Homework

The following homework is designed to cover the course objectives for this unit.

Assignment 10.1:

Research the ITT Tech Virtual Library to find answers to the following:

- What are the advantages of RMI?
- What is the difference between RMI and CORBA?
- How many interfaces are used in RMI?

Cite your sources using Chicago Manual of Style format. Submit your report to your instructor at the beginning of Unit 11.

Assignment 10.2:

Answer the following questions and submit them to your instructor at the beginning of Unit 11. ***Note:*** Some questions may go across multiple pages; be sure to read the entire question and all answer options.

1. Each remote object has a unique name identified by an URL with the protocol rmi as follows:

   a. http://host:port/name
   b. http://host/name
   c. rmi://host:port/name
   d. //host:port/name

2. To start an RMI registry, use _____ from the command window. (Hint: There are multiple answers.)

   a. start rmiregistry 7000
   b. rmiregistry
   c. rmiregistry 7000
   d. start rmiregistry

3. _____ is a subinterface of java.rmi.Remote that defines the methods for the server object.

   a. Server object interface
   b. Server stub
   c. RMI Registry
   d. Server implementation
   e. Server Skeleton

4. _____ provides the naming services for the server to register the object and for the client to locate the object.

a. Server implementation
b. Server stub
c. Server Skeleton
d. RMI Registry
e. Server object interface

5. _____is a utility that registers remote objects and provides naming services for locating objects.

a. Server Skeleton
b. Server stub
c. RMI Registry
d. Server object interface
e. Server implementation

6. To register a remote object o with a name t at port 7000 on host panda.armstrong.edu, you should use which of the following? (Hint: There are multiple answers.)

a. `Naming.rebind("rmi://panda.armstrong.edu:7000/t", o);`
b. `Name.rebind("rmi://panda.armstrong.edu:7000/t", o);`
c. `Naming.bind("rmi://panda.armstrong.edu:7000/t", o);`
d. `Name.bind("rmi://panda.armstrong.edu:7000/t", o);`

7. _____is a class that implements the remote object interface.

a. Server stub
b. Server object interface
c. RMI Registry
d. Server implementation
e. Server Skeleton

8. _____ is an object that resides on the client host and serves as a surrogate for the remote server object.

a. RMI Registry
b. Server Skeleton
c. Server object interface
d. Server stub
e. Server implementation

9. RMI is about _____.

   a. accessing remote objects and invoking methods from remote objects.
   b. java.lang.Cloneable
   c. passing primitive data between a server and a client
   d. passing objects between a server and a client

10. A remote object must be an instance of _____.

    a. java.lang.Cloneable
    b. java.rmi.RemoteObject
    c. java.io.Serializable
    d. java.rmi.Remote

11. Assume that the file named policy contains the permission for registering a remote object with an RMI registry. To run the program (e.g., RegisterWithRMIServer) that registers a remote object with an RMI registry, use the command _____ from the command window.

    a. `java –Dpolicy=policy RegisterWithRMIServer`
    b. `java RegisterWithRMIServer java –Djava.security.policy=policy`
    c. `java –Djava.security.policy=policy RegisterWithRMIServer`
    d. `java RegisterWithRMIServer`

12. To locate a remote object with a name t at port 7000 on host panda.armstrong.edu, you should use which of the following?

    a. `Remote remoteObj = Naming.lookup("rmi://panda.armstrong.edu:7000/t");`
    b. `Remote remoteObj = Name.lookup("rmi://panda.armstrong.edu:7000/t");`
    c. `Remote remoteObj = Name.lookup("//panda.armstrong.edu:7000/t");`
    d. `Remote remoteObj = Name.lookup("http://panda.armstrong.edu:7000/t");`

13. _____ is an object that resides on the server host and communicates with the stub and the actual server object.

    a. Server object interface
    b. Server stub
    c. RMI Registry
    d. Server implementation
    e. Server Skeleton

14. Which of the following statements are true when passing arguments in a remoter method call? (Hint: There are multiple answers.)

    a. Remote object types are passed differently from local objects. When a client invokes a remote method with a parameter of a remote object type, the stub of the remote object is passed. The server receives the stub and manipulates the parameter through it.
    b. When a client invokes a remote method with parameters, passing the parameters is handled by the stub and the skeleton.
    c. Local object types, such as java.lang.String, are also passed by value, but this is completely different from passing an object parameter in a local call. Any object can be used as a parameter in a remote call as long as it is serializable. The stub serializes the object parameter and sends it in a stream across the network. The skeleton deserializes the stream into an object.
    d. Primitive data types, such as char, int, double, or boolean, are passed by value like a local call.

15. Which of the following statements are true? (Hint: There are multiple answers.)

    a. RMI enables you to program at a higher level of abstraction. It hides the details of socket server, socket, connection, and sending or receiving data. It even implements a multithreading server under the hood, whereas with socket-level programming you have to explicitly implement threads for handling multiple clients.
    b. RMI clients can directly invoke the server method, whereas socket-level programming is limited to passing values.
    c. In socket-level programming, a client operation to send data requires a server operation to read it. The implementation of client and server at the socket-level is tightly synchronized.
    d. RMI applications are scalable and easy to maintain. You can change the RMI server or move it to another machine without modifying the client program except for resetting the URL to locate the server.