

# To create sample application Part - II

## Reference:

'Perspectives on Web Services', by  
Zimmermann, Tomlinson and Peuser,  
published by Springer

# Implementation of EJBs

- Ensure J2EE perspective is open.
- Select Address EJB. Right-click and select Open With -> Deployment Descriptor Editor
- Scroll down the page to look at the section on Queries. Click on the Add.. Button
- For the Method select New, and the Method Type select find method

# Create EJBQL queries

- Enter a name `findByPartialCode`
- Click on `Add...` button next to the Parameters list. Enter a Name of `partialCode` and type of `java.lang.String`. Click OK.
- For return type, select `java.util.Collection`. Click Next.
- Select the sample query *Single Where Predicate* and enter as under:

```
select object(o) from Address o where  
o.code is ?1
```

- Click on Finish

## Add Finder Descriptor

### Enterprise Java Bean 2.0 Query

Add an enterprise bean finder method.



Method:  New  Existing  
Method Type:  find method  ejbSelect method

Type:  Local  Remote

Return remote entities:

Name:

Parameters:

Add...

Edit

Delete

Return type:

< Back

Next >

Finish

Cancel

**Add Method Parameter** [X]

**Method Parameter**

Name:

Type:  [v]

Array

## Add Finder Descriptor

### EJBQL

Creates a new EJBQL query. Sample queries are provided in the dropdown list below.



Bean:

Abstract schema name:

Query method name:

Description:

Select a sample query:

Query statement:   
Find By Primary Key  
Single Value Query  
Member of Predicate Query  
Simple Many Navigation Query  
Single Where Predicate

< Back

Next >

Finish

Cancel

## Add Finder Descriptor

### EJBQL

Creates a new EJBQL query. Sample queries are provided in the dropdown list below.



Bean:

Abstract schema name:

Query method name:

Description:

Select a sample query:

Query statement:

```
select object(o) from Address o where o.code is ?1
```

< Back

Next >

Finish

Cancel



**J2EE Hierarchy**

- Web Modules
- EJB Modules
  - MediPolicyEJB
    - Address
      - addressid : java.
      - address1 : java
      - address2 : java
      - code : java.lan
      - country : java.
      - contact : Conta
      - policy : Policy
      - AddressLocalHc
      - AddressLocal
      - AddressBean
      - AddressKey
    - Claim

J2EE Hierarchy | J2EE Navigator

**\*EJB Deployment Descriptor**

### Beans

- Address
- Claim
- Contact
- Policy

Queries

The following EJBQL queries are defined for the selected bean:

Query select object(o) from Address o where o. Add... Edit... Remove

WebSphere Extensions

Overview | Beans | Assembly Descriptor | References | Access | Source

**Outline**

- MediPolicyEJB
  - Address
  - Claim
  - Contact
  - Policy

Tasks (0 items)

C	!	Description	Resource	In Folder	Location

Tasks | Properties | Servers | Console | DB Servers



# Create EJBQL queries

- Example: To match house number and postal code against the address database.
- EJBQL query: `findByHouseNoAndCode`, which accepts two strings called `houseNo` and `FullCode`.
- Each house has only one instance, so we can select `com.mediquotes.policy.entity.AddressLocal` as return type. Enter following query statement

```
select object(o) from Address o where  
o.address1 like ?1 and o.code = ?1
```

**Add Method Parameter** [X]

**Method Parameter**


Name:

Type:  [v]

Array

**Add Method Parameter** [X]

**Method Parameter**

 Type cannot be empty.

Name:

Type:  [v]

Array

## Add Finder Descriptor

### Enterprise Java Bean 2.0 Query

Add an enterprise bean finder method.



Method:  New  Existing  
Method Type:  find method  ejbSelect method

Type:  Local  Remote

Return remote entities:

Name:

Parameters:

Add...

Edit

Delete

Return type:

< Back

Next >

Finish

Cancel

## Add Finder Descriptor

### EJBQL

Creates a new EJBQL query. Sample queries are provided in the dropdown list below.



Bean:

Abstract schema name:

Query method name:

Description:

Select a sample query:

Query statement:

```
select object(o) from Address o where o.address1 like ?1 and o.code = ?1
```

< Back

Next >

Finish

Cancel



J2EE Hierarchy

- Web Modules
- EJB Modules
  - MediPolicyEJB
    - Address
      - addressid : java.
      - address1 : java
      - address2 : java
      - code : java.lan
      - country : java.
      - contact : Conta
      - policy : Policy
      - AddressLocalHc
      - AddressLocal
      - AddressBean
      - AddressKey
    - Claim

\*EJB Deployment Descriptor

### Beans

- Address
- Claim
- Contact
- Policy

Queries

The following EJBQL queries are defined for the selected bean:

- Query select object(o) from Address o where o.
  - findByPartialCode
- Query select object(o) from Address o where o.
  - findByHouseNoAndCode

WebSphere Extensions

Overview Beans Assembly Descriptor References Access Source

Outline

- MediPolicyEJB
  - Address
  - Claim
  - Contact
  - Policy

Tasks (0 items)

C	!	Description	Resource	In Folder	Location

Tasks Properties Servers Console DB Servers

# To create the session EJB

- We need to create session bean which contains business logic.
- Select MediPolicyEJB module, right-click and select New -> Enterprise Bean.
- Click Next on the project selection screen. Ensure Session bean is selected.
- Enter a Bean name of PolicySession and a default package of com.mediquotes.policy.session. Click Next.
- Accept the defaults on the following screen and click on Next.

## Create an Enterprise Bean.

### Enterprise Bean Details

Select the session type, transaction type, supertype and Java classes for the EJB 2.0 session bean.



Session type:  Stateful  Stateless  
Transaction type:  Container  Bean

Bean supertype:

Bean class:

EJB binding name:

Local client view

Local home interface:

Local interface:

Remote client view

Remote home interface:

Remote interface:

< Back

Next >

Finish

Cancel

# To create Value Objects

- As the results of our business logic contain complex data structures, we are going to define a number of serializable value objects which are returned from our two business logic methods.
- RiskAssessmentResult class which contains the total insured value, total claim value, policy count and claim count for the partial postcode in a given date range. This object is returned by riskAssessment() method which is added to the session EJB later.

