

**Assignment-1**  
**Advanced Java Programming (BTC)**  
**Even Semester 2014**

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**Issue Date: 10/1/2014****Duration: 2Week****Submission and Presentation Date: 20/1/2014 (Soft deadline)****Submission and Presentation Date: 23/1/2014 (Hard deadline)****Total Marks: 15 Marks**

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**Instructions to students:-**

- You can make use of the Internet and library resources to find information.
- Present the relevant references /citation at the end of the report.
- Marks will be awarded for the content written in your own words.
- If two or more documents contain duplicate information marks will be deducted.
- You can come for any help similar type of problem (s) will be explained to you, but don't expect the answer of the problem given to you.
- Strictly follow the instructions given to you, marks will be detected if not.
- Penalty of 5% per day will be applied after soft deadline while until the hard deadline for each working day.
- Submission will not be allowed after the hard deadline (in special case after approval by Head of the department).
- **You are advised to attach this sheet with your answer sheet; submission will not be acceptable without this sheet.**

**Note: -**

**This is an individual assignment; any request for forming the group for doing the assignment will not be acceptable.**

**Objective: -**

The aim of this assignment is to provide an overview of a Remote Method Invocation in java during the client and server application development process.

**Learning Outcomes:-**

1. Understanding and define RMI.
2. Explore and understand the use of basic features of interfaces, implementation of interfaces.

3. Exploring java programming concepts.
4. Understanding and implementing the primary steps involved in RMI application development.
5. Developing the concept of real life program development.
6. Analyze and design a computer-based solution to a clearly defined problem.

**Tasks: - Read the following problems/scenario, understands and present your response for the tasks assigned in a documented form.**

**Note: -** Use appropriate software as necessary for program development.

### Tasks to Perform

**Q1.** Describe any four important feature of RMI. Explain the different phases evolved in RMI application development.

**(5 Marks)**

**Q2.** Create a RMI application and perform the following tasks:

**Task-1:** Create an RMI remote interface named *Hello\_from\_Amity*. In this (3 Marks)  
declare the methods named *Say\_Hello* of *string* type, *dis\_name* of *string* type and *max\_three* (*int a*, *int b*, *int c*) of *int* type.

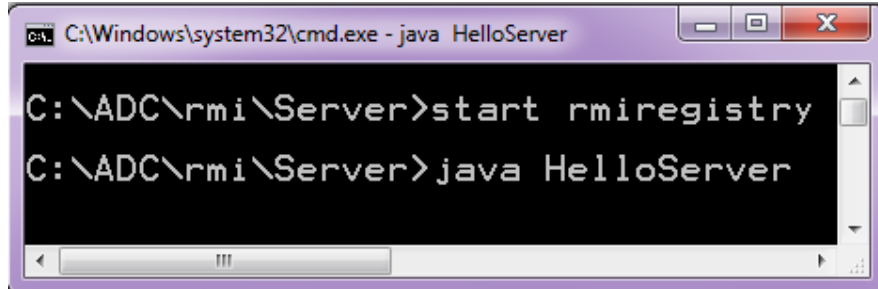
The purposes of these methods are to flash a hello message “*Hello From Amity University*”, display the name e.g. “*Hari Mohan Pandey welcome at Amity University*” and compute the “*maximum of three numbers*” respectively. Each method will throw a remote exception.

**Task-2:** To implement the interface create a class *HelloImplt*. It will extends (3 Marks)  
*UnicastRemoteObject* and implements *Hello\_from\_Amity*. Declare a constructor which will throws a remote exception. Now, provide the implementation of each method discussed in *Task-1*.

Create a main function in class *Hellomplt*. In the main method implement try and catch block. In try, initialize an object of *HelloImplt* class and bind this object instance to the name *HelloServer*. In *catch* block provide the appropriate statements to display errors.

**Task-3:** Create client class *Hello\_Client*. In the *main ()* method of this class declared a variable *msg* of string type and set the value “*blank*”. Use try block to initialize the object of interface class *Hello\_from\_Amity* and bind the object name to the registry. At this stage class the methods declared in *task-1*. Use catch block to display the error if any.

### Sample Output



```
C:\Windows\system32\cmd.exe - java HelloServer
C:\ADC\rmi\Server>start rmiregistry
C:\ADC\rmi\Server>java HelloServer
```

