**Birla Institute of Technology and Science Pilani, Pilani campus**

**CS G623 Advanced Operating Systems**

**Assignment 1**

**Maximum marks**: 10

**Date of issue of assignment**: 14th September, 2018

**Date of submission**: 22nd September, 2018 11:59 pm

**Mode of submission**: Form a group of maximum two students. Tar the entire source and executable files with your id as the tar file name (e.g. 2018h103004\_155.tar if two students with

id 004 and 155 make a group) and send it at [amit.dua@pilani.bits-pilani.ac.in](mailto:amit.dua@pilani.bits-pilani.ac.in) and upload it to nalanda. Include a readme.txt with group details in your tar file. Submit only one file per group. A penalty of 2 marks per day will be imposed on the group for missing the deadline.

The purpose of this assignment is to give you programming exposure to Remote Procedure Calls

(RPCs), which is an implicit way of communication in distributed systems. In building a distributed application, RPC systems make the task of network programming much easier (without worrying about Socket APIs or send / receive primitives etc). There are mainly two types of approaches for using RPC systems, first- and second-class approaches. One that is integrated with a programming language is called a first-class RPC (Java RMI) and one that isn't, a second-class RPC (SunRPC, CORBA, DCOM, etc).

The server has a list of 50 random questions. A client probes the server and server replies with a random question. On correct answer, the client is awarded one point and zero on wrong reply. A client can ask for server as many times as he wants and server replies with one question each time. There are other clients also requesting the server and are handled in same manner. A client can ask its score and its relative position amongst other clients. A client can go down and can recover. After recovery, it starts with the score it has gained before fault. Once the client wants to finish, it is allowed to exit at any stage.

Submission tar file should include:

1. Source code

2. Executable file

3. Readme file containing the steps to execute the project

**Plagiarism guideline**: If any group is found copying the code or word document (any portion or complete) from Internet or from any other group, matter would be reported to the authority and zero marks will be awarded for this assignment. If any member repeats that, disciplinary action would be taken and he/she will have to repeat the course or full semester.