

MP2 readme

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11/09/2013

To Run

test\_mp2.bat located in test folder

### **Project description:**

Project loads the data files which are in .csv format and user has privilege to view all the files.

User is allowed to add a new order records in to the orders file

User is allowed to view all the order details by customer number.

The developed project consists of console dialog class that includes the above mentioned features in a navigable format:

- Prompts the user to load each Data file into the application.
- Prompts the user to load a previous session from a serialized file.
- Prompts the user to save the current session to a serialized file.
- Prompts the user to add a new Order File.
- Prompts the user to view all Customers.
- Prompts the user to view all Employees.
- Prompts the user to view all Orders by Customer Number.

Driver class has the main method and is used to launch the application.

Test cases are written to cover the positive,negative and exception behavior of the application.

### **Installation, compile and run-time requirements:**

Installation requirements: IDE: Eclipse

IDEVersion: Kelpler Version

Java JDK 7 version

Compile time requirements: Jar required: opencsv-2.4jar

Run time requirements for batch file: kindly keep all data files in data folder in C drive before running the Jar file

### **User guide information on the dialogs:**

Run the program and verify that console window is opened with following options:

Main Menu:

What would you like to do:

1. Load data file into the application
2. Load a previous session from a serialized file
3. save the current session to a serialized file
4. add a new Order Record
5. view all Customers
6. view all Employees

7. view all Orders by Customer Number
8. view all Offices
9. view all Order Details
10. view all Payments
11. view all Product Lines
12. view all Products

### **Load data files in to application:**

Enter “1” and press enter to load a data file into the application:

User will be displayed with the below options

1. Customer File
2. Employee File
3. Order File

- Enter “1” to load customer data file
  1. User will be prompted to enter the path to customers file “Please enter the file path to Customers file”.
  2. Give the path of the customer file.
  - 3.
- Give the path of the file and press Enter
- Enter “2” to load Employee data file
- Enter “3” to load order data file

Verify that main menu is displayed after file is loaded successfully.

### **Serialization:**

In order to serialize, follow the below steps

- Enter “3” from main menu and press enter.
- User will be prompted to enter path to save the serialized file “Enter Path to save the serialized file”.
- Give the path where user wants the file to be saved and press enter.
- Verify that the file of type .SER is saved in the above specified path.
- Message “Total Object Serialization done!” will be displayed once the file saving is completed.
- Main Menu should be displayed after all the records from the files are printed.

### **Deserialization:**

. In order to deserialize, serialize the file first and follow the below steps.

- Enter “2” from main menu and press enter.
- User will be prompted to enter path to load the serialized file “Enter Path to Load the serialized file”.
- Give the path where the serialized file exists with extension .ser and press enter.
- Verify that the all the records from the data files are displayed once enter is pressed.
- Main Menu should be displayed after all the records from the files are printed.

### **Adding a new order record:**

In order to add a new order record, follow the below steps:

- Enter “4” from main menu and press enter.
- Message “To add new Order record  
Enter order number, order date, required date, shipped date, status, comments, customer number” will be displayed prompting user to enter the required details.
  - Once the above message is printed, start giving the details without giving any space/enter.
  - Enter the required details in proper format( Date in yyyy-mm-dd), valid customer number, no quotations for string values and press enter.
  - Verify that the new record is added to the “orders” record list.
  - Main Menu should be displayed after all the records from the files are printed.
  - When user enters invalid entries, verify that the message “Invalid Entries” is printed.

#### **View “Customers” file data:**

In order to view all customer records, follow the below steps:

- Enter “5” from main menu and press enter.
- Verify that all the customer records are printed.
- Main Menu should be displayed after all the records from the files are printed.

#### **View “Employees” file data:**

In order to view all the employees’ records, follow the below steps:

- Enter “6” from main menu and press enter.
- Verify that all the employees’ records are printed.
- Main Menu should be displayed after all the records from the files are printed.

#### **View all Orders by Customer Number:**

In order to view orders for a particular customer, follow the below steps:

- Enter “7” from main menu and press enter.
- Message “Enter the Customer number you wish to see details” should be displayed prompting user to enter the valid customer number.
- Give valid Customer number and press enter
- Verify that all the order records for the given customer should be printed.
- Main Menu should be displayed after all the records from the files are printed.
- Verify that “No Customer found with that number!” is displayed invalid string format customer number is given.

#### **View “Offices” file data:**

In order to view all the Offices records, follow the below steps:

- Enter “8” from main menu and press enter.
- Verify that all the Offices records are printed.
- Main Menu should be displayed after all the records from the files are printed.

### **View “Order Details” file data:**

In order to view all the ‘Order Details’ records, follow the below steps:

- Enter “9” from main menu and press enter.
- Verify that all the ‘Order Details’ records are printed.
- Main Menu should be displayed after all the records from the files are printed.

### **View “Payments” file data:**

In order to view all the ‘Payments’ records, follow the below steps:

- Enter “10” from main menu and press enter.
- Verify that all the ‘Payments’ records are printed.
- Main Menu should be displayed after all the records from the files are printed.

### **View “Product Lines” file data:**

In order to view all the ‘Product Lines’ records, follow the below steps:

- Enter “11” from main menu and press enter.
- Verify that all the ‘Product Lines’ records are printed.
- Main Menu should be displayed after all the records from the files are printed.

### **View “Products” file data:**

In order to view all the ‘Products’ records, follow the below steps:

- Enter “12” from main menu and press enter.
- Verify that all the ‘Products’ records are printed.
- Main Menu should be displayed after all the records from the files are printed.

### **Development and testing insights with expected results:**

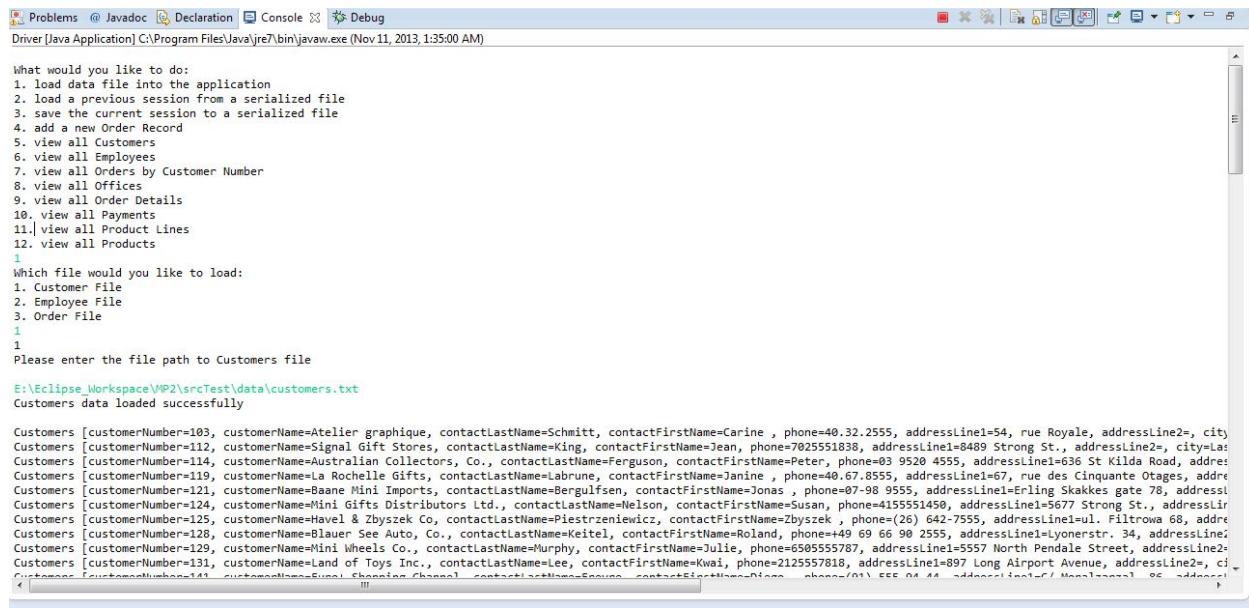
- The application handles all the possible exceptions where user can go wrong and allows the user to run the application without interruption.
- We have defined customized exception fileparsingException.java which extends exception class.
- We have used try-catch to catch all the exceptions in the main method.
- The entire file loading mechanism is handled by the FikelInputRunner.java which implements Runnable interface.
- TotalList is the file which holds all the array list of the data fils which is further used for serialization and deserialization.
- FileParser.java used for parsing the data file which allows user to openCSVlibrary for parsing the CSV data.
- Utility.java file accepts the string value and converts in to required Integer/Double/Date formats.
- **We have covered all the project requirements and additional credit work by allowing user to view/serialize/deserialize offices, orderdetails, payments, productlines and product files and loading them using multithreading the.**

- Test cases are written to test all the possible positive, negative and exception functionality of the application.

## Screen captures demonstrating all application capabilities:

### Loading Files in to application:

- Loading Customer file:



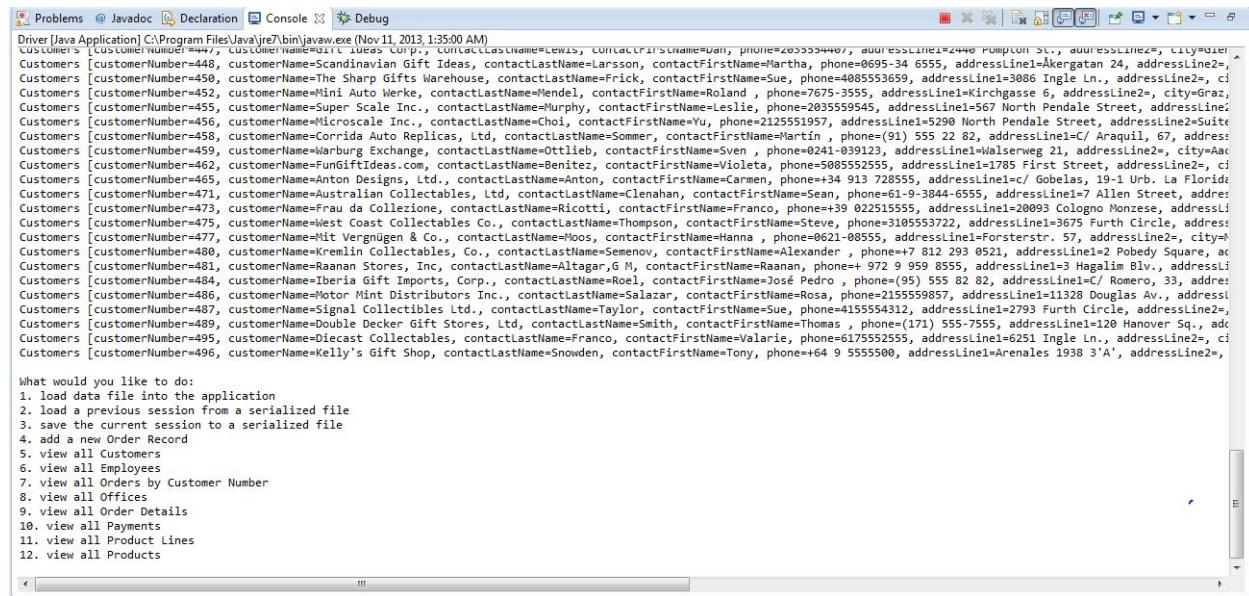
```

Problems @ Javadoc Declaration Console Debug
Driver [Java Application] C:\Program Files\Java\jre7\bin\javaw.exe (Nov 11, 2013, 1:35:00 AM)

What would you like to do:
1. load data file into the application
2. load a previous session from a serialized file
3. save the current session to a serialized file
4. add a new Order Record
5. view all Customers
6. view all Employees
7. view all Orders by Customer Number
8. view all Offices
9. view all Order Details
10. view all Payments
11. view all Product Lines
12. view all Products
1
Which file would you like to load:
1. Customer File
2. Employee File
3. Order File
1
1
Please enter the file path to Customers file
E:\Eclipse_Workspace\VP2\srcTest\data\customers.txt
Customers data loaded successfully

Customers [customerNumber=103, customerName=Atelier graphique, contactLastName=Schmit, contactFirstName=Carine , phone=+40 32 2555, addressLine1=54, rue Royale, addressLine2=, city=Dijon]
Customers [customerNumber=112, customerName=Signal Gift Stores, contactLastName=King, contactFirstName=Jean, phone=+702551838, addressLine1=4840 Strong St., addressLine2=, city=Las Vegas]
Customers [customerNumber=114, customerName=Australian Collectors, Co., contactLastName=Ferguson, contactFirstName=Peter, phone=+93 9520 4555, addressLine1=636 St Kilda Road, addressLine2=, city=Melbourne]
Customers [customerNumber=119, customerName=L' Rochelle Gifts, contactLastName=Labrune, contactFirstName=Janine , phone=+40 67 8555, addressLine1=67, rue des Cinquante Otages, addressLine2=, city=Nantes]
Customers [customerNumber=121, customerName=Baane Mini Imports, contactLastName=Bergulfisen, contactFirstName=Jonas , phone=+07 98 9555, addressLine1=Frling Skakkes gate 78, addressLine2=, city=Oslo]
Customers [customerNumber=124, customerName=Mini Gifts Distributors Ltd., contactLastName=Nelson, contactFirstName=Susan, phone=+4555514509, addressLine1=5677 Strong St., addressLine2=, city=Edmonton]
Customers [customerNumber=125, customerName=Havel & Zbyszek Co., contactLastName=Piestrzewicz, contactFirstName=Zbyszek , phone=(26) 642-7555, addressLine1=ul. Filtrowa 68, addressLine2=, city=Gdansk]
Customers [customerNumber=128, customerName=Blauer See Auto, Co., contactLastName=Keitel, contactFirstName=Roland, phone=+49 69 66 90 2555, addressLine1=Lyonerstr. 34, addressLine2=, city=Karlsruhe]
Customers [customerNumber=129, customerName=Mini Wheels Co., contactLastName=Murphy, contactFirstName=Julie, phone=+605555787, addressLine1=5557 North Pendale Street, addressLine2=, city=Vancouver]
Customers [customerNumber=131, customerName=Land of Toys Inc., contactLastName=Lee, contactFirstName=Kwai, phone=+2125557818, addressLine1=897 Long Airport Avenue, addressLine2=, city=Quebec]
Customers [customerNumber=132, customerName=Global Charming Channel, contactLastName=Hansen, contactFirstName=John, phone=+44 191 4444444, addressLine1=123 Main Street, addressLine2=, city=London]

