



Ανοικτά Ακαδημαϊκά Μαθήματα

Τεχνολογικό Εκπαιδευτικό Ίδρυμα Αθήνας

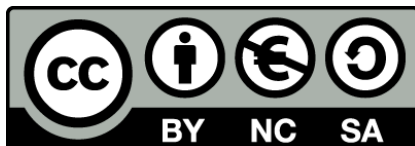


Βάσεις Δεδομένων και Web-based Εφαρμογές

Ενότητα: Εισαγωγή με παράδειγμα στις εφαρμογές Δυναμικών Ιστοσελίδων (JSP pages, MySQL)

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Τμήμα Μηχανικών Πληροφορικής ΤΕ



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Ευρωπαϊκή Ένωση
Ευρωπαϊκό Κοινωνικό Ταμείο



Με τη συγχρηματοδότηση της Ελλάδας και της Ευρωπαϊκής Ένωσης



Το έργο υλοποιείται στο πλαίσιο του Επιχειρησιακού Προγράμματος «Εκπαίδευση και Δια Βίου Μάθηση» και συγχρηματοδοτείται από την Ευρωπαϊκή Ένωση (Ευρωπαϊκό Κοινωνικό Ταμείο) και από εθνικούς πόρους.

Εισαγωγή με παράδειγμα στις εφαρμογές Δυναμικών Ιστοσελίδων (JSP pages, mySQL)



Θέμα

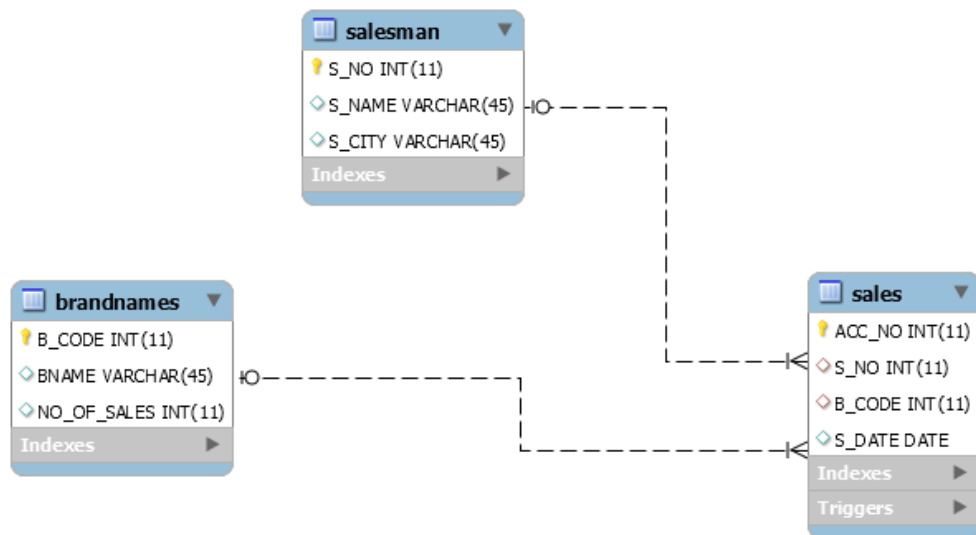
Εργάζεστε για την εταιρεία Mythical Car, μια εταιρεία πώλησης αυτοκινήτων, και σας ανατίθεται ο σχεδιασμός της Βάσης Δεδομένων των πωλήσεων της εταιρείας.

Περιορισμοί

1. Η εταιρεία Mythical Car εμπορεύεται πολλές μάρκες αυτοκινήτων (Brandnames): Audi, Opel,....
2. Κάθε πωλητής (salesman) της εταιρείας πουλά αυτοκίνητα για περισσότερες από μία μάρκες.
3. Για κάθε μάρκα υπάρχει καταχωρημένος ο αριθμός πωλήσεων (no_of_sales).

