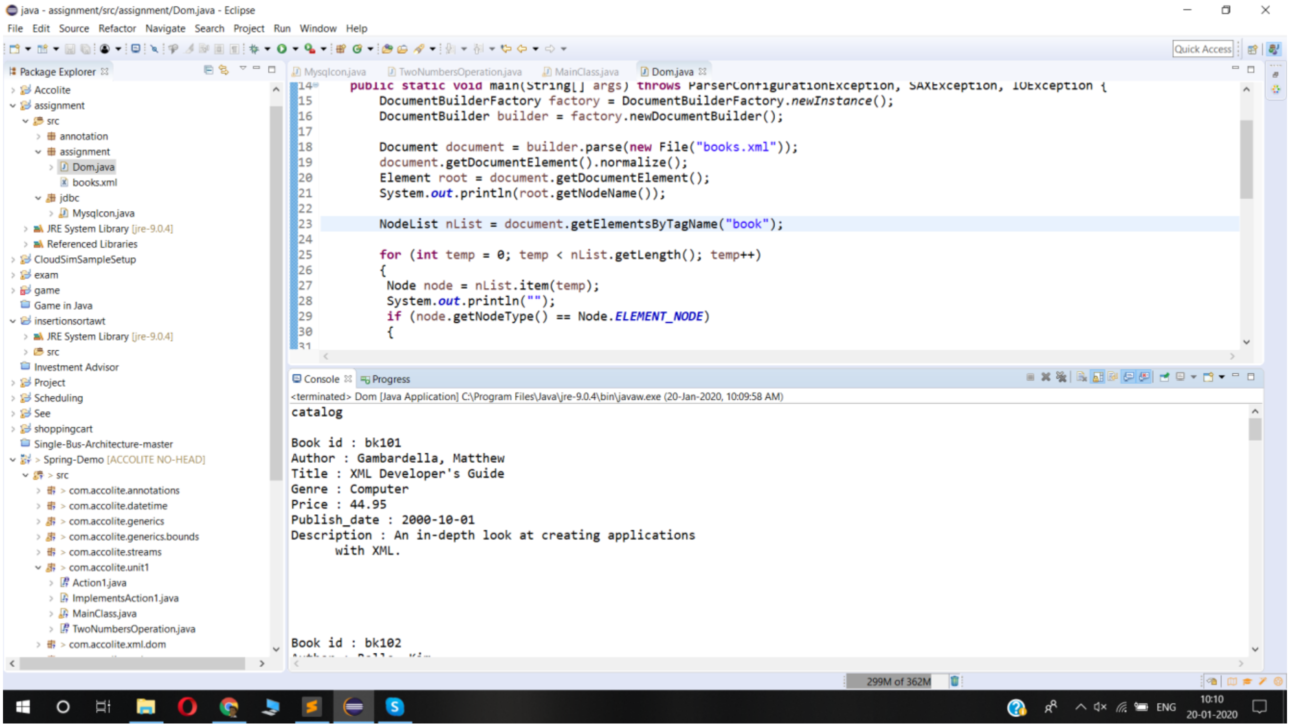
DDL:

```
CREATE DEFINER=`root`@`localhost` PROCEDURE `jdbcprocedure`()
BEGIN
Select e.first_name,e.last_name,ea.city,ea.state from employee e,employeeadd ea where e.eid=ea.eid;

END
```

Schema: emp

#	Time	Action	Message	Duration / Fetch
21	09:54:32	Apply changes to jdbcprocedure	Changes applied	
22	09:54:43	call jdbcprocedure()	Error Code: 1318. Incorrect number of arguments for PROCEDURE emp.jdbcprocedure; expected 1, got 0	0.000 sec
23	09:54:56	Apply changes to jdbcprocedure	Changes applied	
24	09:55:05	call jdbcprocedure()	5 row(s) returned	0.000 sec / 0.000 sec

2. Have an xml of size atleast .25MB. and implement DOM/SAX parsers (Odd Employee ID guys will implement and rest SAX



```java
    public static void main(String[] args) throws ParserConfigurationException, SAXException, IOException {
        DocumentBuilderFactory factory = DocumentBuilderFactory.newInstance();
        DocumentBuilder builder = factory.newDocumentBuilder();

        Document document = builder.parse(new File("books.xml"));
        document.getDocumentElement().normalize();
        Element root = document.getDocumentElement();
        System.out.println(root.getNodeName());

        NodeList nList = document.getElementsByTagName("book");

        for (int temp = 0; temp < nList.getLength(); temp++)
        {
         Node node = nList.item(temp);
         System.out.println("");
         if (node.getNodeType() == Node.ELEMENT_NODE)
         {
```