```



```

Problems @ Javadoc Declaration Console Debug
Driver [Java Application] C:\Program Files\Java\jre7\bin\javaw.exe (Nov 11, 2013, 1:35:00 AM)

Customers [customerNumber=444, customerName=911' Tues Corp., contactLastName=Lewis, contactFirstName=Darr, phone=+205554487, addressLine1=2440 PUMPTON ST., addressLine2=, city=Ottawa]
Customers [customerNumber=448, customerName=Scandinavian Gift Ideas, contactLastName=Larsson, contactFirstName=Martha, phone=+0695-34 6555, addressLine1=Åkergratan 24, addressLine2=, city=Stockholm]
Customers [customerNumber=450, customerName=The Sharp Gifts Warehouse, contactLastName=Frick, contactFirstName=Sue, phone=+4085553659, addressLine1=3086 Ingle Ln., addressLine2=, city=San Jose]
Customers [customerNumber=452, customerName=Mini Auto Werke, contactLastName=Mendel, contactFirstName=Roland , phone=+7675-3555, addressLine1=Kirchgasse 6, addressLine2=, city=Graz]
Customers [customerNumber=455, customerName=Super Scale Inc., contactLastName=Murphy, contactFirstName=Leslie, phone=+2035559545, addressLine1=567 North Pendale Street, addressLine2=, city=Edmonton]
Customers [customerNumber=456, customerName=Microscale Inc., contactLastName=Choi, contactFirstName=Yu, phone=+2125551957, addressLine1=5290 North Pendale Street, addressLine2=Suite 200, addressLine3=, city=Edmonton]
Customers [customerNumber=458, customerName=Corrida Auto Replicas, Ltd, contactLastName=Sommer, contactFirstName=Martin , phone=(91) 555 22 82, addressLine1=C/ Araquistain, 67, addressLine2=, city=Madrid]
Customers [customerNumber=459, customerName=Warburg Exchange, contactLastName=Ottlieb, contactFirstName=Sven, phone=+0241-039123, addressLine1=Walserweg 21, addressLine2=, city=Vienna]
Customers [customerNumber=462, customerName=FunGiftIdeas.com, contactLastName=Benitez, contactFirstName=Violeta, phone=+0805552555, addressLine1=1785 First Street, addressLine2=, city=Acapulco]
Customers [customerNumber=465, customerName=Anton Designs, Ltd., contactLastName=Anton, contactFirstName=Carmen, phone=+34 913 728555, addressLine1=/ Gobelas, 19-1 Urb. La Florida]
Customers [customerNumber=471, customerName=Australian Collectables, Ltd, contactLastName=Cleahan, contactFirstName=Sean, phone=+61-9-3844-6555, addressLine1=7 Allen Street, addressLine2=, city=Perth]
Customers [customerNumber=473, customerName=Fra da Collezione, contactLastName=Ricotti, contactFirstName=Franco, phone=+39 022515555, addressLine1=20093 Cologno Monzese, addressLine2=, city=Milan]
Customers [customerNumber=475, customerName=West Coast Collectables Co., contactLastName=Thompson, contactFirstName=Steve, phone=+3675 Furth Circle, addressLine1=3675 Furth Circle, addressLine2=, city=Milan]
Customers [customerNumber=477, customerName=Vit Vergnien & Co., contactLastName=Vos, contactFirstName=Hanna , phone=+0621-08555, addressLine1=Forsterstr. 57, addressLine2=, city=Vienna]
Customers [customerNumber=480, customerName=Kremlin Collectables, Co., contactLastName=Semeno, contactFirstName=Alexander , phone=+7 812 293 0521, addressLine1=2 Pobedy Square, addressLine2=, city=Moscow]
Customers [customerNumber=481, customerName=Raanan Stores, Inc, contactLastName=Altgar,G M, contactFirstName=Raanan, phone=+ 972 9 959 8555, addressLine1=3 Hagalim Blv., addressLine2=, city=Tel Aviv]
Customers [customerNumber=484, customerName=Iberia Gift Imports, Corp., contactLastName=Reel, contactFirstName=José Pedro , phone=(95) 55 82 82, addressLine1=C/ Romero, 33, addressLine2=, city=Madrid]
Customers [customerNumber=486, customerName=Motor Mint Distributors Inc., contactLastName=Salazar, contactFirstName=Rosa, phone=+2155559857, addressLine1=11328 Douglas Av, addressLine2=, city=Vancouver]
Customers [customerNumber=487, customerName=Signal Collectibles Ltd., contactLastName=Taylor, contactFirstName=Sue, phone=+4155554312, addressLine1=2793 Furth Circle, addressLine2=, city=Milan]
Customers [customerNumber=489, customerName=Double Decker Gift Stores, Ltd, contactLastName=Smith, contactFirstName=Thomas , phone=+171 555-7555, addressLine1=120 Hanover Sq., addressLine2=, city=New York]
Customers [customerNumber=493, customerName=Diecast Collectables, contactLastName=Franco, contactFirstName=Valarie, phone=+6175552555, addressLine1=6251 Ingle Ln., addressLine2=, city=Montreal]
Customers [customerNumber=496, customerName=Kelly's Gift Shop, contactLastName=Snowden, contactFirstName=Tony, phone=+64 9 5555500, addressLine1=Arenales 1938 3'A', addressLine2=, city=Auckland]

```

## Loading Employee File:

The screenshot shows the Eclipse IDE interface with the 'Console' tab selected. The output window displays the following text:

```
Driver [Java Application] C:\Program Files\Java\jre7\bin\javaw.exe (Nov 11, 2013, 1:35:00 AM)
What would you like to do:
1. load data file into the application
2. load a previous session from a serialized file
3. save the current session to a serialized file
4. add a new Order Record
5. view all Customers
6. view all Employees
7. view all Orders by Customer Number
8. view all Offices
9. view all Order Details
10. view all Payments
11. view all Product Lines
12. view all Products
1
Which file would you like to load:
1. Customer File
2. Employee File
3. Order File
2
Please enter the file path to Employees file
E:\Eclipse_Workspace\MP2\srcTest\data\employees.txt
Employees data loaded successfully

Employees [employeeNumber=1002, lastName=Murphy, firstName=Diane, extension=x5800, email=dmurphy@classicmodelcars.com, officeCode=1, reportsTo=null, jobTitle=President]
Employees [employeeNumber=1056, lastName=Patterson, firstName=Mary, extension=x4611, email=mpatterso@classicmodelcars.com, officeCode=1, reportsTo=1002, jobTitle=VP Sales]
Employees [employeeNumber=1076, lastName=Firelli, firstName=Jeff, extension=x9273, email=jfirrelli@classicmodelcars.com, officeCode=1, reportsTo=1002, jobTitle=VP Marketing]
Employees [employeeNumber=1088, lastName=Patterson, firstName=William, extension=x4871, email=wpatterso@classicmodelcars.com, officeCode=1, reportsTo=1056, jobTitle=Sales Manager (EMEA)]
Employees [employeeNumber=1102, lastName=Bondur, firstName=Gerard, extension=x5408, email=gbondur@classicmodelcars.com, officeCode=4, reportsTo=1056, jobTitle=Sale Manager (NA)]
Employees [employeeNumber=1143, lastName=Bow, firstName=Anthony, extension=x5428, email=abow@classicmodelcars.com, officeCode=1, reportsTo=1143, jobTitle=Sales Rep]
Employees [employeeNumber=1165, lastName=Jennings, firstName=Leslie, extension=x3291, email=ljennings@classicmodelcars.com, officeCode=1, reportsTo=1143, jobTitle=Sales Rep]
Employees [employeeNumber=1166, lastName=Thompson, firstName=Leslie, extension=x4065, email=lthompson@classicmodelcars.com, officeCode=1, reportsTo=1143, jobTitle=Sales Rep]
Employees [employeeNumber=1188, lastName=Firelli, firstName=Julie, extension=x2173, email=jfirrelli@classicmodelcars.com, officeCode=2, reportsTo=1143, jobTitle=Sales Rep]
Employees [employeeNumber=1216, lastName=Patterson, firstName=Steve, extension=x4334, email=spatterso@classicmodelcars.com, officeCode=2, reportsTo=1143, jobTitle=Sales Rep]
Employees [employeeNumber=1286, lastName=Tseng, firstName=Foon Yue, extension=x2248, email=ftseng@classicmodelcars.com, officeCode=3, reportsTo=1143, jobTitle=Sales Rep]
Employees [employeeNumber=1322, lastName=Castillo, firstName=Louie, extension=x2759, email=lcastillo@classicmodelcars.com, officeCode=4, reportsTo=1143, jobTitle=Sales Rep]
```

The screenshot shows the Eclipse IDE interface with the 'Console' tab selected. The output window displays the following text:

```
Driver [Java Application] C:\Program Files\Java\jre7\bin\javaw.exe (Nov 11, 2013, 1:35:00 AM)
Employees [employeeNumber=1055, lastName=Miller, firstName=Mary, extension=x4611, email=miller50@classicmodelcars.com, officeCode=1, reportsTo=1002, jobTitle=VP Sales]
Employees [employeeNumber=1076, lastName=Firelli, firstName=Jeff, extension=x9273, email=jfirrelli@classicmodelcars.com, officeCode=1, reportsTo=1002, jobTitle=VP Marketing]
Employees [employeeNumber=1088, lastName=Patterson, firstName=William, extension=x4871, email=wpatterso@classicmodelcars.com, officeCode=6, reportsTo=1056, jobTitle=Sales Manager]
Employees [employeeNumber=1102, lastName=Bondur, firstName=Gerard, extension=x5408, email=gbondur@classicmodelcars.com, officeCode=4, reportsTo=1056, jobTitle=Sale Manager (NA)]
Employees [employeeNumber=1143, lastName=Bow, firstName=Anthony, extension=x5428, email=abow@classicmodelcars.com, officeCode=1, reportsTo=1143, jobTitle=Sales Rep]
Employees [employeeNumber=1165, lastName=Jennings, firstName=Leslie, extension=x3291, email=ljennings@classicmodelcars.com, officeCode=1, reportsTo=1143, jobTitle=Sales Rep]
Employees [employeeNumber=1166, lastName=Thompson, firstName=Leslie, extension=x4065, email=lthompson@classicmodelcars.com, officeCode=1, reportsTo=1143, jobTitle=Sales Rep]
Employees [employeeNumber=1188, lastName=Firelli, firstName=Julie, extension=x2173, email=jfirrelli@classicmodelcars.com, officeCode=2, reportsTo=1143, jobTitle=Sales Rep]
Employees [employeeNumber=1216, lastName=Patterson, firstName=Steve, extension=x4334, email=spatterso@classicmodelcars.com, officeCode=2, reportsTo=1143, jobTitle=Sales Rep]
Employees [employeeNumber=1286, lastName=Tseng, firstName=Foon Yue, extension=x2248, email=fptseng@classicmodelcars.com, officeCode=3, reportsTo=1143, jobTitle=Sales Rep]
Employees [employeeNumber=1323, lastName=Vanau, firstName=George, extension=x4102, email=gvanau@classicmodelcars.com, officeCode=3, reportsTo=1143, jobTitle=Sales Rep]
Employees [employeeNumber=1337, lastName=Bondur, firstName=Loui, extension=x6493, email=lbondur@classicmodelcars.com, officeCode=4, reportsTo=1102, jobTitle=Sales Rep]
Employees [employeeNumber=1370, lastName=Hernandez, firstName=Gerard, extension=x2028, email=ghernande@classicmodelcars.com, officeCode=4, reportsTo=1102, jobTitle=Sales Rep]
Employees [employeeNumber=1401, lastName=Castillo, firstName=Pamela, extension=x2759, email=lcastillo@classicmodelcars.com, officeCode=4, reportsTo=1102, jobTitle=Sales Rep]
Employees [employeeNumber=1501, lastName=Bott, firstName=Larry, extension=x2311, email=lbott@classicmodelcars.com, officeCode=7, reportsTo=1102, jobTitle=Saler Rep]
Employees [employeeNumber=1504, lastName=Jones, firstName=Barry, extension=x102, email=bjones@classicmodelcars.com, officeCode=7, reportsTo=1102, jobTitle=Sales Rep]
Employees [employeeNumber=1611, lastName=Fixter, firstName=Andy, extension=x101, email=afixter@classicmodelcars.com, officeCode=6, reportsTo=1088, jobTitle=Sales Rep]
Employees [employeeNumber=1612, lastName=Marsh, firstName=Peter, extension=x102, email=pmarsh@classicmodelcars.com, officeCode=6, reportsTo=1088, jobTitle=Saler Rep]
Employees [employeeNumber=1619, lastName=King, firstName=Tom, extension=x103, email=tking@classicmodelcars.com, officeCode=6, reportsTo=1088, jobTitle=Sales Rep]
Employees [employeeNumber=1621, lastName=Nishi, firstName=Mami, extension=x101, email=mnishi@classicmodelcars.com, officeCode=5, reportsTo=1056, jobTitle=Sales Rep]
Employees [employeeNumber=1625, lastName=Kato, firstName=Yoshimi, extension=x102, email=ykato@classicmodelcars.com, officeCode=5, reportsTo=1621, jobTitle=Saler Rep]
Employees [employeeNumber=1702, lastName=Gerard, firstName=Martin, extension=x2312, email=mgerard@classicmodelcars.com, officeCode=4, reportsTo=1102, jobTitle=Sales Rep]

What would you like to do:
1. load data file into the application
2. load a previous session from a serialized file
3. save the current session to a serialized file
4. add a new Order Record
5. view all Customers
6. view all Employees
7. view all Orders by Customer Number
8. view all Offices
9. view all Order Details
10. view all Payments
11. view all Product Lines
12. view all Products
```