Ασκήσεις

- Για την παραπάνω περιγραφή δημιουργείστε τους κατάλληλους πίνακες .
- Κατασκευάστε τη διεπαφή μέσω της οποίας ο πωλητής θα καταγράφει την πώληση ενός αυτοκινήτου (jsp σελίδες).
- Δημιουργείστε τον κατάλληλο trigger ο οποίος θα ενεργοποιείται με κάθε νέα πώληση προκειμένου να αυξήσει τον αριθμό των πωλήσεων (no_of_sales).



```

DESCRIBE SALES;
DESCRIBE BRANDNAMES;
DESCRIBE SALESMAN;

```

```

mysql> DESCRIBE SALES;
+-----+-----+-----+-----+-----+-----+
| Field | Type   | Null | Key | Default | Extra           |
+-----+-----+-----+-----+-----+-----+
| ACC_NO | int(11) | NO   | PRI | NULL    | auto_increment |
| S_NO   | int(11) | YES  | MUL | NULL    |                 |
| B_CODE | int(11) | YES  | MUL | NULL    |                 |
| S_DATE | date    | YES  |     | NULL    |                 |
+-----+-----+-----+-----+-----+-----+
4 rows in set (0.05 sec)

mysql> DESCRIBE BRANDNAMES;
+-----+-----+-----+-----+-----+-----+
| Field      | Type          | Null | Key | Default | Extra           |
+-----+-----+-----+-----+-----+-----+
| B_CODE     | int(11)       | NO   | PRI | NULL    | auto_increment |
| BNAME      | varchar(45)   | YES  |     | NULL    |                 |
| NO_OF_SALES | int(11)       | YES  |     | NULL    |                 |
+-----+-----+-----+-----+-----+-----+
3 rows in set (0.01 sec)

mysql> DESCRIBE SALESMAN;
+-----+-----+-----+-----+-----+-----+
| Field | Type          | Null | Key | Default | Extra           |
+-----+-----+-----+-----+-----+-----+
| S_NO  | int(11)       | NO   | PRI | NULL    | auto_increment |
| S_NAME | varchar(45)   | YES  |     | NULL    |                 |
| S_CITY | varchar(45)   | YES  |     | NULL    |                 |
+-----+-----+-----+-----+-----+-----+
3 rows in set (0.01 sec)

mysql>

```

```

SELECT * FROM sales;
SELECT * FROM brandnames;
SELECT * FROM salesman;

```

```

mysql>
mysql> SELECT * FROM brandnames;
+-----+-----+-----+
| B_CODE | BNAME   | NO_OF_SALES |
+-----+-----+-----+
| 201    | PORSCHE | NULL        |
| 202    | LANCIA  | NULL        |
| 203    | FIAT    | NULL        |
+-----+-----+-----+
3 rows in set (0.00 sec)

mysql> SELECT * FROM salesman;
+-----+-----+-----+
| S_NO | S_NAME | S_CITY |
+-----+-----+-----+
| 21   | CODD   | ATHENS |
| 22   | DATE   | NEW YORK |
| 23   | ULMAN  | ATHENS |
+-----+-----+-----+
3 rows in set (0.00 sec)

mysql> SELECT * FROM sales;
Empty set (0.00 sec)

mysql>

```

```

DROP DATABASE mythical_car;
CREATE DATABASE mythical_car;
USE mythical_car;

-- -----
-- Table `mythical_car`.`brandnames`
-- -----
CREATE TABLE brandnames (
  B_CODE INT(11) NOT NULL AUTO_INCREMENT,
  BNAME VARCHAR(45) NULL DEFAULT NULL,
  NO_OF_SALES INT(11) NULL DEFAULT NULL,
  PRIMARY KEY (B_CODE))
ENGINE = InnoDB
AUTO_INCREMENT = 201
DEFAULT CHARACTER SET = utf8;

-- -----
-- Table `mythical_car`.`salesman`
-- -----
CREATE TABLE salesman (
  S_NO INT(11) NOT NULL AUTO_INCREMENT,
  S_NAME VARCHAR(45) NULL DEFAULT NULL,
  S_CITY VARCHAR(45) NULL DEFAULT NULL,
  PRIMARY KEY (S_NO))
ENGINE = InnoDB
AUTO_INCREMENT = 21
DEFAULT CHARACTER SET = utf8;

-- -----
-- Table `mythical_car`.`sales`
-- -----
CREATE TABLE sales (
  ACC_NO INT(11) NOT NULL AUTO_INCREMENT,
  S_NO INT(11) NULL DEFAULT NULL,
  B_CODE INT(11) NULL DEFAULT NULL,
  S_DATE DATE NULL DEFAULT NULL,
  PRIMARY KEY (ACC_NO),
  INDEX S_NO (S_NO ASC),
  INDEX B_CODE (B_CODE ASC),
  CONSTRAINT `sales_ibfk_1`
    FOREIGN KEY (S_NO)
    REFERENCES salesman (S_NO),
  CONSTRAINT sales_ibfk_2
    FOREIGN KEY (B_CODE)
    REFERENCES brandnames (B_CODE))
ENGINE = InnoDB
AUTO_INCREMENT = 1
DEFAULT CHARACTER SET = utf8;