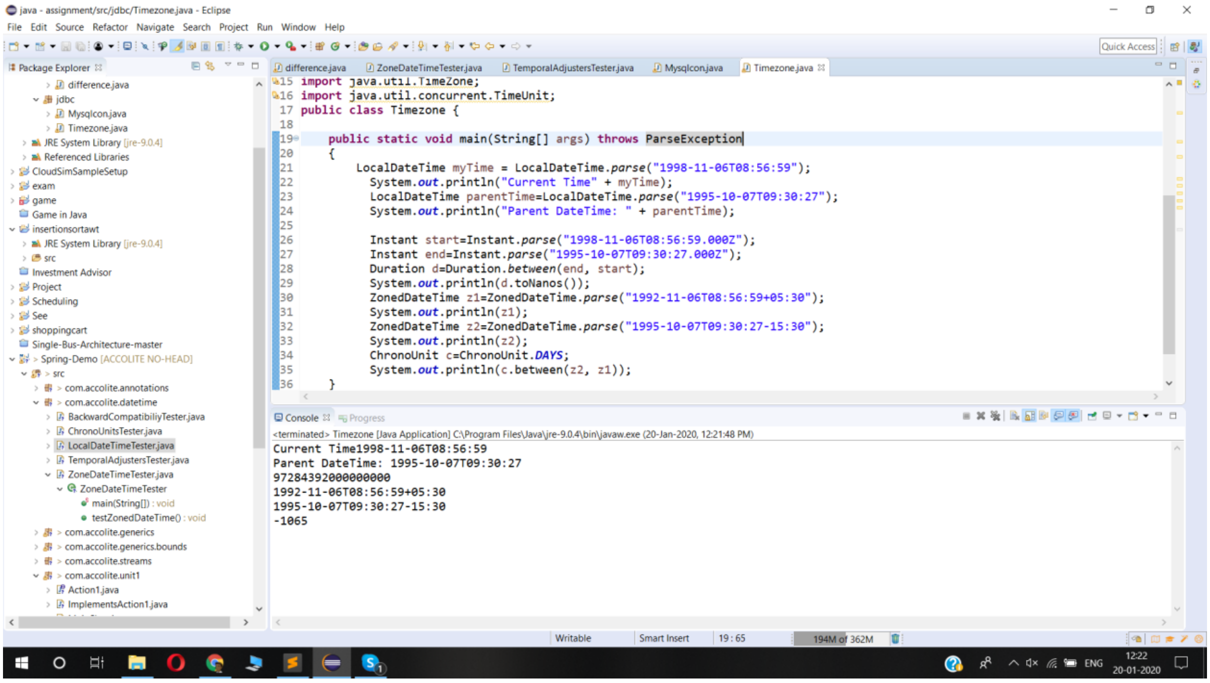
```
<terminated> Dom [Java Application] C:\Program Files\Java\jre-9.0.4\bin\javaw.exe (20-Jan-2020, 10:09:58 AM)
catalog

Book id : bk101
Author : Gambardella, Matthew
Title : XML Developer's Guide
Genre : Computer
Price : 44.95
Publish_date : 2000-10-01
Description : An in-depth look at creating applications
      with XML.



Book id : bk102
```

DOM

3. Create a method which takes two strings as inputs (your dob and your parent/sibling date of birth) and returns the difference in terms of:

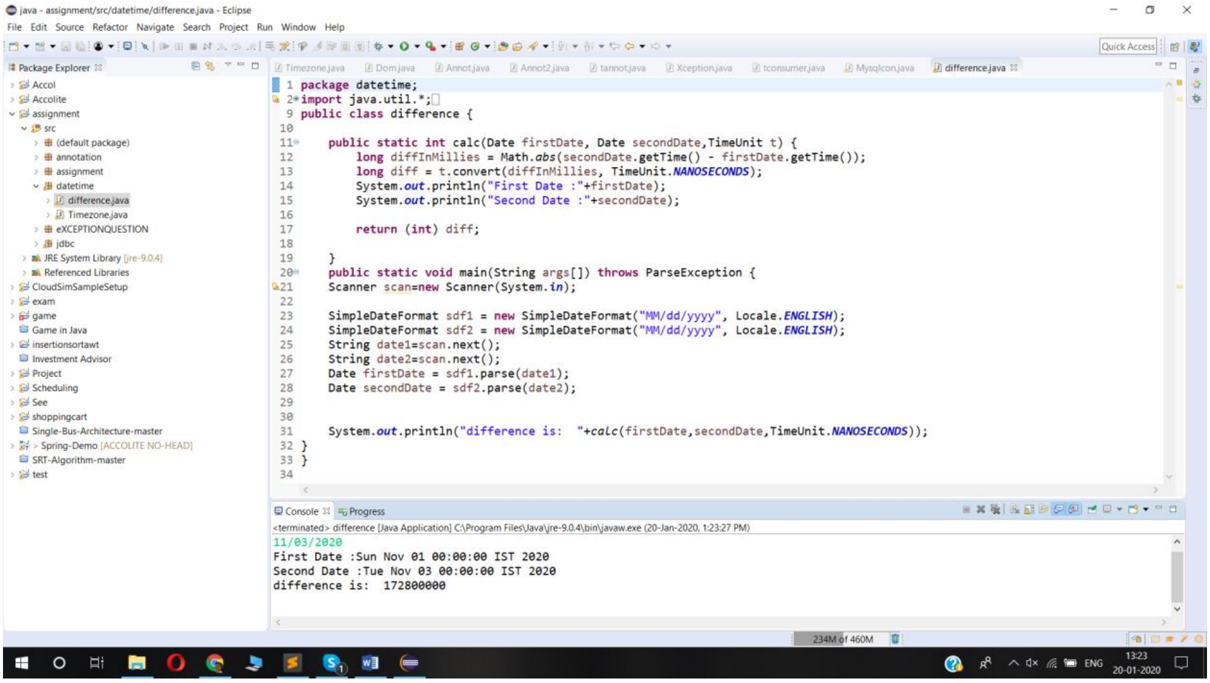
1. The number of days of difference between two in nano seconds

2. Consider your dob in different time zone and then convert your parent/sibling dob in that time zone and find difference in days


java - assignment/src/jdbc/Timezone.java - Eclipse
difference.java
ZoneDateTimeTester.java
TemporalAdjustersTester.java
Mysqlcon.java
Timezone.java

```
import java.util.TimeZone;
import java.util.concurrent.TimeUnit;
public class Timezone {

    public static void main(String[] args) throws ParseException
    {
        LocalDateTime myTime = LocalDateTime.parse("1998-11-06T08:56:59");
          System.out.println("Current Time" + myTime);
          LocalDateTime parentTime=LocalDateTime.parse("1995-10-07T09:30:27");
          System.out.println("Parent DateTime: " + parentTime);

          Instant start=Instant.parse("1998-11-06T08:56:59.000Z");
          Instant end=Instant.parse("1995-10-07T09:30:27.000Z");
          Duration d=Duration.between(end, start);
          System.out.println(d.toNanos());
          ZonedDateTime z1=ZonedDateTime.parse("1992-11-06T08:56:59+05:30");
          System.out.println(z1);
          ZonedDateTime z2=ZonedDateTime.parse("1995-10-07T09:30:27-15:30");
          System.out.println(z2);
          ChronoUnit c=ChronoUnit.DAYS;
          System.out.println(c.between(z2, z1));
    }
```