## Loading ‘Orders’ File:

Driver [Java Application] C:\Program Files\Java\jre7\bin\javaw.exe (Nov 11, 2013, 1:35:00 AM)

What would you like to do:

1. load data file into the application
2. load a previous session from a serialized file
3. save the current session to a serialized file
4. add a new Order Record
5. view all Customers
6. view all Employees
7. view all Orders by Customer Number
8. view all Offices
9. view all Order Details
10. view all Payments
11. view all Product Lines
12. view all Products

1

Which file would you like to load:

1. Customer File
2. Employee File
3. Order File

3

Please enter the file path to Orders file

E:\Eclipse\_Workspace\MP2\srcTest\data\orders.txt

Orders data loaded successfully

```
Orders [orderNumber=10100, orderDate=Mon Jan 06 00:00:00 CST 2003, requiredDate=Mon Jan 13 00:00:00 CST 2003, shippedDate=Fri Jan 10 00:00:00 CST 2003, status=Shipped, comments=, customerNumber=10101, orderDate=Thu Jan 09 00:00:00 CST 2003, requiredDate=Sat Jan 18 00:00:00 CST 2003, shippedDate=Sat Jan 11 00:00:00 CST 2003, status=Shipped, comments=Che, orderNumber=10102, orderDate=Fri Jan 10 00:00:00 CST 2003, requiredDate=Sat Jan 18 00:00:00 CST 2003, shippedDate=Tue Jan 14 00:00:00 CST 2003, status=Shipped, comments=, orderNumber=10103, orderDate=Wed Jan 29 00:00:00 CST 2003, requiredDate=Fri Feb 07 00:00:00 CST 2003, shippedDate=Sun Feb 02 00:00:00 CST 2003, status=Shipped, comments=, orderNumber=10104, orderDate=Fri Jan 31 00:00:00 CST 2003, requiredDate=Sun Feb 09 00:00:00 CST 2003, shippedDate=Sat Feb 01 00:00:00 CST 2003, status=Shipped, comments=, orderNumber=10105, orderDate=Tue Feb 11 00:00:00 CST 2003, requiredDate=Fri Feb 21 00:00:00 CST 2003, shippedDate=Wed Feb 12 00:00:00 CST 2003, status=Shipped, comments=, orderNumber=10106, orderDate=Mon Feb 17 00:00:00 CST 2003, requiredDate=Mon Feb 24 00:00:00 CST 2003, shippedDate=Fri Feb 21 00:00:00 CST 2003, status=Shipped, comments=, orderNumber=10107, orderDate=Mon Feb 24 00:00:00 CST 2003, requiredDate=Mon Mar 03 00:00:00 CST 2003, shippedDate=Wed Feb 26 00:00:00 CST 2003, status=Shipped, comments=Dif, orderNumber=10108, orderDate=Mon Mar 03 00:00:00 CST 2003, requiredDate=Wed Mar 12 00:00:00 CST 2003, shippedDate=Sat Mar 08 00:00:00 CST 2003, status=Shipped, comments=, orderNumber=10109, orderDate=Mon Mar 10 00:00:00 CST 2003, requiredDate=Wed Mar 19 00:00:00 CST 2003, shippedDate=Tue Mar 11 00:00:00 CST 2003, status=Shipped, comments=Cus, orderNumber=10110, orderDate=Tue Mar 18 00:00:00 CST 2003, requiredDate=Mon Mar 24 00:00:00 CST 2003, shippedDate=Thu Mar 20 00:00:00 CST 2003, status=Shipped, comments=, orderNumber=10111, orderDate=Tue Mar 25 00:00:00 CST 2003, requiredDate=Mon Mar 31 00:00:00 CST 2003, shippedDate=Sun Mar 23 00:00:00 CST 2003, status=Shipped, comments= ]
```

Driver [Java Application] C:\Program Files\Java\jre7\bin\javaw.exe (Nov 11, 2013, 1:35:00 AM)

```
Orders [orderNumber=10405, orderDate=Thu Apr 14 00:00:00 CDT 2005, requiredDate=Sun Apr 24 00:00:00 CDT 2005, shippedDate=Wed Apr 20 00:00:00 CDT 2005, status=Shipped, comments=, customerNumber=10406, orderDate=Fri Apr 15 00:00:00 CDT 2005, requiredDate=Mon Apr 25 00:00:00 CDT 2005, shippedDate=Thu Apr 21 00:00:00 CDT 2005, status=Disputed, comments=Cl, orderNumber=10407, orderDate=Fri Apr 22 00:00:00 CDT 2005, requiredDate=Wed May 04 00:00:00 CDT 2005, shippedDate=null, status=On Hold, comments=Customer credit limit exceeded, orderNumber=10408, orderDate=Fri Apr 22 00:00:00 CDT 2005, requiredDate=Fri Apr 29 00:00:00 CDT 2005, shippedDate=Wed Apr 27 00:00:00 CDT 2005, status=Shipped, comments=, orderNumber=10409, orderDate=Sat Apr 23 00:00:00 CDT 2005, requiredDate=Thu May 05 00:00:00 CDT 2005, shippedDate=Sun Apr 24 00:00:00 CDT 2005, status=Shipped, comments=, orderNumber=10410, orderDate=Fri Apr 29 00:00:00 CDT 2005, requiredDate=Tue May 10 00:00:00 CDT 2005, shippedDate=Sat Apr 30 00:00:00 CDT 2005, status=Shipped, comments=, orderNumber=10411, orderDate=Sun May 01 00:00:00 CDT 2005, requiredDate=Sun May 08 00:00:00 CDT 2005, shippedDate=Fri May 06 00:00:00 CDT 2005, status=Shipped, comments=, orderNumber=10412, orderDate=Tue May 03 00:00:00 CDT 2005, requiredDate=Fri May 13 00:00:00 CDT 2005, shippedDate=Thu May 05 00:00:00 CDT 2005, status=Shipped, comments=, orderNumber=10413, orderDate=Thu May 05 00:00:00 CDT 2005, requiredDate=Sat May 14 00:00:00 CDT 2005, shippedDate=Mon May 09 00:00:00 CDT 2005, status=Shipped, comments=Cus, orderNumber=10414, orderDate=Fri May 06 00:00:00 CDT 2005, requiredDate=Fri May 13 00:00:00 CDT 2005, shippedDate=null, status=On Hold, comments=Customer credit limit exceeded, orderNumber=10415, orderDate=Mon May 09 00:00:00 CDT 2005, requiredDate=Fri May 20 00:00:00 CDT 2005, shippedDate=Thu May 12 00:00:00 CDT 2005, status=Disputed, comments=Cl, orderNumber=10416, orderDate=Tue May 10 00:00:00 CDT 2005, requiredDate=Mon May 16 00:00:00 CDT 2005, shippedDate=Sat May 14 00:00:00 CDT 2005, status=Shipped, comments=, orderNumber=10417, orderDate=Fri May 13 00:00:00 CDT 2005, requiredDate=Thu May 19 00:00:00 CDT 2005, shippedDate=Thu May 19 00:00:00 CDT 2005, status=Disputed, comments=Cl, orderNumber=10418, orderDate=Mon May 16 00:00:00 CDT 2005, requiredDate=Tue May 24 00:00:00 CDT 2005, shippedDate=Fri May 20 00:00:00 CDT 2005, status=Shipped, comments=, orderNumber=10419, orderDate=Tue May 17 00:00:00 CDT 2005, requiredDate=Sat May 28 00:00:00 CDT 2005, shippedDate=Thu May 19 00:00:00 CDT 2005, status=Shipped, comments=, orderNumber=10420, orderDate=Sun May 29 00:00:00 CDT 2005, requiredDate=Tue Jun 07 00:00:00 CDT 2005, shippedDate=null, status=In Process, comments=, customerNumber=282, orderNumber=10421, orderDate=Sun May 29 00:00:00 CDT 2005, requiredDate=Mon Jun 06 00:00:00 CDT 2005, shippedDate=null, status=In Process, comments=Custom shipping instructions, orderNumber=10422, orderDate=Mon May 30 00:00:00 CDT 2005, requiredDate=Sat Jun 11 00:00:00 CDT 2005, shippedDate=null, status=In Process, comments=, customerNumber=157, orderNumber=10423, orderDate=Mon Jun 05 00:00:00 CDT 2005, requiredDate=Sun Jun 05 00:00:00 CDT 2005, shippedDate=null, status=In Process, comments=, customerNumber=314, orderNumber=10424, orderDate=Tue May 31 00:00:00 CDT 2005, requiredDate=Wed Jun 08 00:00:00 CDT 2005, shippedDate=null, status=In Process, comments=, customerNumber=141, orderNumber=10425, orderDate=Tue May 31 00:00:00 CDT 2005, requiredDate=Tue Jun 07 00:00:00 CDT 2005, shippedDate=null, status=In Process, comments=, customerNumber=119]
```

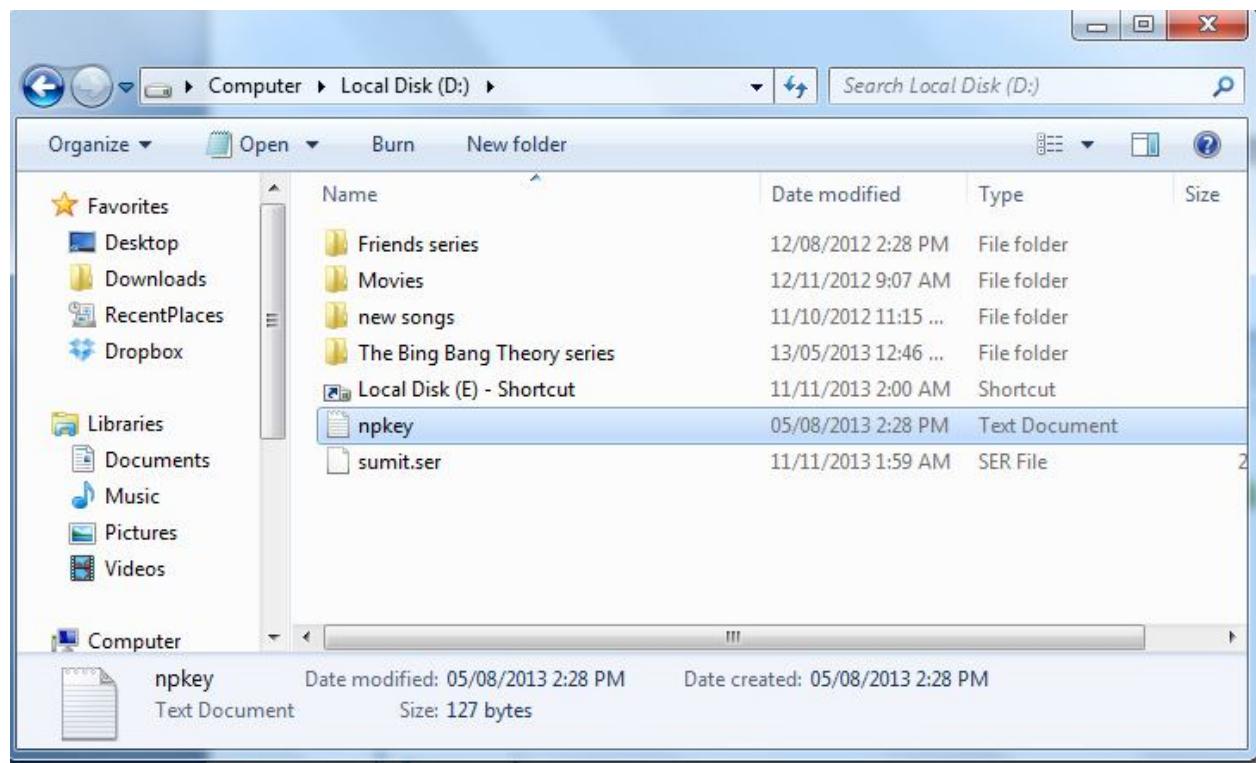
What would you like to do:

1. load data file into the application
2. load a previous session from a serialized file
3. save the current session to a serialized file
4. add a new Order Record
5. view all Customers
6. view all Employees
7. view all Orders by Customer Number
8. view all Offices
9. view all Order Details
10. view all Payments
11. view all Product Lines
12. view all Products