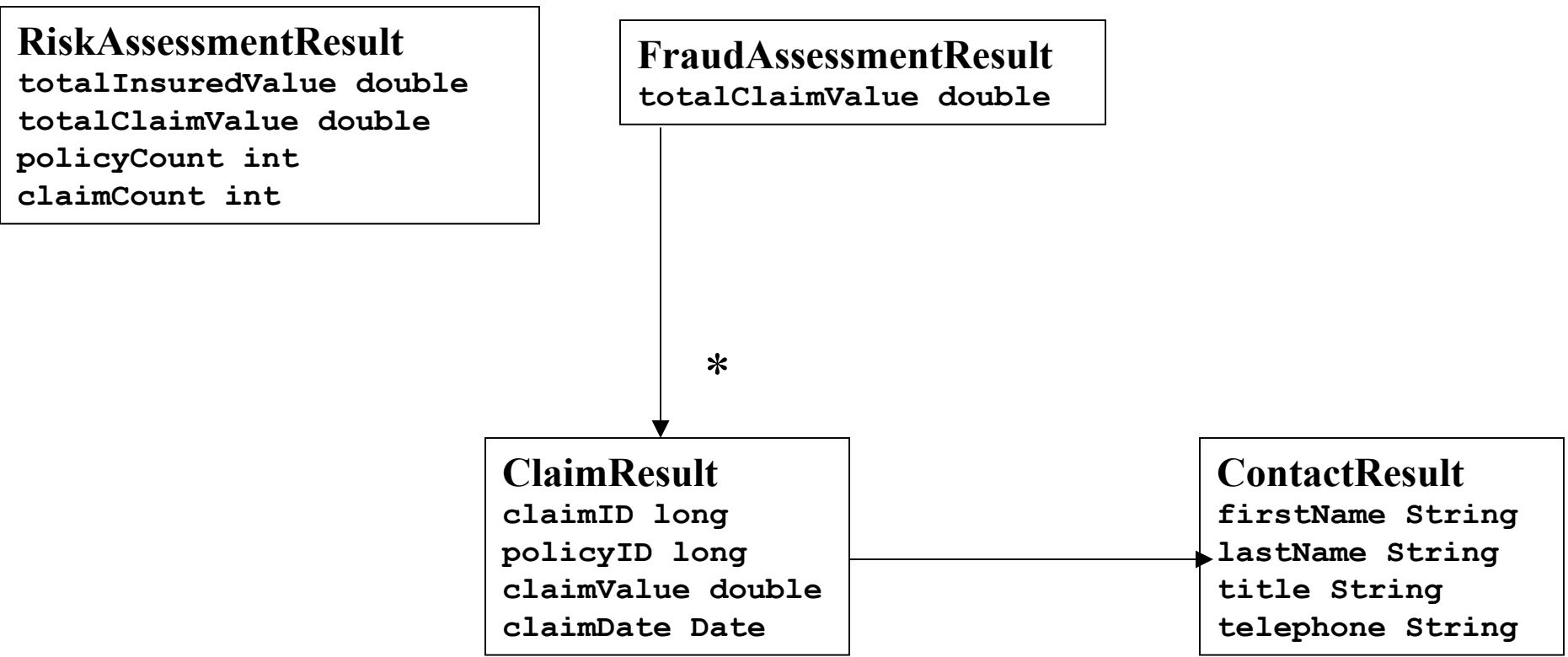


# To create Value Objects

- A FraudAssessmentResult class which returns the total claim value made against the given address, and an array of ClaimResult instances.
- Each ClaimResult object contains details of a previous claim against the address and the contact details of the policyholder at that time as a ContactResult object.

# To create Value Objects

- Create a new package to contain the value objects.
- Open Java perspective
- Expand the MediPolicyEJB project, and its ejbModule folder. Right-click and select New -> Package.
- Enter a package name of `com.mediquotes.policy.data`. Click Finish.
- In this package we create each value object in turn, starting with `ContactResult`:



Class diagram showing relationships between value objects

# To create Value Objects

- Select new package, right-click and select New -> Class
- Enter a class name of ContactResult. Next to interfaces, click on Add...
- Select java.io.Serializable from the list of types available and click OK.
- Accept the other defaults and click on Finish.

## New

### Java Package

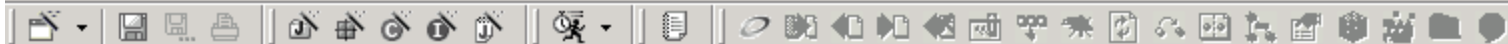
Create a Java package.



Creates folders corresponding to packages. A default package always has a corresponding folder and doesn't have to be created.

Source Folder:

Name:



Package Explorer

- MediPolicyEJB
  - SERVERJDK\_50\_PLUGINDIR/jre/lib/rt.jar
  - ejbModule
    - com.mediquotes.policy.data**
    - com.mediquotes.policy.entity
    - com.mediquotes.policy.session
    - META-INF
  - WAS\_50\_PLUGINDIR/lib/j2ee.jar - D:\P
  - WAS\_50\_PLUGINDIR/lib/ivjeb35.jar - C
  - WAS\_50\_PLUGINDIR/lib/vaprt.jar - D:\
  - WAS\_50\_PLUGINDIR/lib/ras.jar - D:\Pr
  - WAS\_50\_PLUGINDIR/lib/utills.jar - D:\Pr
  - WAS\_50\_PLUGINDIR/lib/runtime.jar - C
  - WAS\_50\_PLUGINDIR/lib/rsaexternal.jar
  - WAS\_50\_PLUGINDIR/lib/ecutils.jar - D:
  - WAS\_50\_PLUGINDIR/lib/ejbcontainer.jar
  - WAS\_50\_PLUGINDIR/lib/ejbportable.jar
  - WAS\_50\_PLUGINDIR/lib/wsexception.jar
  - WAS\_50\_PLUGINDIR/lib/runtimefw.jar
  - WAS\_50\_PLUGINDIR/lib/pnimpl.jar - D:
  - WAS\_50\_PLUGINDIR/lib/pm.jar - D:\Pr
  - WAS\_50\_PLUGINDIR/lib/appprofile.jar
  - WAS\_50\_PLUGINDIR/lib/rsadaptercci.jar
  - WAS\_50\_PLUGINDIR/lib/rsadapterspi.jar
  - WAS\_50\_PLUGINDIR/lib/querymd.jar -

Package Explorer Hierarchy

\*EJB Deployment Descriptor

### Beans

- Address
- Claim
- Contact
- Policy
- PolicySession**

Bean Type: Session 2.X  
Type options: Stateless  
Transaction type: Container  
Display name:  
Description:

**WebSphere Bindings**  
The following are binding properties for the WebSphere Application Server.  
JNDI name: `ejb/com/mediquotes/pol`

**Class and Interface Files**

Overview Beans Assembly Descriptor References Access Source

Outline

- MediPolicyEJB
  - Address
  - Claim
  - Contact
  - Policy
  - PolicySession

Tasks (0 items)

Resource	In Folder

**New**

### Java Class

Create a new Java class.