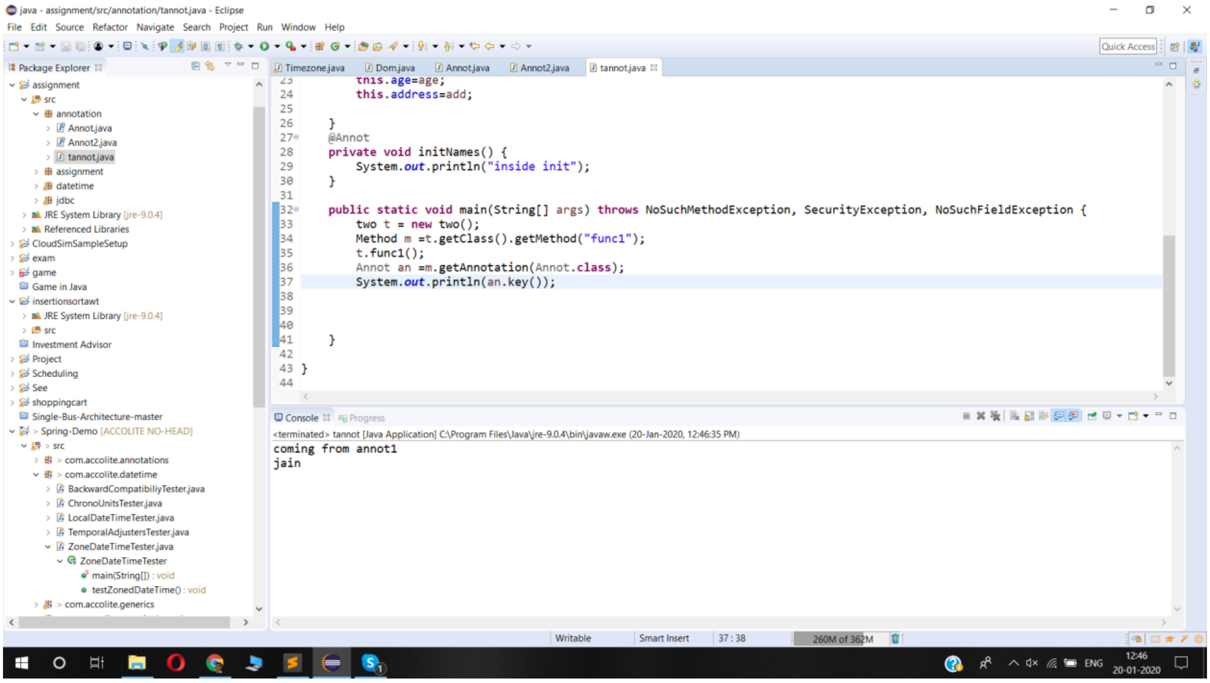
```
<terminated> Timezone [Java Application] C:\Program Files\Java\jre-9.0.4\bin\javaw.exe (20-Jan-2020, 12:21:48 PM)
Current Time1998-11-06T08:56:59
Parent DateTime: 1995-10-07T09:30:27
97284392000000000
1992-11-06T08:56:59+05:30
1995-10-07T09:30:27-15:30
-1065
```



```
package datetime;
import java.util.*;
public class difference {

    public static int calc(Date firstDate, Date secondDate,TimeUnit t) {
        long diffInMillies = Math.abs(secondDate.getTime() - firstDate.getTime());
        long diff = t.convert(diffInMillies, TimeUnit.NANOSECONDS);
        System.out.println("First Date :"+firstDate);
        System.out.println("Second Date :"+secondDate);

        return (int) diff;

    }
    public static void main(String args[]) throws ParseException {
    Scanner scan=new Scanner(System.in);

    SimpleDateFormat sdf1 = new SimpleDateFormat("MM/dd/yyyy", Locale.ENGLISH);
    SimpleDateFormat sdf2 = new SimpleDateFormat("MM/dd/yyyy", Locale.ENGLISH);
    String date1=scan.next();
    String date2=scan.next();
    Date firstDate = sdf1.parse(date1);
    Date secondDate = sdf2.parse(date2);


    System.out.println("difference is:  "+calc(firstDate,secondDate,TimeUnit.NANOSECONDS));
}
}
```

```
<terminated> difference [Java Application] C:\Program Files\Java\jre-9.0.4\bin\javaw.exe (20-Jan-2020, 1:23:27 PM)
11/03/2020
First Date :Sun Nov 01 00:00:00 IST 2020
Second Date :Tue Nov 03 00:00:00 IST 2020
difference is:  172800000
```

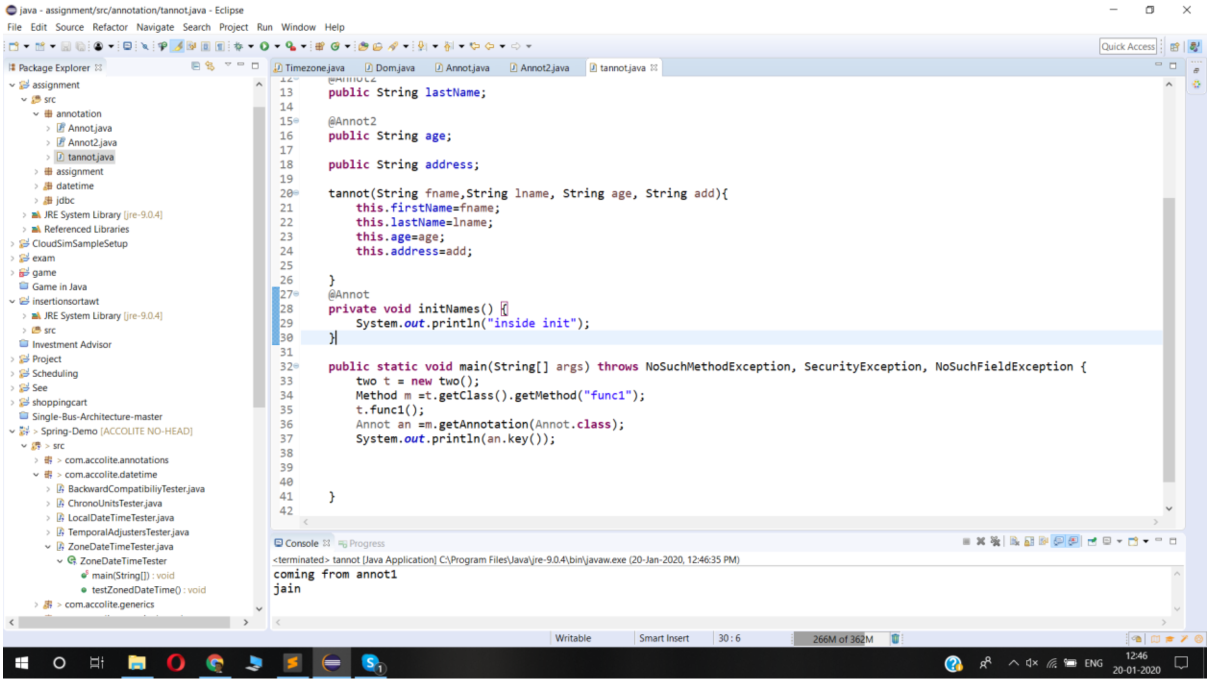
4. Create some meaningful FULL Annotation for Method and Class target types