## Serialization:

The screenshot shows a Java application running in an IDE's console window. The window title is "Driver [Java Application] C:\Program Files\Java\jre7\bin\javaw.exe (Nov 11, 2013, 1:35:00 AM)". The menu bar includes "Problems", "@ Javadoc", "Declaration", "Console", and "Debug".

```
What would you like to do:  
1. load data file into the application  
2. load a previous session from a serialized file  
3. save the current session to a serialized file  
4. add a new Order Record  
5. view all Customers  
6. view all Employees  
7. view all Orders by Customer Number  
8. view all Offices  
9. view all Order Details  
10. view all Payments  
11. view all Product Lines  
12. view all Products  
3  
  
Enter Path to save the serialized file  
  
D:/Sumit.ser  
Total Object Serialization done!  
  
What would you like to do:  
1. load data file into the application  
2. load a previous session from a serialized file  
3. save the current session to a serialized file  
4. add a new Order Record  
5. view all Customers  
6. view all Employees  
7. view all Orders by Customer Number  
8. view all Offices  
9. view all Order Details  
10. view all Payments  
11. view all Product Lines  
12. view all Products
```



### Deserialization:

The screenshot shows an IDE interface with several tabs at the top: Problems, Javadoc, Declaration, Console, and Debug. The Console tab is active, displaying the output of a Java application named 'Driver [Java Application]'. The output lists numerous instances of the 'OrderDetails' class, each with specific parameters: orderNumber, productCode, quantityOrdered, priceEach, and orderLineNumber. The list is quite long, spanning multiple lines of code. Below this list, a prompt asks 'What would you like to do:' followed by a numbered menu of 12 options, ranging from loading data to viewing various records.

```
Driver [Java Application] C:\Program Files\Java\jre7\bin\javaw.exe (Nov 11, 2013, 1:35:00 AM)
OrderDetails [orderNumber=10423, productCode=S18_3320, quantityOrdered=21, priceEach=80.36, orderLineNumber=5]
OrderDetails [orderNumber=10423, productCode=S18_3320, quantityOrdered=21, priceEach=80.36, orderLineNumber=5]
OrderDetails [orderNumber=10423, productCode=S24_4258, quantityOrdered=28, priceEach=78.89, orderLineNumber=4]
OrderDetails [orderNumber=10424, productCode=S10_1949, quantityOrdered=50, priceEach=201.44, orderLineNumber=6]
OrderDetails [orderNumber=10424, productCode=S12_1666, quantityOrdered=49, priceEach=121.64, orderLineNumber=3]
OrderDetails [orderNumber=10424, productCode=S18_1897, quantityOrdered=54, priceEach=108.5, orderLineNumber=5]
OrderDetails [orderNumber=10424, productCode=S18_4668, quantityOrdered=26, priceEach=40.25, orderLineNumber=4]
OrderDetails [orderNumber=10424, productCode=S32_3522, quantityOrdered=44, priceEach=54.94, orderLineNumber=2]
OrderDetails [orderNumber=10424, productCode=S700_2824, quantityOrdered=46, priceEach=85.98, orderLineNumber=1]
OrderDetails [orderNumber=10425, productCode=S10_4962, quantityOrdered=38, priceEach=131.49, orderLineNumber=12]
OrderDetails [orderNumber=10425, productCode=S12_4473, quantityOrdered=33, priceEach=95.99, orderLineNumber=4]
OrderDetails [orderNumber=10425, productCode=S18_2238, quantityOrdered=28, priceEach=147.36, orderLineNumber=3]
OrderDetails [orderNumber=10425, productCode=S18_2319, quantityOrdered=38, priceEach=117.82, orderLineNumber=7]
OrderDetails [orderNumber=10425, productCode=S18_2432, quantityOrdered=19, priceEach=48.62, orderLineNumber=10]
OrderDetails [orderNumber=10425, productCode=S18_3232, quantityOrdered=28, priceEach=140.55, orderLineNumber=8]
OrderDetails [orderNumber=10425, productCode=S18_4600, quantityOrdered=38, priceEach=107.76, orderLineNumber=13]
OrderDetails [orderNumber=10425, productCode=S24_1444, quantityOrdered=55, priceEach=53.75, orderLineNumber=1]
OrderDetails [orderNumber=10425, productCode=S24_2300, quantityOrdered=49, priceEach=127.79, orderLineNumber=9]
OrderDetails [orderNumber=10425, productCode=S24_2840, quantityOrdered=31, priceEach=31.82, orderLineNumber=5]
OrderDetails [orderNumber=10425, productCode=S32_1268, quantityOrdered=41, priceEach=83.79, orderLineNumber=11]
OrderDetails [orderNumber=10425, productCode=S32_2509, quantityOrdered=11, priceEach=50.32, orderLineNumber=6]
OrderDetails [orderNumber=10425, productCode=S50_1392, quantityOrdered=18, priceEach=94.92, orderLineNumber=2]

What would you like to do:
1. load data file into the application
2. load a previous session from a serialized file
3. save the current session to a serialized file
4. add a new Order Record
5. view all Customers
6. view all Employees
7. view all Orders by Customer Number
8. view all Offices
9. view all Order Details
10. view all Payments
11. view all Product Lines
12. view all Products
```

### Adding a new order record:

```
Problems @ Javadoc Console Debug
Driver (2) [Java Application] C:\Program Files\Java\jre7\bin\javaw.exe (Nov 10, 2013, 11:15:40 PM)
Main Menu:
1. Load data file into the application
2. Load a previous session from a serialized file
3. Save the current session to a serialized file
4. Add a new Order Record
5. View all Customers
6. View all Employees
7. View all Orders by Customer Number
8. View all Offices
9. View all Order Details
10. View all Payments
11. View all Product Lines
12. View all Products

4
To add new Order record
Enter order number,order date, required date, shipped date, status, comments, customer number

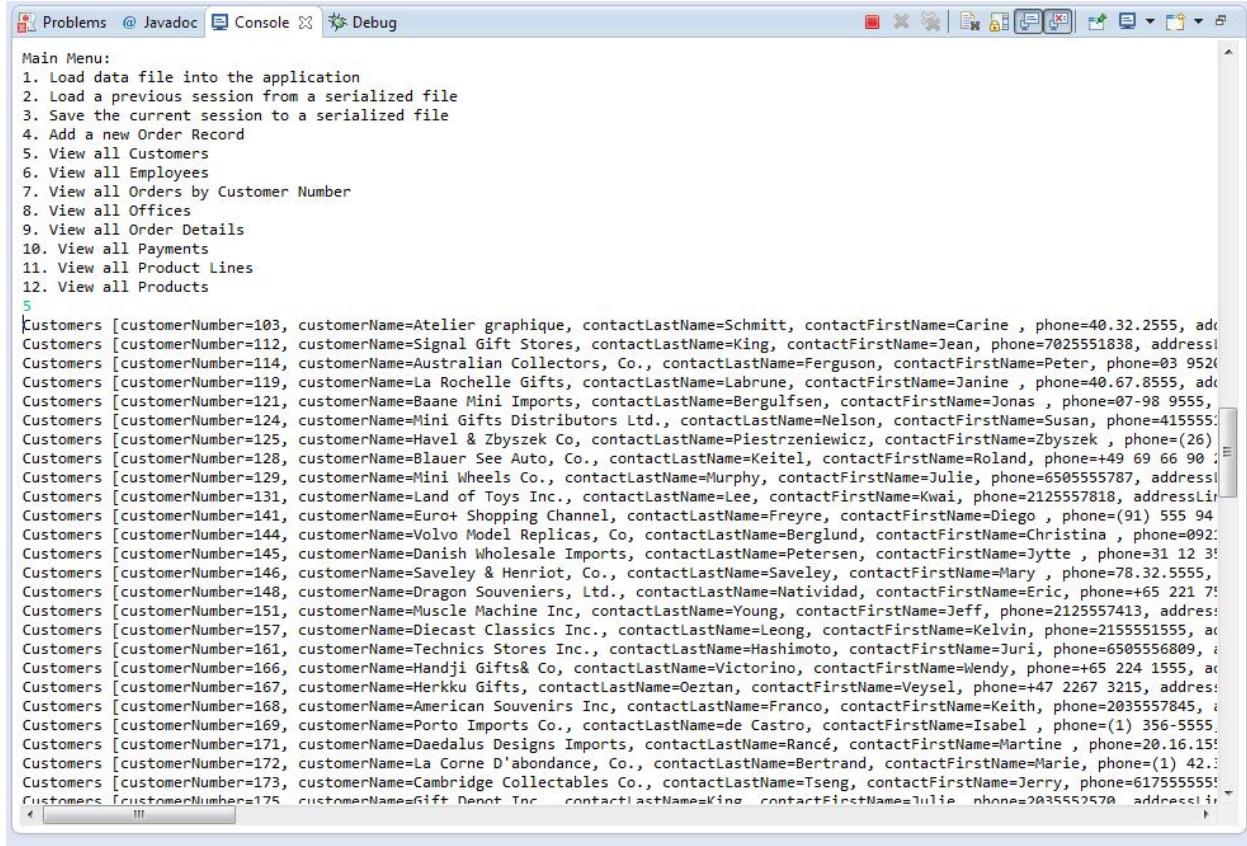
201983
2014-01-01
2014-01-01
2014-01-01
shipped
done
103
New Order record added

Orders [orderNumber=10100, orderDate=Mon Jan 06 00:00:00 CST 2003, requiredDate=Mon Jan 13 00:00:00 CST 2003, shippedDate=Fri Jan 10 00:00:00 CST 2003]
Orders [orderNumber=10101, orderDate=Thu Jan 09 00:00:00 CST 2003, requiredDate=Sat Jan 18 00:00:00 CST 2003, shippedDate=Sat Jan 11 00:00:00 CST 2003]
Orders [orderNumber=10102, orderDate=Fri Jan 10 00:00:00 CST 2003, requiredDate=Sat Jan 18 00:00:00 CST 2003, shippedDate=Tue Jan 14 00:00:00 CST 2003]
Orders [orderNumber=10103, orderDate=Wed Jan 29 00:00:00 CST 2003, requiredDate=Fri Feb 07 00:00:00 CST 2003, shippedDate=Sun Feb 02 00:00:00 CST 2003]
Orders [orderNumber=10104, orderDate=Fri Jan 31 00:00:00 CST 2003, requiredDate=Sun Feb 09 00:00:00 CST 2003, shippedDate=Sat Feb 01 00:00:00 CST 2003]
Orders [orderNumber=10105, orderDate=Tue Feb 11 00:00:00 CST 2003, requiredDate=Fri Feb 21 00:00:00 CST 2003, shippedDate=Wed Feb 12 00:00:00 CST 2003]
Orders [orderNumber=10106, orderDate=Mon Feb 17 00:00:00 CST 2003, requiredDate=Mon Feb 24 00:00:00 CST 2003, shippedDate=Fri Feb 21 00:00:00 CST 2003]
Orders [orderNumber=10107, orderDate=Mon Feb 24 00:00:00 CST 2003, requiredDate=Mon Mar 03 00:00:00 CST 2003, shippedDate=Wed Feb 26 00:00:00 CST 2003]
Orders [orderNumber=10108, orderDate=Mon Mar 03 00:00:00 CST 2003, requiredDate=Wed Mar 12 00:00:00 CST 2003, shippedDate=Sat Mar 08 00:00:00 CST 2003]
Orders [orderNumber=10109, orderDate=Mon Mar 10 00:00:00 CST 2003, requiredDate=Wed Mar 19 00:00:00 CST 2003, shippedDate=Tue Mar 11 00:00:00 CST 2003]
Orders [orderNumber=10110, orderDate=Tue Mar 18 00:00:00 CST 2003, requiredDate=Mon Mar 24 00:00:00 CST 2003, shippedDate=Thu Mar 20 00:00:00 CST 2003]
Orders [orderNumber=10111, orderDate=Tue Mar 25 00:00:00 CST 2003, requiredDate=Mon Mar 31 00:00:00 CST 2003, shippedDate=Sun Mar 30 00:00:00 CST 2003]
```

```
Problems @ Javadoc Console Debug
Driver (2) [Java Application] C:\Program Files\Java\jre7\bin\javaw.exe (Nov 10, 2013, 11:15:40 PM)
Orders [orderNumber=10405, orderDate=Thu Apr 14 00:00:00 CDT 2005, requiredDate=Sun Apr 24 00:00:00 CDT 2005, shippedDate=Wed Apr 20 00:00:00 CDT 2005]
Orders [orderNumber=10406, orderDate=Fri Apr 15 00:00:00 CDT 2005, requiredDate=Mon Apr 25 00:00:00 CDT 2005, shippedDate=Thu Apr 21 00:00:00 CDT 2005]
Orders [orderNumber=10407, orderDate=Fri Apr 22 00:00:00 CDT 2005, requiredDate=Wed May 04 00:00:00 CDT 2005, shippedDate=null, status:open]
Orders [orderNumber=10408, orderDate=Fri Apr 22 00:00:00 CDT 2005, requiredDate=Fri Apr 29 00:00:00 CDT 2005, shippedDate=Wed Apr 27 00:00:00 CDT 2005]
Orders [orderNumber=10409, orderDate=Sat Apr 23 00:00:00 CDT 2005, requiredDate=Thu May 05 00:00:00 CDT 2005, shippedDate=Sun Apr 24 00:00:00 CDT 2005]
Orders [orderNumber=10410, orderDate=Fri Apr 29 00:00:00 CDT 2005, requiredDate=Tue May 10 00:00:00 CDT 2005, shippedDate=Sat Apr 30 00:00:00 CDT 2005]
Orders [orderNumber=10411, orderDate=Sun May 01 00:00:00 CDT 2005, requiredDate=Sun May 08 00:00:00 CDT 2005, shippedDate=Fri May 06 00:00:00 CDT 2005]
Orders [orderNumber=10412, orderDate=Tue May 03 00:00:00 CDT 2005, requiredDate=Fri May 13 00:00:00 CDT 2005, shippedDate=Thu May 05 00:00:00 CDT 2005]
Orders [orderNumber=10413, orderDate=Thu May 05 00:00:00 CDT 2005, requiredDate=Sat May 14 00:00:00 CDT 2005, shippedDate=Mon May 09 00:00:00 CDT 2005]
Orders [orderNumber=10414, orderDate=Fri May 06 00:00:00 CDT 2005, requiredDate=Fri May 13 00:00:00 CDT 2005, shippedDate=null, status:open]
Orders [orderNumber=10415, orderDate=Mon May 09 00:00:00 CDT 2005, requiredDate=Fri May 20 00:00:00 CDT 2005, shippedDate=Thu May 12 00:00:00 CDT 2005]
Orders [orderNumber=10416, orderDate=Tue May 10 00:00:00 CDT 2005, requiredDate=Mon May 16 00:00:00 CDT 2005, shippedDate=Sat May 14 00:00:00 CDT 2005]
Orders [orderNumber=10417, orderDate=Fri May 13 00:00:00 CDT 2005, requiredDate=Thu May 19 00:00:00 CDT 2005, shippedDate=Thu May 19 00:00:00 CDT 2005]
Orders [orderNumber=10418, orderDate=Mon May 16 00:00:00 CDT 2005, requiredDate=Tue May 24 00:00:00 CDT 2005, shippedDate=Fri May 20 00:00:00 CDT 2005]
Orders [orderNumber=10419, orderDate=Tue May 17 00:00:00 CDT 2005, requiredDate=Sat May 28 00:00:00 CDT 2005, shippedDate=Thu May 19 00:00:00 CDT 2005]
Orders [orderNumber=10420, orderDate=Sun May 29 00:00:00 CDT 2005, requiredDate=Tue Jun 07 00:00:00 CDT 2005, shippedDate=null, status:open]
Orders [orderNumber=10421, orderDate=Sun May 29 00:00:00 CDT 2005, requiredDate=Mon Jun 06 00:00:00 CDT 2005, shippedDate=null, status:open]
Orders [orderNumber=10422, orderDate=Mon May 30 00:00:00 CDT 2005, requiredDate=Sat Jun 11 00:00:00 CDT 2005, shippedDate=null, status:open]
Orders [orderNumber=10423, orderDate=Mon May 30 00:00:00 CDT 2005, requiredDate=Sun Jun 05 00:00:00 CDT 2005, shippedDate=null, status:open]
Orders [orderNumber=10424, orderDate=Tue May 31 00:00:00 CDT 2005, requiredDate=Wed Jun 08 00:00:00 CDT 2005, shippedDate=null, status:open]
Orders [orderNumber=10425, orderDate=Tue May 31 00:00:00 CDT 2005, requiredDate=Tue Jun 07 00:00:00 CDT 2005, shippedDate=null, status:open]
Orders [orderNumber=72348, orderDate=Wed Jan 01 00:00:00 CST 2014, requiredDate=Wed Jan 01 00:00:00 CST 2014, shippedDate=Wed Jan 01 00:00:00 CST 2014]

Main Menu:
1. Load data file into the application
2. Load a previous session from a serialized file
3. Save the current session to a serialized file
4. Add a new Order Record
5. View all Customers
6. View all Employees
7. View all Orders by Customer Number
8. View all Offices
9. View all Order Details
10. View all Payments
11. View all Product Lines
12. View all Products
```