Source Folder:

Package:

Enclosing type:

---

Name:

Modifiers:  public  default  private  protected  
 abstract  final  static

Superclass:

Interfaces:

Which method stubs would you like to create?

public static void main(String[] args)

Constructors from superclass

Inherited abstract methods

- Enter the following variables inside the class:
- From the outline view, select all four variables. Right-click and select Generate Getter and Setter. Accept all the defaults and click on OK.
- Save and close ContactResult class.







- Create other classes as under:
- ClaimResult
- FraudAssessmentResult
- RiskAssessmentResult
- Save and close all of the value object classes.

**New**

### Java Class

Create a new Java class.

Source Folder:

Package:

Enclosing type:

---

Name:

Modifiers:  public  default  private  protected  
 abstract  final  static

Superclass:

Interfaces:

Which method stubs would you like to create?

public static void main(String[] args)

Constructors from superclass

Inherited abstract methods



Package Explorer

- MediPolicyEJB
  - SERVERJDK\_50\_PLUGINDIR/...
  - ejbModule
    - com.mediquotes.policy.d
      - ClaimResult.java
      - ContactResult.java
      - FraudAssessmentRes
    - com.mediquotes.policy.ei
    - com.mediquotes.policy.se
    - META-INF
  - WAS\_50\_PLUGINDIR/lib/j2ee
  - WAS\_50\_PLUGINDIR/lib/ivjej
  - WAS\_50\_PLUGINDIR/lib/vapr
  - WAS\_50\_PLUGINDIR/lib/ras.:
  - WAS\_50\_PLUGINDIR/lib/utlis
  - WAS\_50\_PLUGINDIR/lib/runt
  - WAS\_50\_PLUGINDIR/lib/rsae
  - WAS\_50\_PLUGINDIR/lib/ecut
  - WAS\_50\_PLUGINDIR/lib/ejbc
  - WAS\_50\_PLUGINDIR/lib/ejbp
  - WAS\_50\_PLUGINDIR/lib/wse-
  - WAS\_50\_PLUGINDIR/lib/runt
  - WAS\_50\_PLUGINDIR/lib/pmin
  - WAS\_50\_PLUGINDIR/lib/pm.j
  - WAS 50\_PLUGINDIR/lib/appr

Package Explorer Hierarchy

```

private long claimID;
private long policyID;
private java.util.Date claimDate;
private double ClaimValue;
private ContactResult policyholder;

/**
 * Returns the claimDate.
 * @return java.util.Date
 */
public java.util.Date getClaimDate()
    return claimDate;
}

/**
 * Returns the claimID.
 * @return long
 */
public long getClaimID() {
    return claimID;
}

/**
 * Returns the claimValue.
 * @return double

```

Outline

- com.mediquotes.policy.data
  - import declarations
  - ClaimResult
    - claimID : long
    - policyID : long
    - claimDate : java.util.Date
    - ClaimValue : double
    - policyholder : ContactResult
    - getClaimDate()
    - getClaimID()
    - getClaimValue()
    - getPolicyholder()
    - getPolicyID()
    - setClaimDate(Date)
    - setClaimID(long)
    - setClaimValue(double)
    - setPolicyholder(ContactResult)
    - setPolicyID(long)

Tasks (0 items)

Resource	In Folder	Location

**New**

### Java Class

Create a new Java class.

Source Folder:

Package:

Enclosing type:

---

Name:

Modifiers:  public  default  private  protected  
 abstract  final  static

Superclass:

Interfaces:

Which method stubs would you like to create?

public static void main(String[] args)

Constructors from superclass

Inherited abstract methods



Package Explorer

- MediPolicyEJB
  - SERVER.JDK\_50\_PLUGINDIR/...
  - ejbModule
    - com.mediquotes.policy.d.
      - ClaimResult.java
      - ContactResult.java
      - FraudAssessmentRes
    - com.mediquotes.policy.ei
    - com.mediquotes.policy.se
    - META-INF
    - WAS\_50\_PLUGINDIR/lib/j2ee
    - WAS\_50\_PLUGINDIR/lib/ivjej
    - WAS\_50\_PLUGINDIR/lib/vapr
    - WAS\_50\_PLUGINDIR/lib/ras.:
    - WAS\_50\_PLUGINDIR/lib/utis
    - WAS\_50\_PLUGINDIR/lib/runt
    - WAS\_50\_PLUGINDIR/lib/rsae
    - WAS\_50\_PLUGINDIR/lib/ecut
    - WAS\_50\_PLUGINDIR/lib/ejbc
    - WAS\_50\_PLUGINDIR/lib/ejbp
    - WAS\_50\_PLUGINDIR/lib/wse-
    - WAS\_50\_PLUGINDIR/lib/runt
    - WAS\_50\_PLUGINDIR/lib/pmin
    - WAS\_50\_PLUGINDIR/lib/pm.j
    - WAS\_50\_PLUGINDIR/lib/appr

Package Explorer Hierarchy

```
package com.mediquotes.policy.data;

import java.io.Serializable;

/**
 * @author Administrator
 *
 * To change this generated comment edit the
 * Window>Preferences>Java>Templates.
 * To enable and disable the creation of this
 * Window>Preferences>Java>Code Generation
 */
public class FraudAssessmentResult implements

    private ClaimResult[] claims;
    private double totalClaimValue;
    /**
     * Returns the claims.
     * @return ClaimResult[]
     */
    public ClaimResult[] getClaims() {
        return claims;
    }
}
```

Outline

- com.mediquotes.policy.data
  - import declarations
  - FraudAssessmentResult
    - claims : ClaimResult[]
    - totalClaimValue : double
    - getClaims()
    - getTotalClaimValue()
    - setClaims(ClaimResult[])
    - setTotalClaimValue(doub

Tasks (0 items)

Resource	In Folder	Location

**New**

### Java Class

Create a new Java class.