java - assignment/src/annotation/tannot.java - Eclipse
File Edit Source Refactor Navigate Search Project Run Window Help
Timezone.java Dom.java Annot.java Annot2.java tannot.java

```java
        this.age=age;
        this.address=add;

    }
    @Annot
    private void initNames() {
        System.out.println("inside init");
    }

    public static void main(String[] args) throws NoSuchMethodException, SecurityException, NoSuchFieldException {
        two t = new two();
        Method m =t.getClass().getMethod("func1");
        t.func1();
        Annot an =m.getAnnotation(Annot.class);
        System.out.println(an.key());



    }

}
```

```
<terminated> tannot [Java Application] C:\Program Files\Java\jre-9.0.4\bin\javaw.exe (20-Jan-2020, 12:46:35 PM)
coming from annot1
jain
```

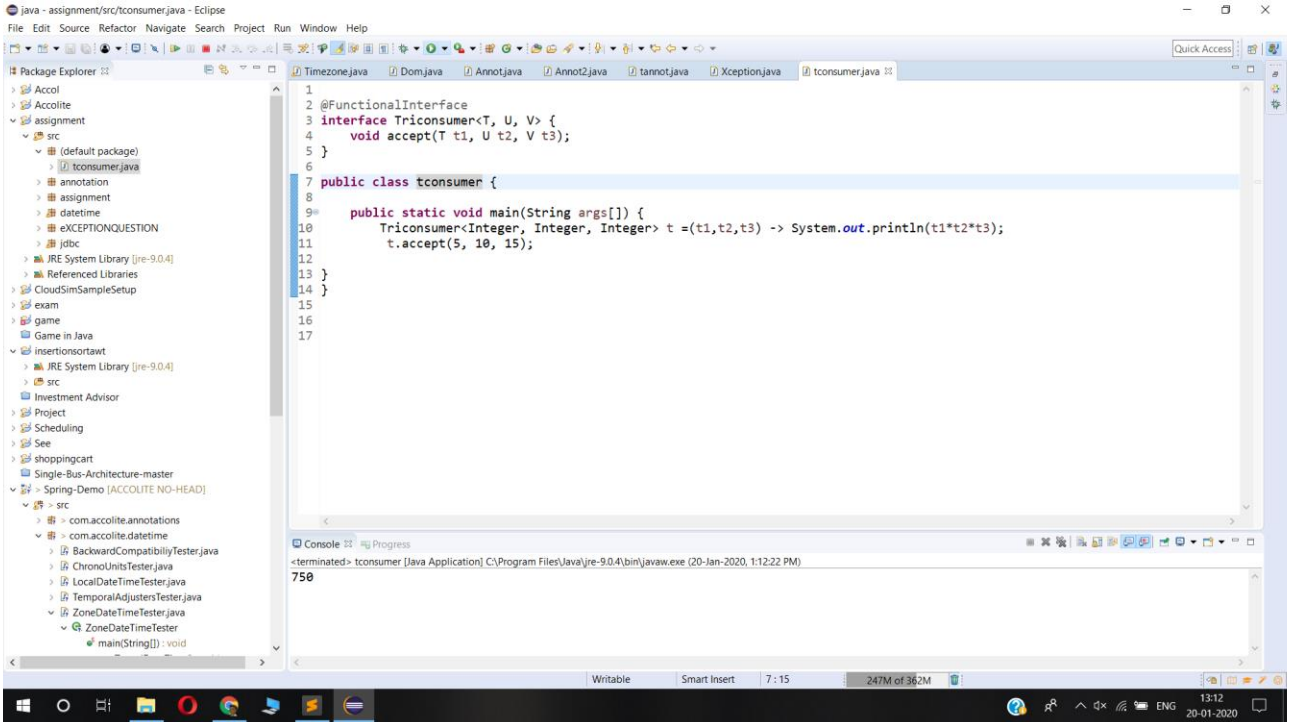


java - assignment/src/annotation/tannot.java - Eclipse
File Edit Source Refactor Navigate Search Project Run Window Help
Timezone.java Dom.java Annot.java Annot2.java tannot.java

```java
    public String lastName;

    @Annot2
    public String age;

    public String address;