## View all the 'Customers' records:



The screenshot shows a Java IDE interface with a central code editor window. The title bar of the window reads "View all the 'Customers' records:". The code editor displays a list of customer records from a database, starting with a main menu and followed by individual customer entries. The main menu items are:

- 1. Load data file into the application
- 2. Load a previous session from a serialized file
- 3. Save the current session to a serialized file
- 4. Add a new Order Record
- 5. View all Customers
- 6. View all Employees
- 7. View all Orders by Customer Number
- 8. View all Offices
- 9. View all Order Details
- 10. View all Payments
- 11. View all Product Lines
- 12. View all Products

Below the menu, the code editor displays the following list of customers:

```
Main Menu:  
1. Load data file into the application  
2. Load a previous session from a serialized file  
3. Save the current session to a serialized file  
4. Add a new Order Record  
5. View all Customers  
6. View all Employees  
7. View all Orders by Customer Number  
8. View all Offices  
9. View all Order Details  
10. View all Payments  
11. View all Product Lines  
12. View all Products  
  
5  
Customers [customerNumber=103, customerName=Atelier graphique, contactLastName=Schmitt, contactFirstName=Carine , phone=40.32.2555, addressLine1=24 rue de la Chaumiere, city=Paris, postalCode=75004, country=France]  
Customers [customerNumber=112, customerName=Signal Gift Stores, contactLastName=King, contactFirstName=Jean, phone=7025551838, addressLine1=14 rue du Commerce, city=Paris, postalCode=75001, country=France]  
Customers [customerNumber=114, customerName=Australian Collectors, Co., contactLastName=Ferguson, contactFirstName=Peter, phone=03 9520 1234, addressLine1=18 Pitt Street, city=Sydney, postalCode=2000, country=Australia]  
Customers [customerNumber=119, customerName=La Rochelle Gifts, contactLastName=Labrune, contactFirstName=Janine , phone=40.67.8555, addressLine1=22 rue des Saussaies, city=La Rochelle, postalCode=17000, country=France]  
Customers [customerNumber=121, customerName=Baane Mini Imports, contactLastName=Bergulsen, contactFirstName=Jonas , phone=07-98 9555, addressLine1=12 rue de la Paix, city=Paris, postalCode=75001, country=France]  
Customers [customerNumber=124, customerName=Mini Gifts Distributors Ltd., contactLastName=Nelson, contactFirstName=Susan, phone=415555:5555]  
Customers [customerNumber=125, customerName=Havel & Zbyszek Co, contactLastName=Piestrzewicz, contactFirstName=Zbyszek , phone=(26) 50555555]  
Customers [customerNumber=128, customerName=Blauer See Auto, Co., contactLastName=Keitel, contactFirstName=Roland, phone=+49 69 66 90 1234]  
Customers [customerNumber=129, customerName=Mini Wheels Co., contactLastName=Murphy, contactFirstName=Julie, phone=6505555787, addressLine1=123 Main Street, city=San Francisco, postalCode=94103, country=USA]  
Customers [customerNumber=131, customerName=Land of Toys Inc., contactLastName=Lee, contactFirstName=Kwai, phone=2125557818, addressLine1=123 Main Street, city=New York, postalCode=10001, country=USA]  
Customers [customerNumber=141, customerName=Euro+ Shopping Channel, contactLastName=Freyre, contactFirstName=Diego , phone=(91) 555 94 5555]  
Customers [customerNumber=144, customerName=Volvo Model Replicas, Co, contactLastName=Berglund, contactFirstName=Christina , phone=092: 55555555]  
Customers [customerNumber=145, customerName=Danish Wholesale Imports, contactLastName=Petersen, contactFirstName=Jytte , phone=31 12 34 5555]  
Customers [customerNumber=146, customerName=Saveley & Henriot, Co., contactLastName=Saveley, contactFirstName=Mary , phone=78.32.5555, addressLine1=123 Main Street, city=London, postalCode=SW1A 2AA, country=UK]  
Customers [customerNumber=148, customerName=Dragon Souveniers, Ltd., contactLastName=Natividad, contactFirstName=Eric, phone=+65 221 7890]  
Customers [customerNumber=151, customerName=Muscle Machine Inc, contactLastName=Young, contactFirstName=Jeff, phone=2125557413, addressLine1=123 Main Street, city=New York, postalCode=10001, country=USA]  
Customers [customerNumber=157, customerName=Diecast Classics Inc., contactLastName=Leong, contactFirstName=Kelvin, phone=2155551555, addressLine1=123 Main Street, city=London, postalCode=SW1A 2AA, country=UK]  
Customers [customerNumber=161, customerName=Technics Stores Inc., contactLastName=Hashimoto, contactFirstName=Juri, phone=65055556809, addressLine1=123 Main Street, city=Singapore, postalCode=12345, country=Singapore]  
Customers [customerNumber=166, customerName=Handji Gifts& Co, contactLastName=Victorino, contactFirstName=Wendy, phone=+65 224 1555, addressLine1=123 Main Street, city=Singapore, postalCode=12345, country=Singapore]  
Customers [customerNumber=167, customerName=Herkku Gifts, contactLastName=Oeztan, contactFirstName=Veysel, phone=+47 2267 3215, addressLine1=123 Main Street, city=Istanbul, postalCode=34340, country=Turkey]  
Customers [customerNumber=168, customerName=American Souvenirs Inc, contactLastName=Franco, contactFirstName=Keith, phone=2035557845, addressLine1=123 Main Street, city=New York, postalCode=10001, country=USA]  
Customers [customerNumber=169, customerName=Porto Imports Co., contactLastName=de Castro, contactFirstName=Isabel , phone=(1) 356-5555]  
Customers [customerNumber=171, customerName=Daedalus Designs Imports, contactLastName=Rancé, contactFirstName=Martine , phone=20.16.1555]  
Customers [customerNumber=172, customerName=La Corne D'abondance, Co., contactLastName=Bertrand, contactFirstName=Marie, phone=(1) 42.12.1212]  
Customers [customerNumber=173, customerName=Cambridge Collectables Co., contactLastName=Tseng, contactFirstName=Jerry, phone=6175555555]  
Customers [customerNumber=175, customerName=Gift Denot Inc , contactLastName=King, contactFirstName=Julie, phone=2035552570 addressLine1=123 Main Street, city=London, postalCode=SW1A 2AA, country=UK]
```

The screenshot shows a Java IDE interface with several tabs at the top: Problems, Javadoc, Console, and Debug. The main area displays a list of customer records from a database. Below the list is a 'Main Menu' with numbered options:

```
Customers [customerNumber=448, customerName=Scandinavian Gift Ideas, contactLastName=Larsson, contactFirstName=Martha, phone=0695-34 b]
Customers [customerNumber=450, customerName=The Sharp Gifts Warehouse, contactLastName=Frick, contactFirstName=Sue, phone=4085553659, i
Customers [customerNumber=452, customerName=Mini Auto Werke, contactLastName=Mendel, contactFirstName=Roland , phone=7675-3555, addre
Customers [customerNumber=455, customerName=Super Scale Inc., contactLastName=Murphy, contactFirstName=Leslie, phone=2035559545, addre
Customers [customerNumber=456, customerName=Microscale Inc., contactLastName=Choi, contactFirstName=YU, phone=2125551957, addressLine1
Customers [customerNumber=458, customerName=Corrida Auto Replicas, Ltd, contactLastName=Sommer, contactFirstName=Martín , phone=(91) 5
Customers [customerNumber=459, customerName=Warburg Exchange, contactLastName=Ottlieb, contactFirstName=Sven , phone=0241-039123, addre
Customers [customerNumber=462, customerName=FunGiftIdeas.com, contactLastName=Benitez, contactFirstName=Violeta, phone=5085552555, addre
Customers [customerNumber=465, customerName=Anton Designs, Ltd., contactLastName=Anton, contactFirstName=Carmen, phone=+34 913 728555,
Customers [customerNumber=471, customerName=Australian Collectables, Ltd, contactLastName=Clenahan, contactFirstName=Sean, phone=61-9-1
Customers [customerNumber=473, customerName=Frau da Collezione, contactLastName=Ricotti, contactFirstName=Franco, phone=+39 022515555,
Customers [customerNumber=475, customerName=West Coast Collectables Co., contactLastName=Thompson, contactFirstName=Steve, phone=31055
Customers [customerNumber=477, customerName=Mit Vergnügen & Co., contactLastName=Moos, contactFirstName=Hanna , phone=0621-085555, addre
Customers [customerNumber=480, customerName=Kremlin Collectables, Co., contactLastName=Semenov, contactFirstName=Alexander , phone=+7 8
Customers [customerNumber=481, customerName=Raanan Stores, Inc, contactLastName=Altagar,G M, contactFirstName=Raanan, phone=+ 972 9 95
Customers [customerNumber=484, customerName=Iberia Gift Imports, Corp., contactLastName=Roel, contactFirstName=José Pedro , phone=(95)
Customers [customerNumber=486, customerName=Motor Mint Distributors Inc., contactLastName=Salazar, contactFirstName=Rosa, phone=2155559
Customers [customerNumber=487, customerName=Signal Collectibles Ltd., contactLastName=Taylor, contactFirstName=Sue, phone=4155554312, a
Customers [customerNumber=489, customerName=Double Decker Gift Stores, Ltd, contactLastName=Smith, contactFirstName=Thomas , phone=(17
Customers [customerNumber=495, customerName=Diecast Collectables, contactLastName=Franco, contactFirstName=Valarie, phone=6175552555, a
Customers [customerNumber=496, customerName=Kelly's Gift Shop, contactLastName=Snowden, contactFirstName=Tony, phone=+64 9 5555500, add
```

Main Menu:

1. Load data file into the application
2. Load a previous session from a serialized file
3. Save the current session to a serialized file
4. Add a new Order Record
5. View all Customers
6. View all Employees
7. View all Orders by Customer Number
8. View all Offices
9. View all Order Details
10. View all Payments
11. View all Product Lines
12. View all Products

### View all the 'Employee' records:

Main Menu:

1. Load data file into the application
2. Load a previous session from a serialized file
3. Save the current session to a serialized file
4. Add a new Order Record
5. View all Customers
6. View all Employees
7. View all Orders by Customer Number
8. View all Offices
9. View all Order Details
10. View all Payments
11. View all Product Lines
12. View all Products