```

```

DELIMITER $$

USE `mythical_car`$$
DROP TRIGGER IF EXISTS `mythical_car`.`TOTAL_SALES` $$
USE `mythical_car`$$
CREATE
DEFINER=`root`@`localhost`
TRIGGER `mythical_car`.`TOTAL_SALES`
BEFORE INSERT ON `mythical_car`.`sales`
FOR EACH ROW
UPDATE BRANDNAMES SET NO_OF_SALES=IFNULL(NO_OF_SALES,0)+1
WHERE BRANDNAMES.B_CODE=NEW.B_CODE$$

DELIMITER ;

INSERT INTO brandnames (BNAME) VALUES ('PORSCHE');

INSERT INTO brandnames (BNAME) VALUES ('LANCIA');

INSERT INTO brandnames (BNAME) VALUES ('FIAT');

INSERT INTO salesman (S_NAME, S_CITY) VALUES ('Codd', 'ATHENS');

INSERT INTO salesman (S_NAME, S_CITY) VALUES ('DATE', 'NEW YORK');

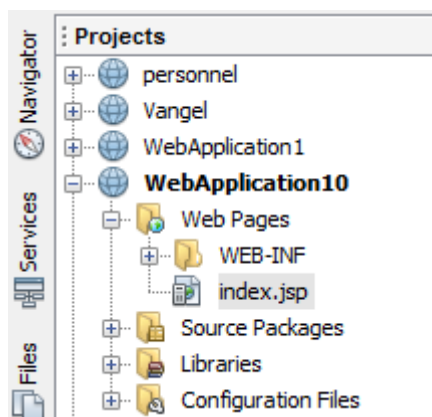
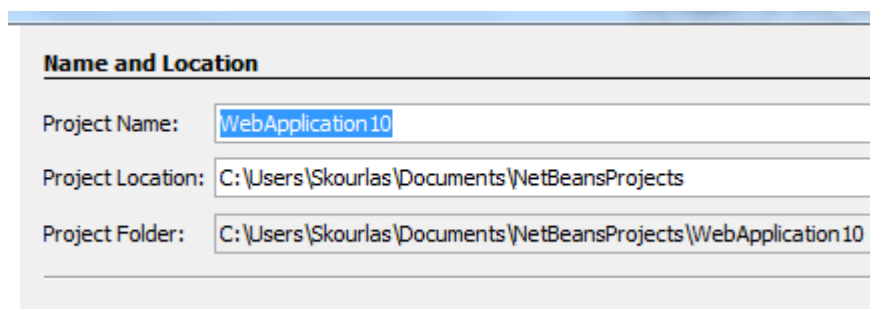
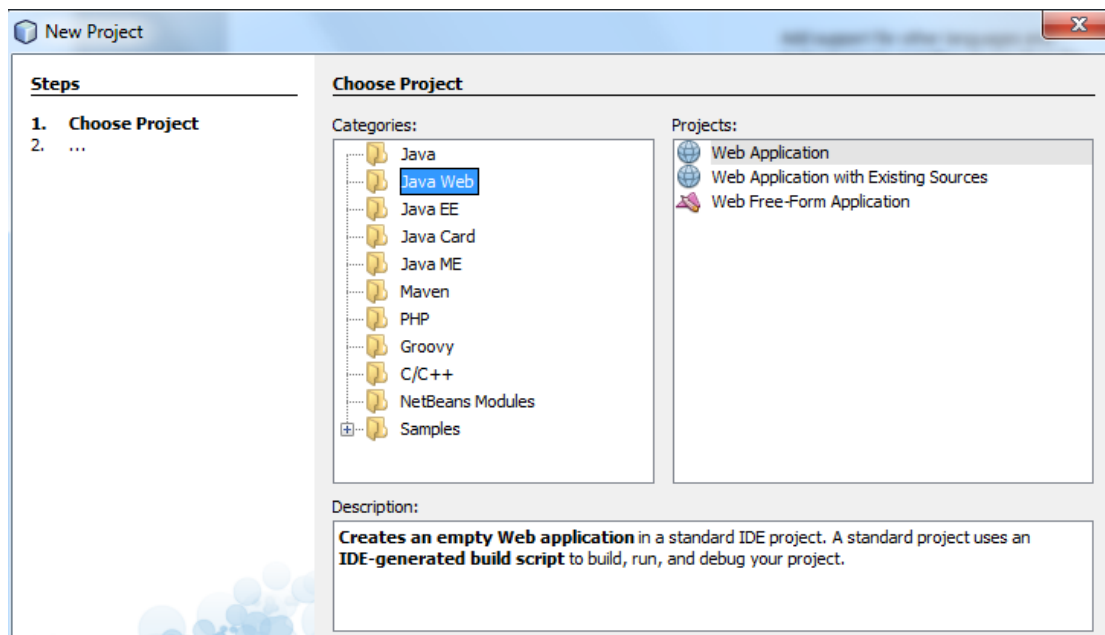
INSERT INTO salesman (S_NAME, S_CITY) VALUES ('ULMAN', 'ATHENS');

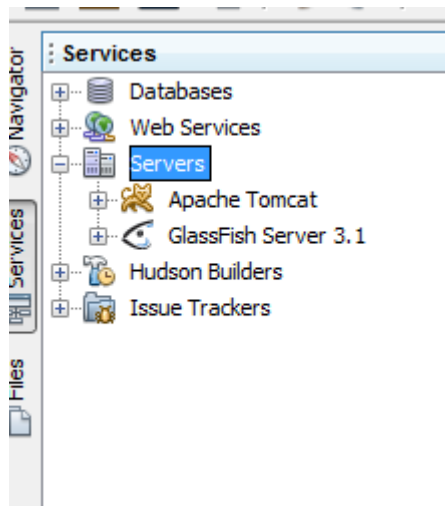

SELECT * FROM brandnames;
SELECT * FROM salesman;

SELECT * FROM sales;

