

# CS 4459: PROJECT

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## 1 Purpose

The general purpose of this project is to make use of the design principles and techniques discussed throughout the course. The project is designed to give experience in developing distributed applications or distributed platforms.

The project is intended to be open-ended, to give you the freedom to explore distributed systems that best suits the interests of the group. in a manner that best suits your own background and interests. It is up to you to decide on programming languages and communication (e.g., sockets, gRPC).

## 2 Project Ideas

- You can build upon assignment 2 by adding an election algorithm based on RAFT for a primary- backup system. The winner of the election becomes the primary. The client and the backups are notified of the new primary.
- Develop software that does data placement using consistent hashing. You could replicate data.
- Implement MapReduce.
- Develop an interesting distributed application e.g., A multi-player real-time game; Multi person chat system
- DNS
- etc

## 3 Brief Description

- You can build upon assignment 2 by implementing RAFT.
- Develop software that does data placement using consistent hashing. You could replicate data.
- Implement MapReduce.

- Develop an interesting distributed application e.g., A multi-player real-time game; Multi person chat system
- DNS
- etc

## 4 Deliverables

- The report is a description of the problem that you focussed on, what you have built to solve the problem, why you built your system the way you did (design), challenges.
- Code

## 5 Grading Criteria

- **Functionality:** This refers to features of the application and/or platform.
- **Distributed System Capabilities:** This refers to distributed workload, data consistency, and handling failures.
- **Report:** The report should describe the application and/or platform and the distributed system capabilities.