Source Folder:

Package:

Enclosing type:

---

Name:

Modifiers:  public  default  private  protected  
 abstract  final  static

Superclass:

Interfaces:

Which method stubs would you like to create?

public static void main(String[] args)

Constructors from superclass

Inherited abstract methods





Package Explorer

- com.mediquotes.policy.data
  - ClaimResult.java
  - ContactResult.java
  - FraudAssessmentResult.java
  - RiskAssessmentResult.java
- com.mediquotes.policy.entity
- com.mediquotes.policy.session

ETA-INF

- 50\_PLUGINDIR/lib/j2ee.jar - D:\Pr...
- 50\_PLUGINDIR/lib/ivjeb35.jar - D...
- 50\_PLUGINDIR/lib/vaprt.jar - D:\F...
- 50\_PLUGINDIR/lib/ras.jar - D:\Pr...
- 50\_PLUGINDIR/lib/utills.jar - D:\Pr...
- 50\_PLUGINDIR/lib/runtime.jar - D...
- 50\_PLUGINDIR/lib/rsaexternal.jar
- 50\_PLUGINDIR/lib/ecutil.jar - D:\...
- 50\_PLUGINDIR/lib/ejbcontainer.jar
- 50\_PLUGINDIR/lib/ejbportable.jar
- 50\_PLUGINDIR/lib/wsexception.jar
- 50\_PLUGINDIR/lib/runtimefw.jar -
- 50\_PLUGINDIR/lib/pmimpl.jar - D:\...
- 50\_PLUGINDIR/lib/pm.jar - D:\Pro...

Package Explorer Hierarchy

```
public class RiskAssessmentResult implements RiskAssessmentResult {  
  
    private double totalInsuredValue;  
    private double totalClaimValue;  
    private int policyCount;  
    private int claimCount;  
    /**  
     * Returns the claimCount.  
     * @return int  
     */  
    public int getClaimCount() {  
        return claimCount;  
    }  
  
    /**  
     * Returns the policyCount.  
     * @return int  
     */  
    public int getPolicyCount() {  
        return policyCount;  
    }  
  
    /**  
     * Returns the totalClaimValue.  
     * @return double  
     */  
}
```

Outline

- com.mediquotes.policy.data
  - import declarations
  - RiskAssessmentResult
    - totalInsuredValue : double
    - totalClaimValue : double
    - policyCount : int
    - claimCount : int
    - getClaimCount()
    - getPolicyCount()
    - getTotalClaimValue()
    - getTotalInsuredValue()
    - setClaimCount(int)
    - setPolicyCount(int)
    - setTotalClaimValue(double)
    - setTotalInsuredValue(doub

Tasks (0 items)

Resource	In Folder	Location

# To insert business logic

- The design for session EJB implementation is shown as under (Class diagram for PolicySession EJB implementation):

```
<<JavaInterface>>  
PolicySession  
riskAssessment()  
fraudAssessment()
```

```
PolicySessionBean  
riskAssessment()  
fraudAssessment()  
ejbCreate()  
ejbActivate()  
ejbPassivate()  
ejbRemove()
```

```
<<JavaInterface>>  
PolicySessionHome  
create()
```

# To insert business logic

- In the J2EE Hierarchy view of the J2EE perspective, expand the PolicySession EJB and open its implementation class, PolicySessionBean. In this class business logic is to be inserted.
- Add import statements
- Add two methods.
- The purpose of riskAssessment method is to find the total insured value and total claim value against a subset of postal codes between the two dates specified.

# To insert business logic

- The purpose of fraudAssessment() method is to accept a house number and postal code and return a complex type containing details about all previous claims made against that property.
- Select both the methods from the outline view, right-click and select Enterprise Bean -> Promote to Remote Interface. Two methods will appear in the EJB's remote interface, PolicySession.
- Save and close the PolicySessionBean class.
- Note: study source codes given in the directory:  
...\\MediPolicyEJB\\ejbModule\\com\\mediquotes\\policy\\session



J2EE Hierarchy

- Enterprise Applications
  - Application Client Modules
  - Connector Modules
  - Web Modules
  - EJB Modules
    - MediPolicyEJB
      - Address
      - Claim
      - Contact
      - Policy
      - PolicySession
        - PolicySessionHc
        - PolicySession
        - Policy

```
PolicySession.java PolicySessionBean.java  
}  
/**  
 * ejbRemove  
 */  
public void ejbRemove() {  
}  
public RiskAssessmentResult riskAssessment(String  
partialCode, Date firstDate, Date lastDate) {  
// local interfaces  
AddressLocal addr;  
ContactLocal cont;  
PolicyLocal pol;  
ClaimLocal claim;  
RiskAssessmentResult risk = new RiskAssessmentResult();  
System.out.println("## Started MediQuotes riskAssessment");  
  
ctx = new InitialContext();  
localHome addrHome = (AddressLocalHome)  
lookup("java:comp/env/ejb/Address");
```

- Cut
- Copy
- Paste
- Delete
- Refactor
- Add Javadoc Comment
- Compare With
- Replace With
- Restore from Local History...
- Enterprise Bean
  - Promote to Local Interface
  - Promote to Local Home Interface
  - Promote to Remote Interface
  - Promote to Home Interface

Resource	In Folder
pe com.mediquotes.policy.entity.ClaimKey	PolicySessi... MediPolicyEJB/ejbM

2 items selected



**J2EE Hierarchy**

- Enterprise Applications
  - Application Client Modules
  - Connector Modules
  - Web Modules
  - EJB Modules
    - MediPolicyEJB
      - Address
      - Claim
      - Contact
      - Policy
      - PolicySession
        - PolicySessionHc
        - PolicySession**
        - PolicySessionBe
  - Maps

J2EE Hierarchy | J2EE Navigator

```

*PolicySession.java X PolicySessionBean.java

package com.mediquotes.policy.session;
import java.util.Date;
import com.mediquotes.policy.data.RiskAssessmentResult;
import com.mediquotes.policy.data.FraudAssessmentResult;
/**
 * Remote interface for Enterprise Bean: PolicySession
 */
public interface PolicySession extends javax.ejb.EJBObject {
    public RiskAssessmentResult riskAssessment(
        String partialCode,
        Date firstDate,
        Date lastDate)
        throws java.rmi.RemoteException;
    public FraudAssessmentResult fraudAssessment(
        String houseNumber,
        String code)
        throws java.rmi.RemoteException;
}
    
```

**Outline**

- com.mediquotes.policy.sess
  - import declarations
  - PolicySession

**Tasks (1 item)**

	Resource	In Folder
() is undefined for the type com.mediquotes.policy.entity.ClaimKey	PolicySessi...	MediPolicyEJB/ejbM

Tasks | Properties | Servers | Console | DB Servers

# To create a local EJB reference

- If you look at the code of PolicySessionBean class, it uses a local EJB reference, `java:comp/env/ejb/Address` to find the Address entity EJB before calling its custom finders. This local EJB reference must be explicitly defined in the EJB module deployment descriptor.
- Open the EJB deployment descriptor for the MediPolicyEJB module and switch to references tab.
- Select PolicySession from the list of EJBs. Click on the Add... button

# To create a local EJB reference

- In the Reference dialog, select EJB local reference. Click Next.
- Click the Browse button next to the Link field. On the Reference Link dialog, select Enterprise bean in current project radio button and Address from the link list. Click on OK and then Finish. The references section of the EJB deployment descriptor and other screens are shown here.
- Save and close the deployment descriptor.