6

```
Employees [employeeNumber=1002, lastName=Murphy, firstName=Diane, extension=x5800, email=dmurphy@classicmodelcars.com, officeCode=1, reportsTo=1056]
Employees [employeeNumber=1056, lastName=Patterson, firstName=Mary, extension=x4611, email=mpatterso@classicmodelcars.com, officeCode=1]
Employees [employeeNumber=1076, lastName=Firrelli, firstName=Jeff, extension=x9273, email=jfirrelli@classicmodelcars.com, officeCode=1]
Employees [employeeNumber=1088, lastName=Patterson, firstName=William, extension=x4871, email=wpatterson@classicmodelcars.com, officeCode=1]
Employees [employeeNumber=1102, lastName=Bondur, firstName=Gerard, extension=x5408, email=gbondur@classicmodelcars.com, officeCode=4, reportsTo=1137]
Employees [employeeNumber=1143, lastName=Bow, firstName=Anthony, extension=x5428, email=abow@classicmodelcars.com, officeCode=1, reportsTo=1165]
Employees [employeeNumber=1165, lastName=Jennings, firstName=Leslie, extension=x3291, email=ljennings@classicmodelcars.com, officeCode=1]
Employees [employeeNumber=1166, lastName=Thompson, firstName=Leslie, extension=x4065, email=lthompson@classicmodelcars.com, officeCode=1]
Employees [employeeNumber=1188, lastName=Firrelli, firstName=Julie, extension=x2173, email=jfirrelli@classicmodelcars.com, officeCode=1]
Employees [employeeNumber=1216, lastName=Patterson, firstName=Steve, extension=x4334, email=spatterson@classicmodelcars.com, officeCode=1]
Employees [employeeNumber=1286, lastName=Tseng, firstName=Foon Yue, extension=x2248, email=ftsing@classicmodelcars.com, officeCode=3, reportsTo=1323]
Employees [employeeNumber=1323, lastName=Vanauf, firstName=George, extension=x4102, email=gvanauf@classicmodelcars.com, officeCode=3, reportsTo=1337]
Employees [employeeNumber=1337, lastName=Bondur, firstName=Loui, extension=x6493, email=lbondur@classicmodelcars.com, officeCode=4, reportsTo=1370]
Employees [employeeNumber=1370, lastName=Hernandez, firstName=Gerard, extension=x2028, email=ghernande@classicmodelcars.com, officeCode=1]
Employees [employeeNumber=1401, lastName=Castillo, firstName=Pamela, extension=x2759, email=pcastillo@classicmodelcars.com, officeCode=1]
Employees [employeeNumber=1501, lastName=Bott, firstName=Larry, extension=x2311, email=lbott@classicmodelcars.com, officeCode=7, reportsTo=1611]
Employees [employeeNumber=1504, lastName=Jones, firstName=Barry, extension=x102, email=bjones@classicmodelcars.com, officeCode=7, reportsTo=1612]
Employees [employeeNumber=1611, lastName=Fixter, firstName=Andy, extension=x101, email=afixter@classicmodelcars.com, officeCode=6, reportsTo=1619]
Employees [employeeNumber=1612, lastName=Marsh, firstName=Peter, extension=x102, email=pmarsh@classicmodelcars.com, officeCode=6, reportsTo=1621]
Employees [employeeNumber=1619, lastName=King, firstName=Tom, extension=x103, email=tking@classicmodelcars.com, officeCode=6, reportsTo=1625]
Employees [employeeNumber=1621, lastName=Nishi, firstName=Mami, extension=x101, email=mnishi@classicmodelcars.com, officeCode=5, reportsTo=1702]
Employees [employeeNumber=1625, lastName=Kato, firstName=Yoshimi, extension=x102, email=ykato@classicmodelcars.com, officeCode=5, reportsTo=1702]
Employees [employeeNumber=1702, lastName=Gerard, firstName=Martin, extension=x2312, email=mgerard@classicmodelcars.com, officeCode=4, reportsTo=1]
```

Main Menu:

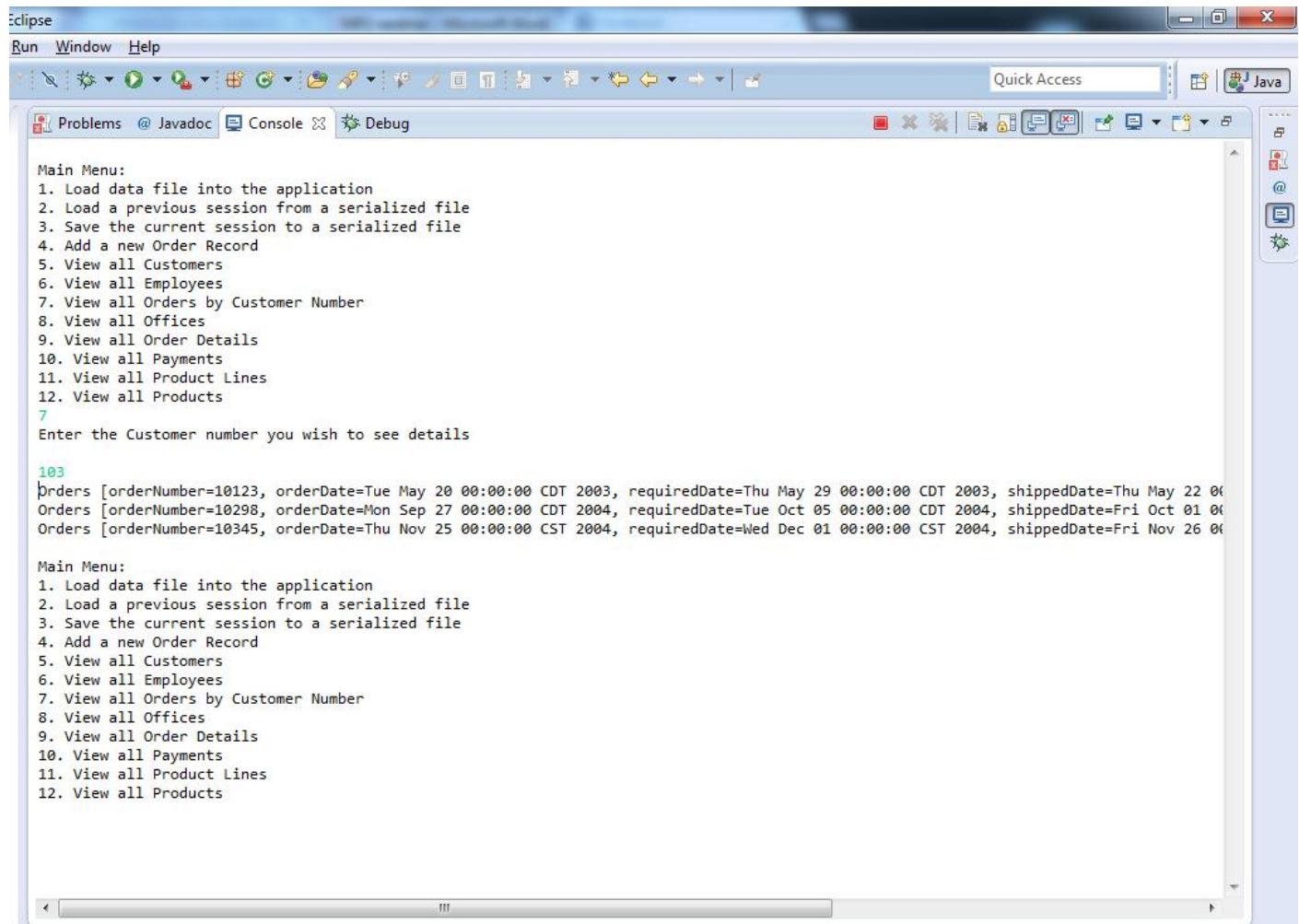
Main Menu:

1. Load data file into the application
2. Load a previous session from a serialized file
3. Save the current session to a serialized file
4. Add a new Order Record
5. View all Customers
6. View all Employees
7. View all Orders by Customer Number
8. View all Offices
9. View all Order Details
10. View all Payments
11. View all Product Lines
12. View all Products

6

```
Employees [employeeNumber=1002, lastName=Murphy, firstName=Diane, extension=x5800, email=dmurphy@classicmodelcars.com, officeCode=1, reportsTo=1056]
Employees [employeeNumber=1056, lastName=Patterson, firstName=Mary, extension=x4611, email=mpatterso@classicmodelcars.com, officeCode=1]
Employees [employeeNumber=1076, lastName=Firrelli, firstName=Jeff, extension=x9273, email=jfirrelli@classicmodelcars.com, officeCode=1]
Employees [employeeNumber=1088, lastName=Patterson, firstName=William, extension=x4871, email=wpatterson@classicmodelcars.com, officeCode=1]
Employees [employeeNumber=1102, lastName=Bondur, firstName=Gerard, extension=x5408, email=gbondur@classicmodelcars.com, officeCode=4, reportsTo=1137]
Employees [employeeNumber=1143, lastName=Bow, firstName=Anthony, extension=x5428, email=abow@classicmodelcars.com, officeCode=1, reportsTo=1165]
Employees [employeeNumber=1165, lastName=Jennings, firstName=Leslie, extension=x3291, email=ljennings@classicmodelcars.com, officeCode=1]
Employees [employeeNumber=1166, lastName=Thompson, firstName=Leslie, extension=x4065, email=lthompson@classicmodelcars.com, officeCode=1]
Employees [employeeNumber=1188, lastName=Firrelli, firstName=Julie, extension=x2173, email=jfirrelli@classicmodelcars.com, officeCode=1]
Employees [employeeNumber=1216, lastName=Patterson, firstName=Steve, extension=x4334, email=spatterson@classicmodelcars.com, officeCode=1]
Employees [employeeNumber=1286, lastName=Tseng, firstName=Foon Yue, extension=x2248, email=ftsing@classicmodelcars.com, officeCode=3, reportsTo=1323]
Employees [employeeNumber=1323, lastName=Vanauf, firstName=George, extension=x4102, email=gvanauf@classicmodelcars.com, officeCode=3, reportsTo=1337]
Employees [employeeNumber=1337, lastName=Bondur, firstName=Loui, extension=x6493, email=lbondur@classicmodelcars.com, officeCode=4, reportsTo=1370]
Employees [employeeNumber=1370, lastName=Hernandez, firstName=Gerard, extension=x2028, email=ghernande@classicmodelcars.com, officeCode=1]
Employees [employeeNumber=1401, lastName=Castillo, firstName=Pamela, extension=x2759, email=pcastillo@classicmodelcars.com, officeCode=1]
Employees [employeeNumber=1501, lastName=Bott, firstName=Larry, extension=x2311, email=lbott@classicmodelcars.com, officeCode=7, reportsTo=1611]
Employees [employeeNumber=1504, lastName=Jones, firstName=Barry, extension=x102, email=bjones@classicmodelcars.com, officeCode=7, reportsTo=1612]
Employees [employeeNumber=1611, lastName=Fixter, firstName=Andy, extension=x101, email=afixter@classicmodelcars.com, officeCode=6, reportsTo=1619]
Employees [employeeNumber=1612, lastName=Marsh, firstName=Peter, extension=x102, email=pmarsh@classicmodelcars.com, officeCode=6, reportsTo=1621]
Employees [employeeNumber=1619, lastName=King, firstName=Tom, extension=x103, email=tking@classicmodelcars.com, officeCode=6, reportsTo=1625]
Employees [employeeNumber=1621, lastName=Nishi, firstName=Mami, extension=x101, email=mnishi@classicmodelcars.com, officeCode=5, reportsTo=1702]
Employees [employeeNumber=1625, lastName=Kato, firstName=Yoshimi, extension=x102, email=ykato@classicmodelcars.com, officeCode=5, reportsTo=1702]
Employees [employeeNumber=1702, lastName=Gerard, firstName=Martin, extension=x2312, email=mgerard@classicmodelcars.com, officeCode=4, reportsTo=1]
```

## View all Orders by Customer Number



The screenshot shows the Eclipse IDE interface with a terminal window open. The terminal window displays a Java application's interaction with the user. The application presents a main menu and then asks for a customer number. The user enters '103', which corresponds to a valid order record in the database.

```
Eclipse
Run Window Help
Problems @ Javadoc Console Debug
Main Menu:
1. Load data file into the application
2. Load a previous session from a serialized file
3. Save the current session to a serialized file
4. Add a new Order Record
5. View all Customers
6. View all Employees
7. View all Orders by Customer Number
8. View all Offices
9. View all Order Details
10. View all Payments
11. View all Product Lines
12. View all Products
7
Enter the Customer number you wish to see details

103
Orders [orderNumber=10123, orderDate=Tue May 20 00:00:00 CDT 2003, requiredDate=Thu May 29 00:00:00 CDT 2003, shippedDate=Thu May 22 00:00:00 CDT 2003]
Orders [orderNumber=10298, orderDate=Mon Sep 27 00:00:00 CDT 2004, requiredDate=Tue Oct 05 00:00:00 CDT 2004, shippedDate=Fri Oct 01 00:00:00 CDT 2004]
Orders [orderNumber=10345, orderDate=Thu Nov 25 00:00:00 CST 2004, requiredDate=Wed Dec 01 00:00:00 CST 2004, shippedDate=Fri Nov 26 00:00:00 CST 2004]

Main Menu:
1. Load data file into the application
2. Load a previous session from a serialized file
3. Save the current session to a serialized file
4. Add a new Order Record
5. View all Customers
6. View all Employees
7. View all Orders by Customer Number
8. View all Offices
9. View all Order Details
10. View all Payments
11. View all Product Lines
12. View all Products
```