```

Mythical Car JSP pages





menu.jsp

Name and Location

File Name:

Project:

Location:

Folder:

Created File:

Options:

☒ JSP File (Standard Syntax) ☐ Create as a JSP Segment

☐ JSP Document (XML Syntax)

Description:


```

<%--
    Document      : menu
    Created on    : Jun 3, 2015, 3:53:08 PM
    Author       : Christos
--%>
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
        <title>MENU</title>
    </head>
    <body>
        <center>
            <font size="+2"> MENU </font>
            <form name="insertsales" method="post" action="sales_index.jsp">
                <input type="submit" value="Insert new sale"><p>
            </form>
            <form name="selectsales" method="post" action="selectSales.jsp">
                <input type="submit" value="Select sales">
            </form>
        </center>
    </body>
</html>

```

```

<%--

Document : menu

Created on : Jun 3, 2015, 3:53:08 PM

Author : Christos

--%>

<%@page contentType="text/html" pageEncoding="UTF-8"%>

<!DOCTYPE html>

<html>

    <head>

        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">

        <title>MENU</title>

    </head>

    <body>

        <center>

```

```

<font size="+2"> MENU </font>

<form name="insertsales" method="post" action="sales_index.jsp">

  <input type="submit" value="Insert new sale"><p>

</form>

<form name="selectsales" method="post" action="selectSales.jsp">

  <input type="submit" value="Select sales">

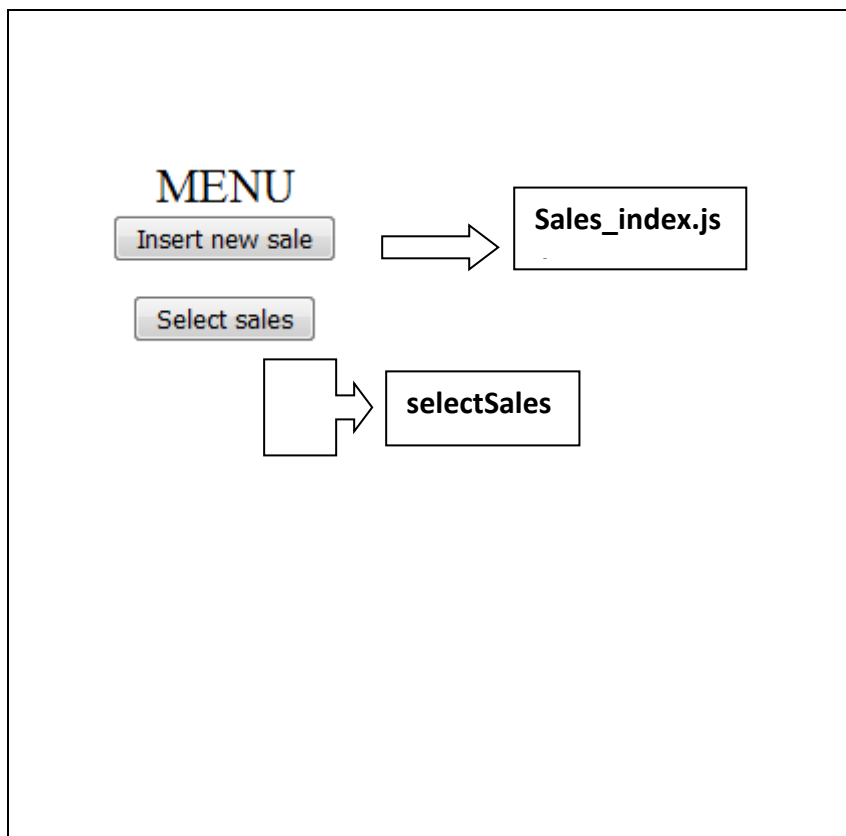
</form>

</center>

</body>

</html>

```



sales_index.jsp

Name and Location

File Name:

Project:

Location:

Folder:

Created File:

Options:

☒ JSP File (Standard Syntax) ☐ Create as a JSP Segment

☐ JSP Document (XML Syntax)

Description:

<%--

Document : sales_index

Created on : Jun 3, 2015, 3:16:03 PM

Author : Christos

--%>

<%@page contentType="text/html" pageEncoding="UTF-8"%>

<!DOCTYPE html>

<html>

<head>

<meta http-equiv="Content-Type" content="text/html; charset=UTF-8">

<title>Insert new sale</title>

</head>

<body>

<center>

Fill the text boxes below

```
<form name="salesIndex" method="post" action="salesInsert.jsp">
```

```
    Salesman no: <input type="text" name="s_no" > <p>
```

```
    Brand  code: <input type="text" name="b_code" > <p>
```

```
    Sale date : <input type="text" name="s_date" ><p>
```

```
    <input type="submit" value="Insert new sale" >
```

```
</form>
```

```
</center>
```

```
</body>
```

```
</html>
```

```
<!--
  Document    : sales_index
  Created on  : Jun 3, 2015, 3:16:03 PM
  Author      : Christos
-->
<@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
  <head>
    <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
    <title>Insert new sale</title>
  </head>
  <body>
    <center>
      Fill the text boxes below
      <form name="salesIndex" method="post" action="salesInsert.jsp">
        Salesman no: <input type="text" name="s_no" > <p>
        Brand  code: <input type="text" name="b_code" > <p>
        Sale date : <input type="text" name="s_date" ><p>
        <input type="submit" value="Insert new sale" >
      </form>
    </center>
  </body>
</html>
```