J2EE Hierarchy

- Enterprise Applications
  - Application Client Modules
  - Connector Modules
  - Web Modules
  - EJB Modules
    - MediPolicyEJB
- Databases
- Servers
- Server Configurations

EJB Deployment Descriptor

### References

- Address
- Claim
- Contact
- Policy
- PolicySession

Name:

Description:

Link:

Type:

Home:

Remote:

J2EE Hierarchy J2EE Navigator

Overview Beans Assembly Descriptor References Access Source

Outline

- MediPolicyEJB
  - Address
  - Claim
  - Contact
  - Policy
  - PolicySession

Tasks (0 items)

C	!	Description



J2EE Hierarchy

- Enterprise Applications
  - Application Client Modules
  - Connector Modules
  - Web Modules
- EJB Modules
  - MediPolicyEJB
- Databases
- Servers
- Server Configurations

EJB Deployment Descriptor

### References

- Address
- Claim
- Contact
- Policy
- PolicySession

Add... Remove

### Add Reference

#### Reference

Select the type of reference to create.

- EJB reference  
Creates a reference to an enterprise bean that is accessed through its remote home and remote interface.
- EJB local reference  
Create a reference to an enterprise bean that is accessed through its local home and local interface.
- EJB resource reference  
Create a reference to an external resource.
- Security role reference  
Creates a reference to a security role.
- Resource environment reference  
Creates a reference to administered objects referenced by an enterprise bean.

< Back Next > Finish Cancel

J2EE Hierarchy J2EE Navigator

### Outline

- MediPolicyEJB
  - Address
  - Claim
  - Contact
  - Policy
  - PolicySession

Overview Beans Ass

### Tasks (0 items)

C	!	Description


**Link Selection** [X]

**Reference Link**

Enterprise bean in current EJB project

Link:

Enterprise bean in different EJB project

+...  MediPolicy

OK Cancel

## Add EJB Local Reference

### EJB Local Reference

Create a reference to an enterprise bean that is accessed through its local home and local interface.



Name:	<input type="text" value="ejb/Address"/>
Link:	<input type="text" value="Address"/> <input type="button" value="Browse..."/>
Type:	<input type="text" value="Entity"/> <input type="button" value="v"/>
Local:	<input type="text" value="com.mediquotes.policy.entity.AddressLocal"/> <input type="button" value="Browse..."/>
Local home:	<input type="text" value="com.mediquotes.policy.entity.AddressLocalHome"/> <input type="button" value="Browse..."/>
Description:	<input type="text"/>

< Back

Next >

Finish

Cancel



J2EE Hierarchy

- Enterprise Applications
  - Application Client Modules
  - Connector Modules
  - Web Modules
  - EJB Modules
    - MediPolicyEJB
  - Databases
  - Servers
  - Server Configurations

J2EE Hierarchy | J2EE Navigator

\*EJB Deployment Descriptor

### References

- Address
- Claim
- Contact
- Policy
- PolicySession
  - EjbLocalRef ejb/Address

Name:

Description:

Link:

Type:

Local home:

Local:

Overview | Beans | Assembly Descriptor | References | Access | Source

Outline

- MediPolicyEJB
  - Address
  - Claim
  - Contact
  - Policy
  - PolicySession

Tasks (0 items)

C	!	Description

Tasks | Properties | Servers | Console | DB Servers

# To deploy the application

- Before starting application in the application server, we need to deploy it, which will generate all of the necessary stubs to allow it to execute inside WebSphere.
- In the J2EE perspective of WebSphere Studio, select MediPolicyEJB module from the J2EE Hierarchy view.
- Right-click on the module and select its Generate -> Deploy and RMIC code... menu.
- Click on the Select All button to check all five EJBs. Click on Finish to start the generation process.



J2EE Hierarchy

- Enterprise Applications
  - Application Client Modules
  - Connector Modules
  - Web Modules
  - EJB Modules
    - MediPolicyEJB
- Databases
- Servers
- Server Co...

Outline

- MediPolicyEJB
  - Address
  - Claim
  - Contact
  - Policy
  - PolicyS...

- New
- Import...
- Export...
- Generate
  - Deploy and RMIC Code...
  - EJB to RDB Mapping...
    - Schema DDL
- Access Beans
- Migrate
- Open With
- Debug on Server...
- Run on Server...
- Profile on Server...
- Restart Project
- Export EJB JAR File...
- Run Validation
- Delete...
- Rename...
- Properties

\*EJB Deployment Descriptor

### References

Address	Name:	ejb/Address
Claim	Description:	
Contact	Link:	Address <input type="button" value="Browse..."/>
Policy	Type:	Entity
PolicySession	Local home:	com.mediquotes.policy.entity.AddressL <input type="button" value="Browse..."/>
EjbLocalRef ejb/Address	Local:	com.mediquotes.policy.entity.AddressL <input type="button" value="Browse..."/>

view | Beans | Assembly Descriptor | References | Access | Source

Tasks (0 items)

!	Description
---	-------------

Tasks | Properties | Servers | Console | DB Servers

## Generate Deploy and RMIC Code

### Generate Deploy Code and RMIC Code for the Selected Enterprise Beans

The beans are selected that changed during this session and that need updated deployment code.

- Address
- Claim
- Contact
- Policy
- PolicySession

Select all

Deselect all

Default

Finish

Cancel



## To test the new MediQuotes Policy System

- WSAD provides an integrated WebSphere Test Environment (WTE) and a Universal Test Client (UTC) specifically for this purpose.

To start application server:

- From the J2EE perspective, select the PolicySession EJB, right-click on the EJB and select the Run on Server... menu.
- It will publish the enterprise application MediPolicy to our LocalWAS50 application server and then start server.