## Invalid customer number:

The screenshot shows the Eclipse IDE interface with the Console view active. The console output displays a menu-driven application. It starts by prompting for a customer number, then lists several orders, followed by a main menu with 12 options. The user enters '7' to return to the main menu. After another prompt for a customer number, the application returns an error message stating 'Customer Doesn't Exist !!'. The main menu is then displayed again.

```
Run Window Help
Problems @ Javadoc Console Debug
Enter the Customer number you wish to see details
103
Orders [orderNumber=10123, orderDate=Tue May 20 00:00:00 CDT 2003, requiredDate=Thu May 29 00:00:00 CDT 2003, shippedDate=Thu May 22 00:00:00 CDT 2003]
Orders [orderNumber=10298, orderDate=Mon Sep 27 00:00:00 CDT 2004, requiredDate=Tue Oct 05 00:00:00 CDT 2004, shippedDate=Fri Oct 01 00:00:00 CDT 2004]
Orders [orderNumber=10345, orderDate=Thu Nov 25 00:00:00 CST 2004, requiredDate=Wed Dec 01 00:00:00 CST 2004, shippedDate=Fri Nov 26 00:00:00 CST 2004]

Main Menu:
1. Load data file into the application
2. Load a previous session from a serialized file
3. Save the current session to a serialized file
4. Add a new Order Record
5. View all Customers
6. View all Employees
7. View all Orders by Customer Number
8. View all Offices
9. View all Order Details
10. View all Payments
11. View all Product Lines
12. View all Products
7
Enter the Customer number you wish to see details
900
Customer Doesn't Exist !!

Main Menu:
1. Load data file into the application
2. Load a previous session from a serialized file
3. Save the current session to a serialized file
4. Add a new Order Record
5. View all Customers
6. View all Employees
7. View all Orders by Customer Number
8. View all Offices
9. View all Order Details
10. View all Payments
11. View all Product Lines
12. View all Products
```

## Invalid customer number format:

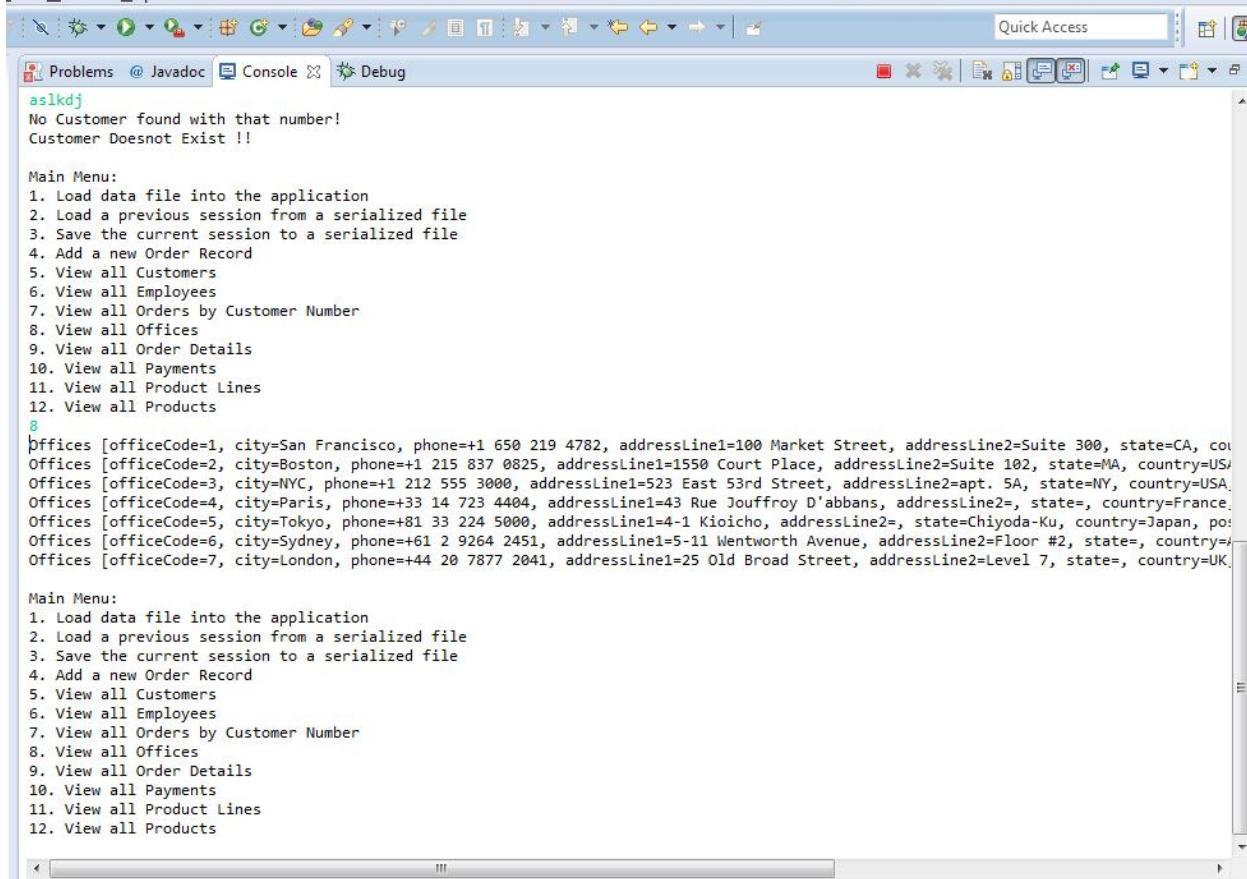
```
Main Menu:  
1. Load data file into the application  
2. Load a previous session from a serialized file  
3. Save the current session to a serialized file  
4. Add a new Order Record  
5. View all Customers  
6. View all Employees  
7. View all Orders by Customer Number  
8. View all Offices  
9. View all Order Details  
10. View all Payments  
11. View all Product Lines  
12. View all Products
```

```
7  
Enter the Customer number you wish to see details
```

```
aslkdj  
No Customer found with that number!  
Customer Doesn't Exist !!
```

```
Main Menu:  
1. Load data file into the application  
2. Load a previous session from a serialized file  
3. Save the current session to a serialized file  
4. Add a new Order Record  
5. View all Customers  
6. View all Employees  
7. View all Orders by Customer Number  
8. View all Offices  
9. View all Order Details  
10. View all Payments  
11. View all Product Lines  
12. View all Products
```

## View “Offices” records:



The screenshot shows an IDE interface with several tabs at the top: Problems, @ Javadoc, Console, and Debug. The Console tab is active and displays the following text:

```
Problems @ Javadoc Console Debug Quick Access  
aslkdj  
No Customer found with that number!  
Customer Doesn't Exist !!  
  
Main Menu:  
1. Load data file into the application  
2. Load a previous session from a serialized file  
3. Save the current session to a serialized file  
4. Add a new Order Record  
5. View all Customers  
6. View all Employees  
7. View all Orders by Customer Number  
8. View all Offices  
9. View all Order Details  
10. View all Payments  
11. View all Product Lines  
12. View all Products  
  
8  
Offices [officeCode=1, city=San Francisco, phone=+1 650 219 4782, addressLine1=100 Market Street, addressLine2=Suite 300, state=CA, country=USA]  
Offices [officeCode=2, city=Boston, phone=+1 215 837 0825, addressLine1=1550 Court Place, addressLine2=Suite 102, state=MA, country=USA]  
Offices [officeCode=3, city=NYC, phone=+1 212 555 3000, addressLine1=523 East 53rd Street, addressLine2=apt. 5A, state=NY, country=USA]  
Offices [officeCode=4, city=Paris, phone=+33 14 723 4404, addressLine1=43 Rue Jouffroy D'abbans, addressLine2=, state=, country=France]  
Offices [officeCode=5, city=Tokyo, phone=+81 33 224 5000, addressLine1=4-1 Kioicho, addressLine2=, state=Chiyoda-Ku, country=Japan, postCode=102-0001]  
Offices [officeCode=6, city=Sydney, phone=+61 2 9264 2451, addressLine1=5-11 Wentworth Avenue, addressLine2=floor #2, state=, country=Australia]  
Offices [officeCode=7, city=London, phone=+44 20 7877 2041, addressLine1=25 Old Broad Street, addressLine2=Level 7, state=, country=UK]  
  
Main Menu:  
1. Load data file into the application  
2. Load a previous session from a serialized file  
3. Save the current session to a serialized file  
4. Add a new Order Record  
5. View all Customers  
6. View all Employees  
7. View all Orders by Customer Number  
8. View all Offices  
9. View all Order Details  
10. View all Payments  
11. View all Product Lines  
12. View all Products
```

## View all orderdetails records:

The screenshot shows an IDE interface with several tabs at the top: Problems, Javadoc, Console, and Debug. The Console tab is active, displaying a list of `OrderDetails` objects. Each object is represented by a string of parameters separated by commas. The list contains approximately 30 entries. Below the list, a "Main Menu" is displayed with the following options:

- 1. Load data file into the application
- 2. Load a previous session from a serialized file
- 3. Save the current session to a serialized file
- 4. Add a new Order Record
- 5. View all Customers
- 6. View all Employees
- 7. View all Orders by Customer Number
- 8. View all Offices
- 9. View all Order Details
- 10. View all Payments
- 11. View all Product Lines
- 12. View all Products

## View all payments records:

The screenshot shows a Java IDE interface with three tabs at the top: 'Problems', 'Javadoc', and 'Console'. The 'Console' tab is active, displaying a list of menu items and a large list of payment records.

1. Load data file into the application  
2. Load a previous session from a serialized file  
3. Save the current session to a serialized file  
4. Add a new Order Record  
5. View all Customers  
6. View all Employees  
7. View all Orders by Customer Number  
8. View all Offices  
9. View all Order Details  
10. View all Payments  
11. View all Product Lines  
12. View all Products