Fill the text boxes below

Salesman no:

Brand code:

Sale date :

Fill the text boxes below

Salesman no:

Brand code:

Sale date :

salesInsert.jsp

Name and Location

File Name:

Project:

Location:

Folder:

Created File:

Options:

☒ JSP File (Standard Syntax) ☐ Create as a JSP Segment

☐ JSP Document (XML Syntax)

Description:

<%--

Document : salesInsert

Created on : Jun 3, 2015, 3:20:28 PM

Author : Christos

--%>

<%@page contentType="text/html" pageEncoding="UTF-8"%>

<%@page import="java.sql.*" %>

<%

int s_no=Integer.parseInt(request.getParameter("s_no"));

int b_code=Integer.parseInt(request.getParameter("b_code"));

String s_date=request.getParameter("s_date");

%>

<!DOCTYPE html>

<html>

<head>

```

<meta http-equiv="Content-Type" content="text/html; charset=UTF-8">

<title>JSP Page</title>

</head>

<body>

    <%

        Class.forName("com.mysql.jdbc.Driver");

        // Define the connection parameters

        String myDatabase =
"jdbc:mysql://localhost:3306/MYTHICAL_CAR?user=root&password=1234";

        // Connect to the database

        Connection myConnection = DriverManager.getConnection(myDatabase);

        // Create object to execute statements

        Statement myStatement = myConnection.createStatement();

        String SQLstring="INSERT INTO SALES (S_NO,B_CODE,S_DATE) VALUES
("+s_no+", "+b_code+", "+s_date+") ";

        myStatement.executeUpdate(SQLstring);

        myStatement.close();

        myConnection.close();

    %>

    <form name="goBack" method="post" action="menu.jsp">

        <script>

            document.forms["goBack"].submit();

        </script>

    </form>

</body>

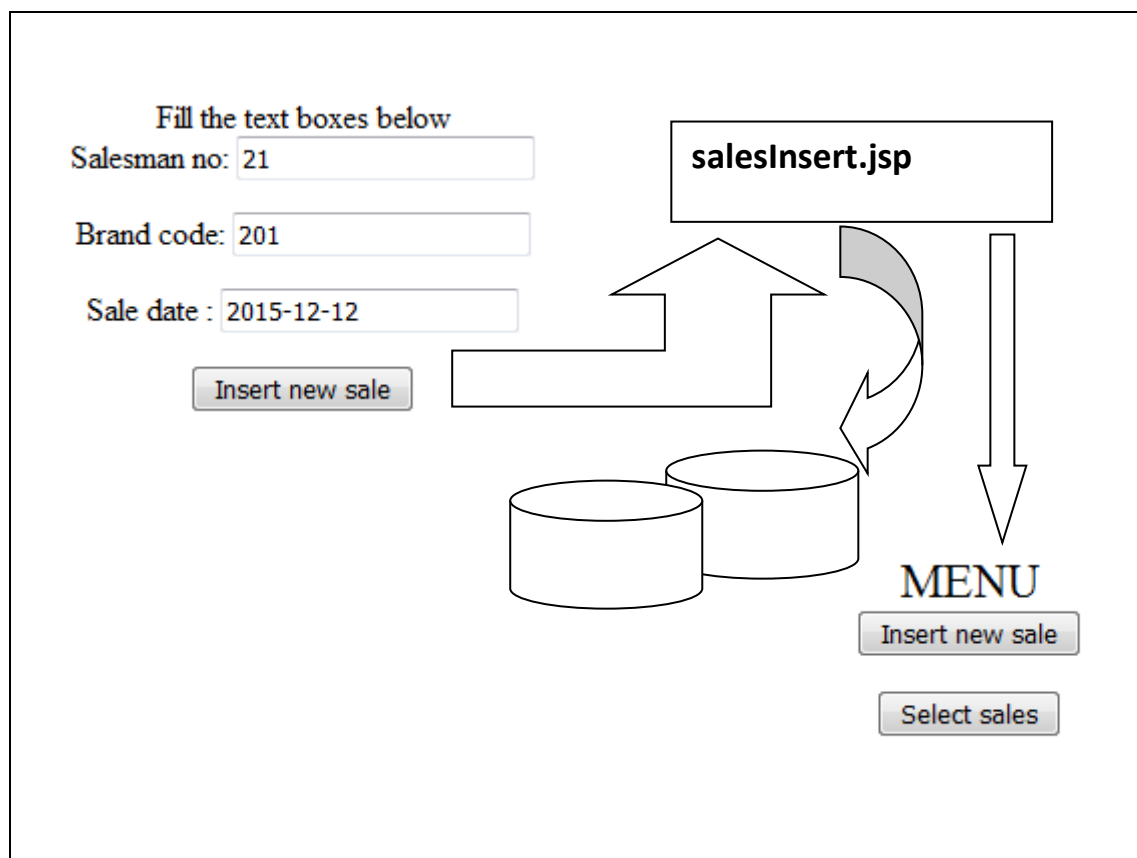
</html>