    tannot(String fname,String lname, String age, String add){
        this.firstName=fname;
        this.lastName=lname;
        this.age=age;
        this.address=add;

    }
    @Annot
    private void initNames() {
        System.out.println("inside init");
    }

    public static void main(String[] args) throws NoSuchMethodException, SecurityException, NoSuchFieldException {
        two t = new two();
        Method m =t.getClass().getMethod("func1");
        t.func1();
        Annot an =m.getAnnotation(Annot.class);
        System.out.println(an.key());



    }

```

```
<terminated> tannot [Java Application] C:\Program Files\Java\jre-9.0.4\bin\javaw.exe (20-Jan-2020, 12:46:35 PM)
coming from annot1
jain
```

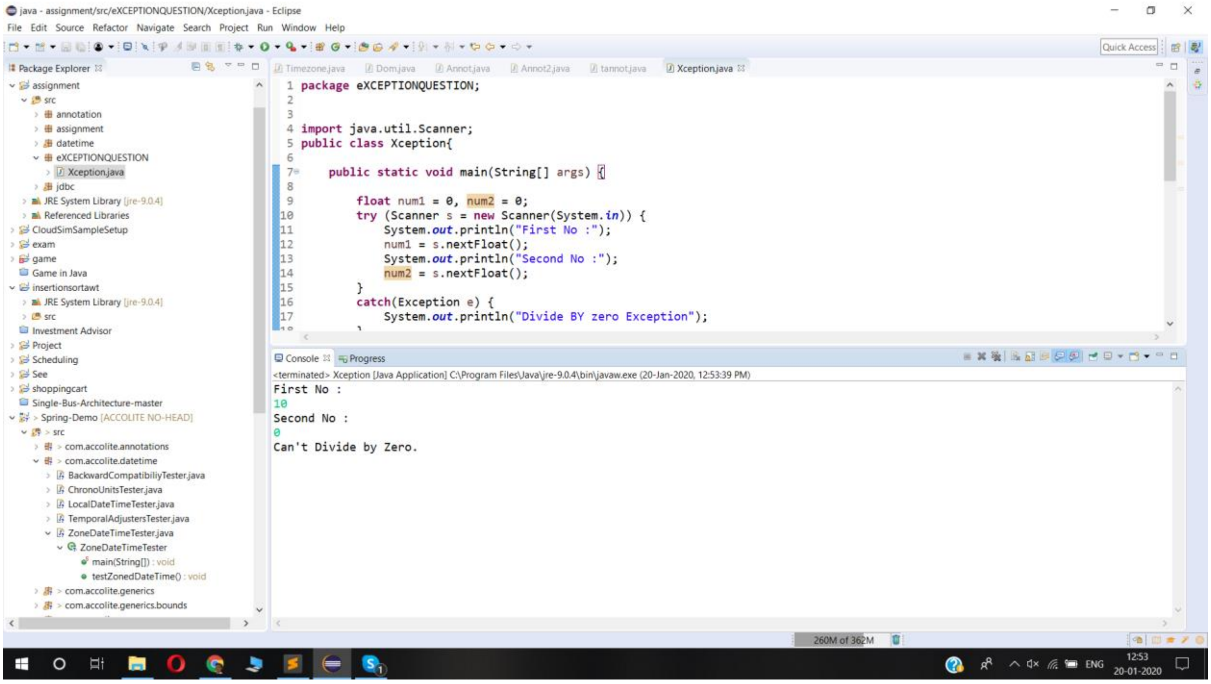
5. Design your own TriConsumer lambda



```java

@FunctionalInterface
interface Triconsumer<T, U, V> {
    void accept(T t1, U t2, V t3);
}

public class tconsumer {

    public static void main(String args[]) {
        Triconsumer<Integer, Integer, Integer> t =(t1,t2,t3) -> System.out.println(t1*t2*t3);
         t.accept(5, 10, 15);

}
}
```

