**Distributed Computing**

Quiz and Exercises - 7 Total points: 10

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1. In Quiz and Exercises - 6, Question 2, you conducted an election. Now implement the election with RMI. (5 points)
   The server exports two methods:
   a. *castVote* – This accepts the candidate name (Smith or Jones) and returns nothing (1 point)
   b. *getResult* – Returns a custom data structure with candidates and their votes. Use serialization concept we learnt as part of the course. (2 points)

   Develop relevant client program to show the election process by taking input from client. Consider all possible cases and the program should guide the user. (2 points)

   **Note**: For serialization use Externalizable interface.
   https://www.geeksforgeeks.org/difference-between-serializable-and-externalizable-in-java-serialization/
2. Follow the RMI tutorial here https://docs.oracle.com/javase/tutorial/rmi/overview.html
   The code demonstrates a Compute Engine. You can specify tasks to it. Use the program to calculate Pi value. (5 points)
   **Note:** You will also learn about SecurityManager in the process.
   For calculating the Pi value use the Monte Carlo approach. You should be able to specify the number of random points to be considered as input to the remote method.
   https://www.geeksforgeeks.org/estimating-value-pi-using-monte-carlo/

Follow these guidelines while submitting the exercises

1. Put all classes in a single eclipse project with project name being your studentid_QE7
2. Export the eclipse project as a zip file and submit it on Moodle
3. Put a pdf file with screenshots of the program output for the correct and wrong inputs.
4. The programs should guide the user in putting the correct input
5. Have detailed comments of your logic
6. Do not copy code from internet. If you copy, please leave a comment with the URL on that java file and in your answer sheet (pdf file).
7. Plagiarism will not be tolerated and dealt through the formal channels of the university