```

```

<!--
Document   : salesInsert
Created on : Jun 3, 2015, 3:20:28 PM
Author    : Christos
-->
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<%@page import="java.sql.*"%>
<%
    int s_no=Integer.parseInt(request.getParameter("s_no"));
    int b_code=Integer.parseInt(request.getParameter("b_code"));
    String s_date=request.getParameter("s_date");
%>
<!DOCTYPE html>
<html>
<head>
    <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
    <title>JSP Page</title>
</head>
<body>
    <%
        Class.forName("com.mysql.jdbc.Driver");
        // Define the connection parameters
        String myDatabase = "jdbc:mysql://localhost:3306/MYTHICAL_CAR?user=root&password=1234";
        // Connect to the database
        Connection myConnection = DriverManager.getConnection(myDatabase);
        // Create object to execute statements
        Statement myStatement = myConnection.createStatement();
        String SQLstring="INSERT INTO SALES (S_NO,B_CODE,S_DATE) VALUES ('"+s_no+"','"+b_code+"',
        myStatement.executeUpdate(SQLstring);
        myStatement.close();
        myConnection.close();
    %>
    <form name="goBack" method="post" action="menu.jsp">
        <script>
            document.forms["goBack"].submit();
        </script>
    </form>
</body>
</html>

```



selectSales.jsp

Name and Location

File Name:

Project:

Location:

Folder:

Created File:

Options:

☒ JSP File (Standard Syntax) ☐ Create as a JSP Segment

☐ JSP Document (XML Syntax)

Description:

<%--

Document : selectSales

Created on : Jun 3, 2015, 3:52:48 PM

Author : Christos

--%>

<%@page contentType="text/html" pageEncoding="UTF-8"%>

<%@page import="java.sql.*" %>

<!DOCTYPE html>

<html>

<head>

<meta http-equiv="Content-Type" content="text/html; charset=UTF-8">

<title>Sales</title>

</head>

<body>

```

<%

    Class.forName("com.mysql.jdbc.Driver");

    // Define the connection parameters

    String myDatabase =
"jdbc:mysql://localhost:3306/MYTHICAL_CAR?user=root&password=1234";

    // Connect to the database

    Connection myConnection = DriverManager.getConnection(myDatabase);

    // Create object to execute statements

    Statement myStatement = myConnection.createStatement();

    String SQLstring="SELECT * FROM SALES; ";

    ResultSet rs=myStatement.executeQuery(SQLstring);

    int [] acc_no=new int[200];

    int [] s_no=new int[200];

    int [] b_no=new int[200];

    String [] s_date= new String[200];

    int j=0;

    while(rs.next())

    {

        acc_no[j]=rs.getInt("ACC_NO");

        s_no[j]=rs.getInt("S_NO");

        b_no[j]=rs.getInt("B_CODE");

        s_date[j]=rs.getString("S_DATE");

        j++;

    }

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

        {

```

%>

Sales_no:<%= acc_no[i]%> <p>

Salesman_no: <%= s_no[i]%> <p>

Brand code: <%= b_no[i]%> <p>

Sales date: <%= s_date[i]%> <p>

<p><p><p>

<%

}

myStatement.close();

myConnection.close();