10

```
Payments [customerNumber=103, checkNumber=HQ336336, paymentDate=Tue Oct 19 00:00:00 CDT 2004, amount=6066.78]
Payments [customerNumber=103, checkNumber=JM555205, paymentDate=Thu Jun 05 00:00:00 CDT 2003, amount=14571.44]
Payments [customerNumber=103, checkNumber=OM314933, paymentDate=Sat Dec 18 00:00:00 CST 2004, amount=1676.14]
Payments [customerNumber=112, checkNumber=B0864823, paymentDate=Fri Dec 17 00:00:00 CST 2004, amount=14191.12]
Payments [customerNumber=112, checkNumber=HQ55022, paymentDate=Fri Jun 06 00:00:00 CDT 2003, amount=32641.98]
Payments [customerNumber=112, checkNumber=ND748579, paymentDate=Fri Aug 20 00:00:00 CDT 2004, amount=33347.88]
Payments [customerNumber=114, checkNumber=GG31455, paymentDate=Tue May 20 00:00:00 CDT 2003, amount=45864.03]
Payments [customerNumber=114, checkNumber=MA765515, paymentDate=Wed Dec 15 00:00:00 CST 2004, amount=82261.22]
Payments [customerNumber=114, checkNumber=NP603840, paymentDate=Sat May 31 00:00:00 CDT 2003, amount=7565.08]
Payments [customerNumber=114, checkNumber=NR27552, paymentDate=Wed Mar 10 00:00:00 CST 2004, amount=44894.74]
Payments [customerNumber=119, checkNumber=DB933704, paymentDate=Sun Nov 14 00:00:00 CST 2004, amount=19501.82]
Payments [customerNumber=119, checkNumber=LN373447, paymentDate=Sun Aug 08 00:00:00 CDT 2004, amount=47924.19]
Payments [customerNumber=119, checkNumber=NG94694, paymentDate=Tue Feb 22 00:00:00 CST 2005, amount=49523.67]
Payments [customerNumber=121, checkNumber=DB889831, paymentDate=Sun Feb 16 00:00:00 CST 2003, amount=50218.95]
Payments [customerNumber=121, checkNumber=FD317790, paymentDate=Thu Oct 28 00:00:00 CST 2003, amount=1491.38]
Payments [customerNumber=121, checkNumber=K1831359, paymentDate=Thu Nov 04 00:00:00 CST 2004, amount=17876.32]
Payments [customerNumber=121, checkNumber=MA302151, paymentDate=Sun Nov 28 00:00:00 CST 2004, amount=34638.14]
Payments [customerNumber=124, checkNumber=AE215433, paymentDate=Sat Mar 05 00:00:00 CST 2005, amount=101244.59]
Payments [customerNumber=124, checkNumber=BG255406, paymentDate=Sat Aug 28 00:00:00 CDT 2004, amount=85410.87]
Payments [customerNumber=124, checkNumber=CQ287967, paymentDate=Fri Apr 11 00:00:00 CDT 2003, amount=11044.3]
Payments [customerNumber=124, checkNumber=ET64396, paymentDate=Sat Apr 16 00:00:00 CDT 2005, amount=83598.04]
Payments [customerNumber=124, checkNumber=HI366474, paymentDate=Mon Dec 27 00:00:00 CST 2004, amount=47142.7]
Payments [customerNumber=124, checkNumber=HR86578, paymentDate=Tue Nov 02 00:00:00 CST 2004, amount=55639.66]
Payments [customerNumber=124, checkNumber=KI131716, paymentDate=Fri Aug 15 00:00:00 CDT 2003, amount=11654.4]
Payments [customerNumber=124, checkNumber=LF217299, paymentDate=Fri Mar 26 00:00:00 CST 2004, amount=43369.3]
Payments [customerNumber=124, checkNumber=NT141748, paymentDate=Tue Nov 25 00:00:00 CST 2003, amount=45084.38]
Payments [customerNumber=128, checkNumber=DI925118, paymentDate=Tue Jan 28 00:00:00 CST 2003, amount=10549.01]
```

```
Problems @ Javadoc Console Debug
Payments [customerNumber=462, checkNumber=PE176846, paymentDate=Sat Nov 27 00:00:00 CST 2004, amount=48355.87]
Payments [customerNumber=471, checkNumber=AB661578, paymentDate=Wed Jul 28 00:00:00 CDT 2004, amount=9415.13]
Payments [customerNumber=471, checkNumber=C0645196, paymentDate=Wed Dec 10 00:00:00 CST 2003, amount=35505.63]
Payments [customerNumber=473, checkNumber=LL427099, paymentDate=Tue Feb 17 00:00:00 CST 2004, amount=7612.06]
Payments [customerNumber=473, checkNumber=PC688499, paymentDate=Mon Oct 27 00:00:00 CST 2003, amount=17746.26]
Payments [customerNumber=475, checkNumber=JP113227, paymentDate=Tue Dec 09 00:00:00 CST 2003, amount=7678.25]
Payments [customerNumber=475, checkNumber=PB951268, paymentDate=Fri Feb 13 00:00:00 CST 2004, amount=36070.47]
Payments [customerNumber=484, checkNumber=GK294076, paymentDate=Tue Oct 26 00:00:00 CDT 2004, amount=3474.66]
Payments [customerNumber=484, checkNumber=JH546765, paymentDate=Sat Nov 29 00:00:00 CST 2003, amount=47513.19]
Payments [customerNumber=486, checkNumber=BL66528, paymentDate=Wed Apr 14 00:00:00 CDT 2004, amount=5899.38]
Payments [customerNumber=486, checkNumber=HS86661, paymentDate=Tue Nov 23 00:00:00 CST 2004, amount=45994.07]
Payments [customerNumber=486, checkNumber=JB117768, paymentDate=Thu Mar 28 00:00:00 CST 2003, amount=25833.14]
Payments [customerNumber=487, checkNumber=AH612904, paymentDate=Sun Sep 28 00:00:00 CDT 2003, amount=29997.09]
Payments [customerNumber=487, checkNumber=PT550181, paymentDate=Sun Feb 29 00:00:00 CST 2004, amount=12573.28]
Payments [customerNumber=489, checkNumber=OC773849, paymentDate=Thu Dec 04 00:00:00 CST 2003, amount=22275.73]
Payments [customerNumber=489, checkNumber=P0860906, paymentDate=Sat Jan 31 00:00:00 CST 2004, amount=7310.42]
Payments [customerNumber=495, checkNumber=BH167026, paymentDate=Fri Dec 26 00:00:00 CST 2003, amount=59265.14]
Payments [customerNumber=495, checkNumber=FN155234, paymentDate=Fri May 14 00:00:00 CDT 2004, amount=6276.6]
Payments [customerNumber=496, checkNumber=EU531600, paymentDate=Wed May 25 00:00:00 CDT 2005, amount=30253.75]
Payments [customerNumber=496, checkNumber=MB342426, paymentDate=Wed Jul 16 00:00:00 CDT 2003, amount=32077.44]
Payments [customerNumber=496, checkNumber=MN89921, paymentDate=Fri Dec 31 00:00:00 CST 2004, amount=52166.0]
Payments [customerNumber=233, checkNumber=BOFA23232, paymentDate=Fri May 20 00:00:00 CDT 2005, amount=29070.38]
Payments [customerNumber=398, checkNumber=JPMR4544, paymentDate=Wed May 18 00:00:00 CDT 2005, amount=615.45]
Payments [customerNumber=406, checkNumber=BJMPR4545, paymentDate=Sat Apr 23 00:00:00 CDT 2005, amount=12190.85]

Main Menu:
1. Load data file into the application
2. Load a previous session from a serialized file
3. Save the current session to a serialized file
4. Add a new Order Record
5. View all Customers
6. View all Employees
7. View all Orders by Customer Number
8. View all Offices
9. View all Order Details
10. View all Payments
11. View all Product Lines
12. View all Products
```

## View all ‘product lines’ record details:

The screenshot shows a Java development environment with a terminal window open. The terminal window has tabs at the top labeled 'Problems', '@ Javadoc', 'Console', and 'Debug'. The main area of the terminal displays the following text:

```
Main Menu:  
1. Load data file into the application  
2. Load a previous session from a serialized file  
3. Save the current session to a serialized file  
4. Add a new Order Record  
5. View all Customers  
6. View all Employees  
7. View all Orders by Customer Number  
8. View all Offices  
9. View all Order Details  
10. View all Payments  
11. View all Product Lines  
12. View all Products  
11  
ProductLines [productLine=Vintage Cars, textDescription=Our Vintage Car models realistically portray automobiles produced from the ear...  
ProductLines [productLine=Ships, textDescription=The perfect holiday or anniversary gift for executives, clients, friends, and family.  
ProductLines [productLine=Trains, textDescription=Model trains are a rewarding hobby for enthusiasts of all ages. Whether you're lookin...  
Productlines [productLine=Planes, textDescription=Unique, diecast airplane and helicopter replicas suitable for collections, as well as...  
Productlines [productLine=Motorcycles, textDescription=Our motorcycles are state of the art replicas of classic as well as contemporary...  
Productlines [productLine=Classic Cars, textDescription=Attention car enthusiasts: Make your wildest car ownership dreams come true. Wh...  
ProductLines [productLine=Trucks and Buses, textDescription=The Truck and Bus models are realistic replicas of buses and specialized tr...  
  
Main Menu:  
1. Load data file into the application  
2. Load a previous session from a serialized file  
3. Save the current session to a serialized file  
4. Add a new Order Record  
5. View all Customers  
6. View all Employees  
7. View all Orders by Customer Number  
8. View all Offices  
9. View all Order Details  
10. View all Payments  
11. View all Product Lines  
12. View all Products
```

## View all 'Product' record details:

The screenshot shows a Java IDE interface with three tabs at the top: 'Problems' (red icon), '@ Javadoc' (blue icon), 'Console' (green icon), and 'Debug' (yellow icon). The 'Console' tab is active, displaying a list of products. The list starts with a main menu and then lists products grouped by their product code. The products are described with their names, product lines, scales, and vendors.

```
Main Menu:  
1. Load data file into the application  
2. Load a previous session from a serialized file  
3. Save the current session to a serialized file  
4. Add a new Order Record  
5. View all Customers  
6. View all Employees  
7. View all Orders by Customer Number  
8. View all Offices  
9. View all Order Details  
10. View all Payments  
11. View all Product Lines  
12. View all Products  
12  
Products [productCode=S10_1678, productName=1969 Harley Davidson Ultimate Chopper, productLine=Motorcycles, productScale=1:10, productVendor=Second Gear I]  
Products [productCode=S10_1949, productName=1952 Alpine Renault 1300, productLine=Classic Cars, productScale=1:10, productVendor=Classique Diecast]  
Products [productCode=S10_2016, productName=1996 Moto Guzzi 1100i, productLine=Motorcycles, productScale=1:10, productVendor=Highway 66 Min: Diecast]  
Products [productCode=S10_4698, productName=2003 Harley-Davidson Eagle Drag Bike, productLine=Motorcycles, productScale=1:10, productVendor=Studio Min: Diecast]  
, precision diecast replica, baked enamel finish, 1:10 scale model, removable fender, seat and tank cover piece for displaying the super bike.  
Products [productCode=S10_4757, productName=1972 Alfa Romeo GTA, productLine=Classic Cars, productScale=1:10, productVendor=Motor City Diecast]  
Products [productCode=S10_4962, productName=1962 Lancia A Delta 16V, productLine=Classic Cars, productScale=1:10, productVendor=Second Gear I]  
Products [productCode=S12_1099, productName=1968 Ford Mustang, productLine=Classic Cars, productScale=1:12, productVendor=Autoart Studio]  
Products [productCode=S12_1108, productName=2001 Ferrari Enzo, productLine=Classic Cars, productScale=1:12, productVendor=Second Gear I]  
Products [productCode=S12_1666, productName=1958 Setra Bus, productLine=Trucks and Buses, productScale=1:12, productVendor=Welly Diecast]  
Products [productCode=S12_2823, productName=2002 Suzuki XRE0, productLine=Motorcycles, productScale=1:12, productVendor=Unimax Art Gal: Diecast]  
Products [productCode=S12_3148, productName=1969 Corvair Monza, productLine=Classic Cars, productScale=1:18, productVendor=Welly Diecast]  
Products [productCode=S12_3380, productName=1968 Dodge Charger, productLine=Classic Cars, productScale=1:12, productVendor=Welly Diecast]  
Products [productCode=S12_3891, productName=1969 Ford Falcon, productLine=Classic Cars, productScale=1:12, productVendor=Second Gear I]  
Products [productCode=S12_3990, productName=1970 Plymouth Hemi Cuda, productLine=Classic Cars, productScale=1:12, productVendor=Studio Min: Diecast]  
Products [productCode=S12_4473, productName=1957 Chevy Pickup, productLine=Trucks and Buses, productScale=1:12, productVendor=Exoto Diecast]  
Products [productCode=S12_4675, productName=1969 Dodge Charger, productLine=Classic Cars, productScale=1:12, productVendor=Welly Diecast]  
Products [productCode=S18_1097, productName=1940 Ford Pickup Truck, productLine=Trucks and Buses, productScale=1:18, productVendor=Studio Min: Diecast]  
Products [productCode=S18_1129, productName=1993 Mazda RX-7, productLine=Classic Cars, productScale=1:18, productVendor=Highway 66 Min: Diecast]  
Products [productCode=S18_1342, productName=1937 Lincoln Berline, productLine=Vintage Cars, productScale=1:18, productVendor=Motor City Diecast]  
Products [productCode=S18_1367, productName=1936 Mercedes-Benz 500K Special Roadster, productLine=Vintage Cars, productScale=1:18, productVendor=Studio Min: Diecast]  
Products [productCode=S18_1589, productName=1965 Aston Martin DB5, productLine=Classic Cars, productScale=1:18, productVendor=Classic Diecast]  
Products [productCode=S18_1662, productName=1980s Black Hawk Helicopter, productLine=Planes, productScale=1:18, productVendor=Red Star Diecast]  
Products [productCode=S18_1749, productName=1917 Grand Touring Sedan, productLine=Vintage Cars, productScale=1:18, productVendor=Welly Diecast]  
Products [productCode=S18_1889, productName=1948 Porsche 356-A Roadster, productLine=Classic Cars, productScale=1:18, productVendor=General Diecast]  
Products [productCode=S18_1984, productName=1995 Honda Civic, productLine=Classic Cars, productScale=1:18, productVendor=Min Lin Diecast]
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Problems @ Javadoc Console Debug
Products [productCode=S700_1691, productName=American Airlines: B767-300, productLine=Planes, productScale=1:700, productVendor=Min Line]
Products [productCode=S700_1938, productName=The Mayflower, productLine=Ships, productScale=1:700, productVendor=Studio M Art Models, quantityInStock=3501]
All wood with canvas sail. Extras include long boats, rigging, ladders, railing, anchors, side cannons, hand painted, etc., quantityInStock=3501
Products [productCode=S700_2047, productName=HMS Bounty, productLine=Ships, productScale=1:700, productVendor=Unimax Art Galleries, productType=Model Ship]
Many extras including rigging, long boats, pilot house, anchors, etc. Comes with three masts, all square-rigged., quantityInStock=3501
Products [productCode=S700_2466, productName=America West Airlines B757-200, productLine=Planes, productScale=1:700, productVendor=Motor City Art]
Products [productCode=S700_2610, productName=The USS Constitution Ship, productLine=Ships, productScale=1:700, productVendor=Red Start]
Products [productCode=S700_2824, productName=1982 Camaro Z28, productLine=Classic Cars, productScale=1:18, productVendor=Carousel DieCast]
Measures approximately 9 1/2" Long., quantityInStock=6934, buyPrice=46.53, MSRP=101.15]
Products [productCode=S700_2834, productName=ATA: B757-300, productLine=Planes, productScale=1:700, productVendor=Highway 66 Mini Classics]
Products [productCode=S700_3167, productName=F/A 18 Hornet 1/72, productLine=Planes, productScale=1:72, productVendor=Motor City Art Classics]
Products [productCode=S700_3505, productName=The Titanic, productLine=Ships, productScale=1:700, productVendor=Carousel DieCast Legend]
Products [productCode=S700_3962, productName=The Queen Mary, productLine=Ships, productScale=1:700, productVendor=Welly Diecast Products]
Products [productCode=S700_4002, productName=American Airlines: MD-11S, productLine=Planes, productScale=1:700, productVendor=Second Gear]
Products [productCode=S72_1253, productName=Boeing X-32A JSF, productLine=Planes, productScale=1:72, productVendor=Motor City Art Classics]
Products [productCode=S72_3212, productName=Pont Yacht, productLine=Ships, productScale=1:72, productVendor=Unimax Art Galleries, productType=Model Ship]
Many extras including rigging, long boats, pilot house, anchors, etc. Comes with 2 masts, all square-rigged, quantityInStock=414, buyPrice=101.15]

Printng orders

Main Menu:
1. Load data file into the application
2. Load a previous session from a serialized file
3. Save the current session to a serialized file
4. Add a new Order Record
5. View all Customers
6. View all Employees
7. View all Orders by Customer Number
8. View all Offices
9. View all Order Details
10. View all Payments
11. View all Product Lines
12. View all Products
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