J2EE Hierarchy

- Enterprise Application
- Application Client Modules
- Connector Modules
- Web Modules
- EJB Modules
  - MediPolicyEJB
    - Address
    - Claim
    - Contact
    - Policy
    - PolicySession
    - Maps
- Databases
- Servers

Test Client

IBM Universal Test Client

- References
  - EJB References
    - PolicySession
  - No UserTransaction loaded
  - Object References
    - No object references available
  - Class References
    - No class references available
  - Utilities
- Parameters
  - Results

Outline

An outline is not available.

Console [LocalWAS50 (WebSphere v5.0)]

[8/11/04 15:08:27:281 GMT+05:30]	11489c31	WebGroup	I	SRVE0180I:	[IBM U
[8/11/04 15:08:27:328 GMT+05:30]	11489c31	WebGroup	I	SRVE0180I:	[IBM U
[8/11/04 15:08:27:578 GMT+05:30]	6507dc2f	WebGroup	I	SRVE0180I:	[IBM U
[8/11/04 15:08:27:594 GMT+05:30]	11489c31	WebGroup	I	SRVE0180I:	[IBM U
[8/11/04 15:08:27:625 GMT+05:30]	11489c31	WebGroup	I	SRVE0180I:	[IBM U
[8/11/04 15:08:27:672 GMT+05:30]	6507dc2f	WebGroup	I	SRVE0180I:	[IBM U
[8/11/04 15:08:27:719 GMT+05:30]	6507dc2f	WebGroup	I	SRVE0180I:	[IBM U

Tasks Properties Servers Console DB Servers

# To test the new MediQuotes Policy System

- The test client can be launched in one of three ways:
  1. Right-click on a started server definition in the Servers view and selecting the Run universal test client menu.
  2. Right-clicking on an EJB in the J2EE perspective and selecting the Run on Server... menu
  3. Right-clicking on any Java class in a Web project and selecting Launch Universal Test Client menu

# To test the new MediQuotes Policy System

- Once the server has been started, the UTC now appears as shown.
- Perform the following steps to test our new methods on the PolicySession EJB:
- Expand PolicySession and then PolicySessionHome. Click on *create()*
- Click on the *Invoke* button. It will create a new instance of session EJB. Click on *Work with Object* to start working with it.
- A new entry called *PolicySession 1* appears on the list of EJB references. When this is selected, it displays all of the methods exposed on the remote interface.

# To test the new MediQuotes Policy System

- Select riskAssessment() method. A parameters is displayed.
- Complete the parameter list with a partial string  
postcode and two dates as : FP, 01-Jan 01,  
2001 4:04:46 PM and Jan 01, 2002  
4:04:46 PM
- Note: Take care regarding your regional settings
- Click on *Invoke*.



J2EE Hierarchy

- Enterprise Application
- Application Client Module
- Connector Modules
- Web Modules
- EJB Modules
  - MediPolicyEJB
    - Address
    - Claim
    - Contact
    - Policy
    - PolicySession
    - Maps
- Databases
- Servers

Test Client

IBM Universal Test Client

References

- EJB References
  - PolicySession
    - PolicySessionHome
  - No UserTransaction loaded
- Object References
  - No object references available
- Class References
  - No class references available
- Utilities

Parameters

Results

Outline

An outline is not available.

Console [LocalWAS50 (WebSphere v5.0)]

```
[8/11/04 15:49:04:016 GMT+05:30] 1ba460e2 WebGroup I SRVE0180I: [IBM U
[8/11/04 15:49:28:234 GMT+05:30] 387ca0fe WebGroup I SRVE0180I: [IBM U
[8/11/04 15:49:28:547 GMT+05:30] 387ca0fe WebGroup I SRVE0180I: [IBM U
[8/11/04 15:49:28:594 GMT+05:30] 387ca0fe WebGroup I SRVE0180I: [IBM U
[8/11/04 15:49:28:625 GMT+05:30] 194de0fb WebGroup I SRVE0180I: [IBM U
[8/11/04 15:49:28:672 GMT+05:30] 387ca0fe WebGroup I SRVE0180I: [IBM U
[8/11/04 15:49:28:734 GMT+05:30] 387ca0fe WebGroup I SRVE0180I: [IBM U
```

Tasks Properties Servers Console DB Servers



J2EE Hierarchy

- Enterprise Application
- Application Client Module
- Connector Modules
- Web Modules
- EJB Modules
  - MediPolicyEJB
    - Address
    - Claim
    - Contact
    - Policy
    - PolicySession
    - Maps
- Databases
- Servers

Test Client

IBM Universal Test Client

- References
  - EJB References
    - PolicySession
      - PolicySessionHome
        - Method Visibility
        - PolicySession.create()
    - No UserTransaction loaded
  - Object References
    - No object references available
  - Class References
    - No class references available
  - Utilities

Parameters

Results

Outline

An outline is not available.

Console [LocalWAS50 (WebSphere v5.0)]

```
[8/11/04 15:49:04:016 GMT+05:30] 1ba460e2 WebGroup I SRVE0180I: [IBM U
[8/11/04 15:49:28:234 GMT+05:30] 387ca0fe WebGroup I SRVE0180I: [IBM U
[8/11/04 15:49:28:547 GMT+05:30] 387ca0fe WebGroup I SRVE0180I: [IBM U
[8/11/04 15:49:28:594 GMT+05:30] 387ca0fe WebGroup I SRVE0180I: [IBM U
[8/11/04 15:49:28:625 GMT+05:30] 194de0fb WebGroup I SRVE0180I: [IBM U
[8/11/04 15:49:28:672 GMT+05:30] 387ca0fe WebGroup I SRVE0180I: [IBM U
[8/11/04 15:49:28:734 GMT+05:30] 387ca0fe WebGroup I SRVE0180I: [IBM U
```

Tasks Properties Servers Console DB Servers



J2EE ...rchy

- Enterprise
- Application
- Connect
- Web Mod
- EJB Mod
  - Medi
    - A
    - C
    - F
    - F
    - M
- Databas
- Servers

Test Client

### IBM Universal Test Client

#### References

- EJB References
  - PolicySession
    - PolicySession
      - Method Visibi
      - PolicySession
    - No UserTransaction
  - Object References
    - No object references
  - Class References
    - No class references

#### Parameters

com.mediquotes.policy.session.PolicySession create()