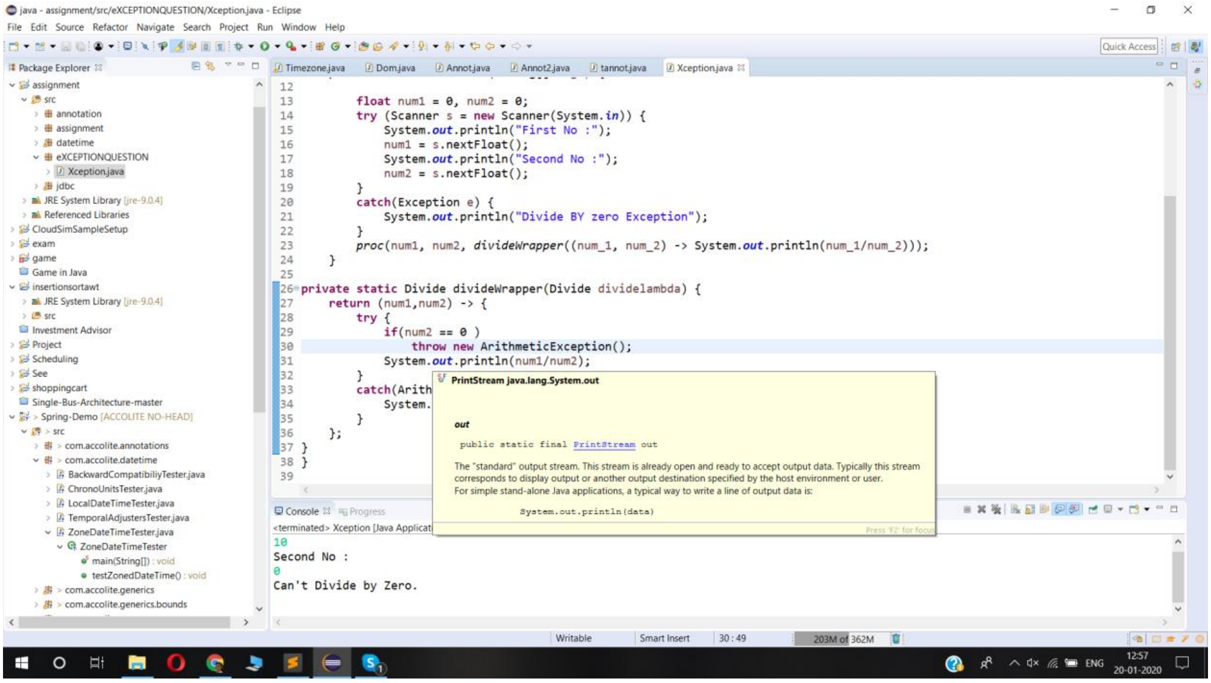
```
<terminated> tconsumer [Java Application] C:\Program Files\Java\jre-9.0.4\bin\javaw.exe (20-Jan-2020, 1:12:22 PM)
750
```

6. Demonstrate Exception handling in Lambda's using wrapper lambdas


java - assignment/src/eXCEPTIONQUESTION/Xception.java - Eclipse
File Edit Source Refactor Navigate Search Project Run Window Help
Package Explorer
Timezone.java
Dom.java
Annot.java
Annot2.java
tannot.java
Xception.java
Console
Progress
260M of 362M

```java
package eXCEPTIONQUESTION;


import java.util.Scanner;
public class Xception{

    public static void main(String[] args) {

        float num1 = 0, num2 = 0;
        try (Scanner s = new Scanner(System.in)) {
            System.out.println("First No :");
            num1 = s.nextFloat();
            System.out.println("Second No :");
            num2 = s.nextFloat();
        }
        catch(Exception e) {
            System.out.println("Divide BY zero Exception");
```

```
<terminated> Xception [Java Application] C:\Program Files\Java\jre-9.0.4\bin\javaw.exe (20-Jan-2020, 12:53:39 PM)
First No :
10
Second No :
0
Can't Divide by Zero.
```



```
        float num1 = 0, num2 = 0;
        try (Scanner s = new Scanner(System.in)) {
            System.out.println("First No :");
            num1 = s.nextFloat();
            System.out.println("Second No :");
            num2 = s.nextFloat();
        }
        catch(Exception e) {
            System.out.println("Divide BY zero Exception");
        }
        proc(num1, num2, divideWrapper((num_1, num_2) -> System.out.println(num_1/num_2)));
    }

private static Divide divideWrapper(Divide dividelambda) {
    return (num1,num2) -> {
        try {
            if(num2 == 0 )
                throw new ArithmeticException();
            System.out.println(num1/num2);
        }
        catch(Arith
            System.
        }
    };
}
}
```