Figure 1: Running HelloServer and ready to accept request from client

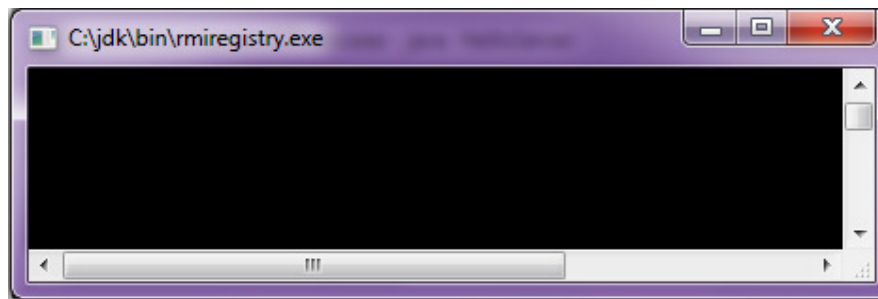
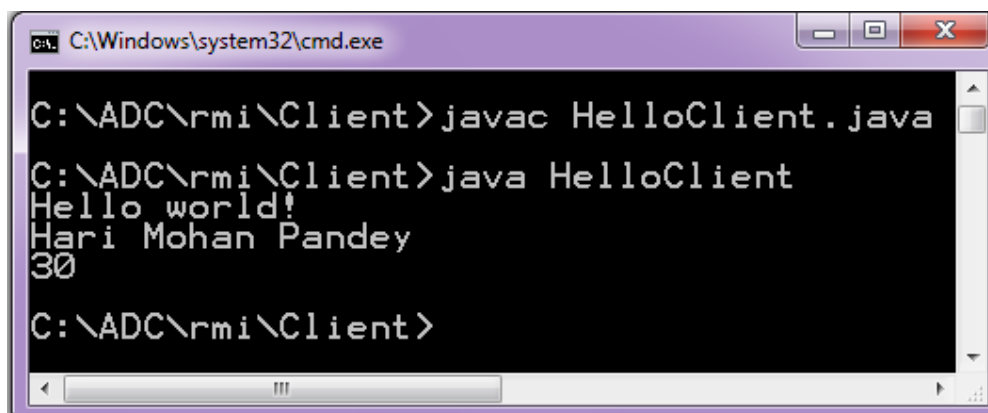


Figure 2: Running rmiregistry using start rmiregistry



```
C:\Windows\system32\cmd.exe
C:\ADC\rmi\Client>javac HelloClient.java
C:\ADC\rmi\Client>java HelloClient
Hello world!
Hari Mohan Pandey
30
C:\ADC\rmi\Client>
```

Figure 3: Compiling client code and Running client named “HelloClient” to get the result (we have taken 10, 20 and 30 for finding maximum of three numbers)

**Instruction:-**

- Answer all the given questions/tasks.
- One consolidated assignment report should be submitted from each student.
- The report should contain the following:
  - Title Page (includes Title of the assignment, Names of the student, Student ID, Department Name, Semester Name, Academic Year)
  - Table of Contents (Topics covers and page number)
  - Answer for tasks given in the assignment.
  - References (book, journals, internet resources used in preparing the presentation report/slides or others)
- Each individual will have one presentation schedule and should be present. Otherwise, no marks will be awarded to the absent student. The absent candidate will be scheduled for another presentation and should present the whole Assignment.

**Guidelines:-**

Follow the guidelines mentioned below for your assignment.

- Assignment reports/answers should be **typed** by individual.
- **Handwritten presentation report/slides will not be accepted**
- Presentation report/slides should have a Title Page. Title Page should contain the following information.
  - ❖ Subject Name
  - ❖ Student name
  - ❖ Student ID
  - ❖ Department Name
  - ❖ Semester Name
  - ❖ Academic year
  - ❖ Faculty Name
- It should have Table of Contents (If require)
- Use page numbers when you are preparing a report.
- Report should be typed in your own words using **Times New Roman font size 12**.
- Use caption for each diagram with diagram number.
- Library and internet resources can be used for finding information.
- Marks will be awarded for the content written in your own words.
- Copy paste from the Internet is strictly not acceptable.

➤ Reference should be included in the last page as follows

- Author name, Book Title, Publisher, Year in case of books
- In case of web site references type the full path of the web page with referenced date
- In case of magazines/ periodicals type article name, magazine name, Issue Number and date

### **Rules & Regulations:-**

- If any topic or diagram of assignment is found copied from the other then marks will be deducted from both assignment.
- The purpose of assignment is to do some brain storming so you can consult books in Library or use internet or computer magazines or any other source.

### **Plagiarism Policy:-**

Plagiarised documents, in parts or whole, submitted by the students will be rejected.



**Assignment and Presentation**  
**Advanced Java Programming Even Semester 2014**

**Evaluation Grid**

<b>Deliverables</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3-4</b>	<b>5</b>	<b>Marks</b>
<b>Q1</b>	Incomplete/ Weak/Plagiarized work	Partially answer without presentation	Partial answer and presentation is ok	Satisfactory	Complete and accurate in all aspects	
<b>Deliverables</b>	<b>0</b>	<b>1</b>	<b>1.5</b>	<b>2</b>	<b>3</b>	<b>Marks</b>
<b>Q2: Task1</b>	Incomplete/ Weak/Plagiarized work	Partially correct without appropriate definition of operations	Partially correct but not in all aspects	Satisfactory	Complete and accurate in all aspects	
<b>Deliverables</b>	<b>0</b>	<b>1</b>	<b>1.5</b>	<b>2</b>	<b>3</b>	<b>Marks</b>
<b>Q2: Task 2</b>	Incomplete/ Weak/Plagiarized work	Partially correct main program	Partially correct implementation of methods and main program but not in aspects	Satisfactory	Complete and accurate in all aspects and with output.	
<b>Deliverables</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>Marks</b>
<b>Q2: Task 3</b>	Incomplete/ Weak/Plagiarized work	Partially correct main program	Partially correct implementation of methods and main program but not in aspects	Satisfactory	Complete and accurate in all aspects and with output.	
<b>Total Marks Obtained</b>						

**\*\* Marks will totally depend on your performance in the presentation of each task. Just providing the answer will not give any benefits to you.**

**\*\* Any students fail to come for presentation will be awarded zero marks.**

**Date of submission and presentation**\_\_\_\_\_

<b>S No</b>	<b>Student Id</b>	<b>Student Name</b>	<b>Total Marks Scored out of 15</b>	<b>Penalty</b>	<b>Final Mark obtained</b>
<b>1</b>					

**Signature of Faculty**