Invoke

Results

Outline

An outline is not

Console [LocalWAS50 (WebSphere v5.0)]

```
[8/11/04 15:49:28:234 GMT+05:30] 387ca0fe WebGroup I SRVE0180I: [IBM Univers
[8/11/04 15:49:28:547 GMT+05:30] 387ca0fe WebGroup I SRVE0180I: [IBM Univers
[8/11/04 15:49:28:594 GMT+05:30] 387ca0fe WebGroup I SRVE0180I: [IBM Univers
[8/11/04 15:49:28:625 GMT+05:30] 194de0fb WebGroup I SRVE0180I: [IBM Univers
[8/11/04 15:49:28:672 GMT+05:30] 387ca0fe WebGroup I SRVE0180I: [IBM Univers
[8/11/04 15:49:28:734 GMT+05:30] 387ca0fe WebGroup I SRVE0180I: [IBM Univers
[8/11/04 15:50:36:812 GMT+05:30] 1ba460e2 WebGroup I SRVE0180I: [IBM Univers
```

Tasks Properties Servers Console DB Servers





J2EE ...rchy x

- Enterprise
- Application
- Connect
- Web Mod
- EJB Mod
  - Medi
    - 2.0 A
    - 2.0 C
    - 2.0 F
    - 2.0 F
    - 2.0 M
- Databas
- Servers

J2EE Hi... J2...

Outline x

An outline is not

Test Client x

### IBM Universal Test Client

#### References

- EJB References**
  - PolicySession
    - PolicySessionHo
      - Method Visibility
      - PolicySession cr
  - No UserTransaction loa
- Object References**
  - No object references av
- Class References**
  - No class references av
- Utilities**

#### Parameters

com.mediquotes.policy.session.PolicySession create()

Invoke

Results from

- com.mediquotes.policy.session.PolicySessionHome.create()

---

- PolicySession (com.mediquotes.policy.session.PolicySession)

Work with Object

Console [LocalWAS50 (WebSphere v5.0)]

```
[8/11/04 15:49:28:547 GMT+05:30] 387ca0fe WebGroup I SRVE01801: [IBM Univers
[8/11/04 15:49:28:594 GMT+05:30] 387ca0fe WebGroup I SRVE01801: [IBM Univers
[8/11/04 15:49:28:625 GMT+05:30] 194de0fb WebGroup I SRVE01801: [IBM Univers
[8/11/04 15:49:28:672 GMT+05:30] 387ca0fe WebGroup I SRVE01801: [IBM Univers
```

Tasks Properties Servers Console DB Servers



J2EE ...rchy x

- Enterprise
- Application
- Connect
- Web Mod
- EJB Mod
- Medi
- A
- C
- F
- M
- Databas
- Servers

J2EE Hi... J2...

Outline x

An outline is not

Test Client x

### IBM Universal Test Client

#### References

- EJB References**
  - PolicySession
    - PolicySessionHome
    - PolicySession 1
      - Method Visibility
        - FraudAssessmentResult fraudAssessment(String, St
        - RiskAssessmentResult riskAssessment(String, Date,
- No UserTransaction loaded
- Object References**
  - No object references available
- Class References**
  - No class references available
- Utilities**

#### Parameters

- com.mediquotes.policy.session.I

Invoke

Results from

- com.mediquotes.policy.session

PolicySession (com.mediquot

Work with Object

Console [LocalWAS50 (WebSphere v5.0)]

```
[8/11/04 15:50:36:812 GMT+05:30] 1ba460e2 WebGroup I SRVE0180I: [IBM Univers
[8/11/04 15:50:59:109 GMT+05:30] 387ca0fe WebGroup I SRVE0180I: [IBM Univers
[8/11/04 15:51:42:531 GMT+05:30] 194de0fb WebGroup I SRVE0180I: [IBM Univers
```

Tasks Properties Servers Console DB Servers



J2EE ...rchy x

- Enterprise
- Application
- Connect
- Web Mod
- EJB Mod
  - Medi
    - 2.0 A
    - 2.0 C
    - 2.0 F
    - 2.0 M
- Databases
- Servers

J2EE Hi... J2...

Outline x

An outline is not

Test Client x

### IBM Universal Test Client

#### References

- EJB References**
  - PolicySession
    - PolicySessionHome
    - PolicySession\_1
      - Method Visibility
      - FraudAssessmentResul
      - RiskAssessmentResult
  - No UserTransaction loaded
- Object References**
  - ServerException: RemoteE
- Class References**
  - No class references available

#### Parameters

String:	FP
Date:	Jan 01, 2001 4:04:46 PM
Date:	Jan 01, 2002 4:04:46 PM

Invoke

Results from com.mediquotes.policy.session.PolicySessic

- com.mediquotes.policy.data.RiskAsse... (com.mediquotes.)

Console [LocalWAS50 (WebSphere v5.0)]

```
[8/11/04 16:05:13:141 GMT+05:30] 194de0fb SystemOut O ## Started MediQuotes r
[8/11/04 16:05:13:391 GMT+05:30] 194de0fb SystemOut O ## Completed MediQuotes
```

Tasks Properties Servers Console DB Servers

## To test the new MediQuotes Policy System

- An instance of RiskAssessmentResult is returned.
- Click on *Work with Object* button.
- Under Object references, select the new RiskAssessmentResult entry. Select the method link *double getTotalClaimValue()* and click *Invoke*. The total value of all the claims made in that partial postal code between the two dates is returned.
- Repeat above steps for double *getTotalInsuredValue()*, *int getClaimCount()* etc.



J2EE ...rchy x

- Enterprise
- Application
- Connect
- Web Mod
- EJB Mod
- Medi
- Database
- Servers

Outline x

An outline is not

Test Client x

### IBM Universal Test Client

#### References

- [RiskAssessmentResult riskAss...](#)
- No UserTransaction loaded
- Object References**
  - [ServerException: RemoteExceptio](#)
  - [RiskAssessmentResult@645720fd](#)
- Class References**
  - No class references available
- Utilities**

recently added:  
RiskAssessmentResult@645720fd  
isk...

#### Parameters

Invoke

Results from [com.mediquotes.policy.session.PolicyS...](#)

- [com.mediquotes.policy.data.RiskAsse... \(com.mediquo](#)

Work with Object

Console [LocalWAS50 (WebSphere v5.0)]

```
[8/11/04 16:05:13:141 GMT+05:30] 194de0fb SystemOut      O ## Started MediQuotes r
[8/11/04 16:05:13:391 GMT+05:30] 194de0fb SystemOut      O ## Completed MediQuotes
```

Tasks Properties Servers Console DB Servers



J2EE ...rchy x

- Enterprise
- Application
- Connect
- Web Mod
- EJB Mod
- Medi
- int getClaimCount()
- int getPolicyCount()
- double getTotalClaimValue()
- double getTotalInsuredValue()
- void setClaimCount(int)
- void setPolicyCount(int)
- void setTotalClaimValue(double)

Databases

Servers

J2EE Hi... J2...