PrintStream java.lang.System.out

out

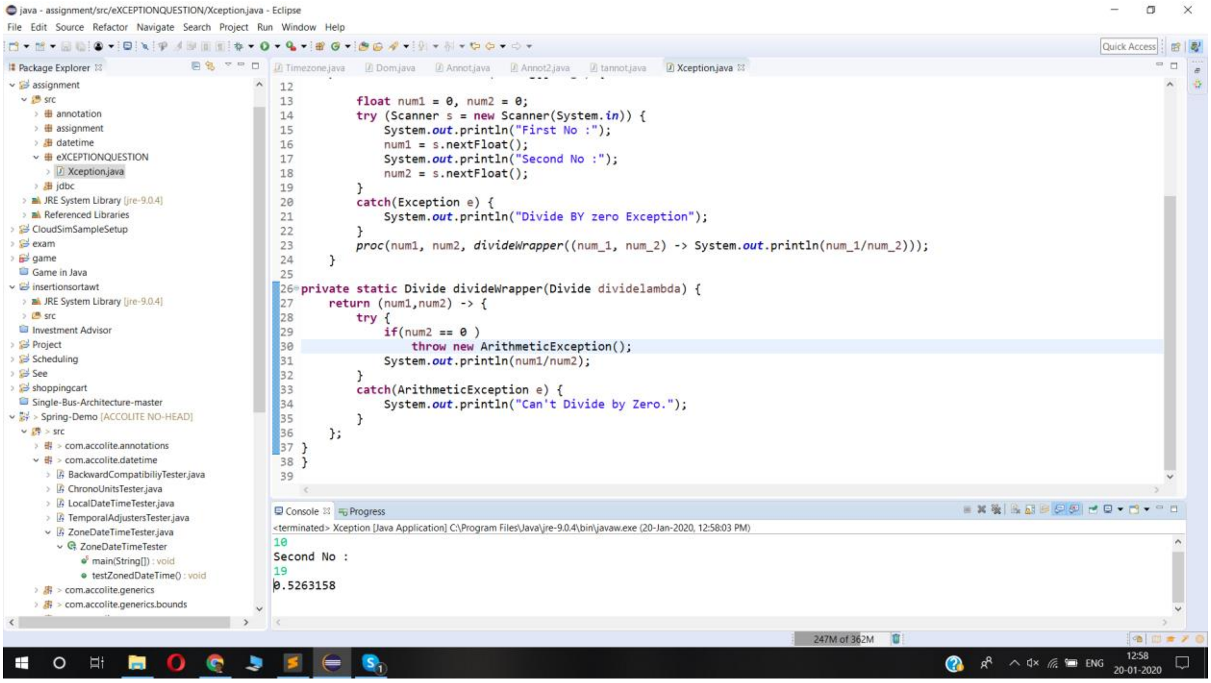
```
public static final PrintStream out
```

The "standard" output stream. This stream is already open and ready to accept output data. Typically this stream corresponds to display output or another output destination specified by the host environment or user.
For simple stand-alone Java applications, a typical way to write a line of output data is:

```
System.out.println(data)
```

Press 'F2' for focus

```
<terminated> Xception [Java Applicat
10
Second No :
0
Can't Divide by Zero.
```



```
        float num1 = 0, num2 = 0;
        try (Scanner s = new Scanner(System.in)) {
            System.out.println("First No :");
            num1 = s.nextFloat();
            System.out.println("Second No :");
            num2 = s.nextFloat();
        }
        catch(Exception e) {
            System.out.println("Divide BY zero Exception");
        }
        proc(num1, num2, divideWrapper((num_1, num_2) -> System.out.println(num_1/num_2)));
    }

private static Divide divideWrapper(Divide dividelambda) {
    return (num1,num2) -> {
        try {
            if(num2 == 0 )
                throw new ArithmeticException();
            System.out.println(num1/num2);
        }
        catch(ArithmeticException e) {
            System.out.println("Can't Divide by Zero.");
        }
    };
}
}
```

```
<terminated> Xception [Java Application] C:\Program Files\Java\jre-9.0.4\bin\javaw.exe (20-Jan-2020, 12:58:03 PM)
10
Second No :
19
0.5263158
```