%>

<form name="goBack" method="post" action="menu.jsp">

<input type="submit" value="GO BACK TO MENU" >

</form>

</body>

</html>

Sales_no:1

Salesman_no: 21

Brand code: 201

Sales date: 2015-12-12

Sales_no:2

Salesman_no: 21

Brand code: 202

Sales date: 2015-12-12

Sales_no:3

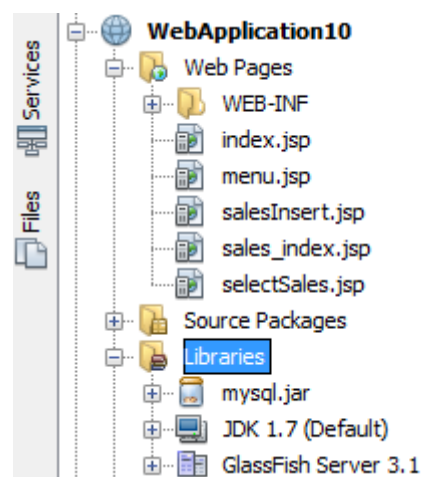
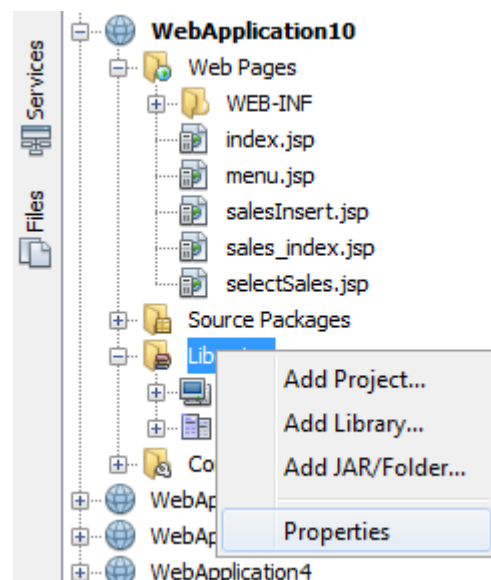
Salesman_no: 22

Brand code: 202

Sales date: 2015-12-20

GO BACK TO MENU

Κατασκευή εφαρμογής



MENU

Insert new sale

Select sales

Fill the text boxes below

Salesman no:

Brand code:

Sale date :

Insert new sale

Fill the text boxes below

Salesman no:

Brand code:

Sale date :

Insert new sale

MENU

Insert new sale

Select sales

Sales_no:1

Salesman_no: 21

Brand code: 201

Sales date: 2015-12-12

Sales_no:2

Salesman_no: 21

Brand code: 202

Sales date: 2015-12-12

Sales_no:3

Salesman_no: 22

Brand code: 202

Sales date: 2015-12-20

GO BACK TO MENU

```
SELECT * FROM brandnames;
```

```
SELECT * FROM salesman;
```

```
SELECT * FROM sales;
```

```
mysql> use mythical_car;
Database changed
mysql> SELECT * FROM brandnames;
+-----+-----+-----+
| B_CODE | BNAME  | NO_OF_SALES |
+-----+-----+-----+
| 201    | PORSCHE | 1           |
| 202    | LANCIA  | 2           |
| 203    | FIAT    | NULL        |
+-----+-----+-----+
3 rows in set (0.00 sec)

mysql> SELECT * FROM salesman;
+-----+-----+-----+
| S_NO | S_NAME | S_CITY |
+-----+-----+-----+
| 21   | CODD   | ATHENS |
| 22   | DATE   | NEW YORK |
| 23   | ULMAN  | ATHENS |
+-----+-----+-----+
3 rows in set (0.00 sec)

mysql> SELECT * FROM sales;
+-----+-----+-----+-----+
| ACC_NO | S_NO | B_CODE | S_DATE |
+-----+-----+-----+-----+
| 1      | 21   | 201    | 2015-12-12 |
| 2      | 21   | 202    | 2015-12-12 |
| 3      | 22   | 202    | 2015-12-20 |
+-----+-----+-----+-----+
3 rows in set (0.00 sec)

mysql> _
```