Test Client x

### IBM Universal Test Client

#### References

- Object References
- ServerException: RemoteExcep
- RiskAssessmentResult@64572C
- Inspect Fields
- Method Visibility
- int getClaimCount()
- int getPolicyCount()
- double getTotalClaimValue()
- double getTotalInsuredValue()
- void setClaimCount(int)
- void setPolicyCount(int)
- void setTotalClaimValue(double)

#### Parameters

Invoke

Results from com.mediquotes.policy.session.PolicyS

com.mediquotes.policy.data.RiskAsse... (com.mediquo

Work with Object

Outline x

An outline is not

Console [LocalWAS50 (WebSphere v5.0)]

```
[8/11/04 16:05:13:141 GMT+05:30] 194de0fb SystemOut O ## Started MediQuotes r
[8/11/04 16:05:13:391 GMT+05:30] 194de0fb SystemOut O ## Completed MediQuotes
```

Tasks Properties Servers Console DB Servers



J2EE ...rchy x

- Enterprise
- Application
- Connect
- Web Mod
- EJB Mod
- Medi
- ...
- Databases
- Servers

J2EE Hi... J2...

Outline x

An outline is not

Test Client x

### IBM Universal Test Client

#### References

- Object References
- ServerException: RemoteExcep
- RiskAssessmentResult@64572C
- Inspect Fields
- Method Visibility
- int getClaimCount()
- int getPolicyCount()
- double getTotalClaimValue()
- double getTotalInsuredValue()
- void setClaimCount(int)
- void setPolicyCount(int)
- void setTotalClaimValue(double)

#### Parameters

double getTotalClaimValue()

Invoke

Results from

- com.mediquotes.policy.data.RiskAssessmentResult.get
- ()
- 64800.0 (double)

Console [LocalWAS50 (WebSphere v5.0)]

```
[8/11/04 16:05:13:141 GMT+05:30] 194de0fb SystemOut O ## Started MediQuotes r
[8/11/04 16:05:13:391 GMT+05:30] 194de0fb SystemOut O ## Completed MediQuotes
```

Tasks Properties Servers Console DB Servers

## To test the new MediQuotes Policy System

- We can use UTC to test if the `fraudAssessment()` method behaves as we expect.
- Return back to the session EJB instance called *PolicySession1*. On this occasion, select the *fraudAssessment()* method.
- Enter 88 (a house number) for the first String parameter and BP1 2BP (a full postal code) as the second String parameter. Click on *Invoke*
- A new instance of value object `FraudAssessmentResult` is returned. Click on *Work with Object*.



# To test the new MediQuotes Policy System

- Invoke double `getTotalClaimValue()` method.
- The *double* `getClaims()` method returns an array of `ClaimResult` value objects containing claim details.
- To access each `ClaimResult` instance in the array, use the utility in the test client to convert the array to a list. It can be invoked by selecting the `Utilities->Object[]->List` link. Select the `ClaimResult[]` entry in the list and click on `Convert`. Click on `Work with Contained Objects` for the returned list to add each `ClaimResult` to the list of object references.

## To test the new MediQuotes Policy System

- Each instance of ClaimResult has a method called getPolicyHolder() which returns an instance of ContactResult when invoked.
- When you have finished inspecting returned values, close the UTC and stop the application server from the server view.



J2EE ...rchy x

- Enterprise
- Application
- Connect
- Web Mod
- EJB Mod
- Medi
- A
- C
- F
- M
- Databases
- Servers

J2EE Hi... J2...

Outline x

An outline is not

Test Client x

### IBM Universal Test Client

#### References

- EJB References**
  - PolicySession
    - PolicySessionHome
    - PolicySession 1
      - Method Visibility
      - FraudAssessmentResult fra
      - RiskAssessmentResult riskA
- No UserTransaction loaded
- Object References**
  - ServerException: RemoteExcep
  - RiskAssessmentResult@64572C
  - Inspect Fields
  - Method Visibility
  - inspectClientCount@

#### Parameters

Parameter	Value
String:	88
String:	BP1 2BP

Invoke

Results from  com.mediquotes.policy.session.PolicyS

com.mediquotes.policy.data.FraudAss... (com.mediqu

Work with Object

Console [LocalWAS50 (WebSphere v5.0)]

```
[8/11/04 16:05:13:141 GMT+05:30] 194de0fb SystemOut O ## Started MediQuotes r
[8/11/04 16:05:13:391 GMT+05:30] 194de0fb SystemOut O ## Completed MediQuotes
[8/11/04 16:28:03:828 GMT+05:30] 194de0fb SystemOut O ## Started MediQuotes f
```

Tasks Properties Servers Console DB Servers



J2EE ...rchy x

- Enterprise
- Application
- Connect
- Web Mod
- EJB Mod
- Medi
- Database
- Servers

J2EE Hi... J2...

Outline x

An outline is not

Test Client x

### IBM Universal Test Client

#### References

- [RiskAssessmentResult riskAssess...](#)
- No UserTransaction loaded
- Object References**
  - [ServerException: RemoteException o...](#)
  - [RiskAssessmentResult@645720fd \(Ri...](#)
  - [FraudAssessmentResult@5219e0fb \(...](#)
  - [Inspect Fields](#)
  - [Method Visibility](#)
  - [ClaimResult\[\] getClaims\(\)](#)
  - [double getTotalClaimValue\(\)](#)
  - [void setClaims\(ClaimResult\[\]\)](#)
  - [void setTotalClaimValue\(double\)](#)
- Class References**

#### Parameters

Parameter	Value
String:	88
String:	BP1 2BP

Invoke

Results from [com.mediquotes.policy.session.P...](#)

- [com.mediquotes.policy.data.FraudAss... \(com.m...](#)

Work with Object

Console [LocalWAS50 (WebSphere v5.0)]

```
[8/11/04 16:05:13:141 GMT+05:30] 194de0fb SystemOut O ## Started MediQuotes r
[8/11/04 16:05:13:391 GMT+05:30] 194de0fb SystemOut O ## Completed MediQuotes
[8/11/04 16:28:03:828 GMT+05:30] 194de0fb SystemOut O ## Started MediQuotes f
```

Tasks Properties Servers Console DB Servers