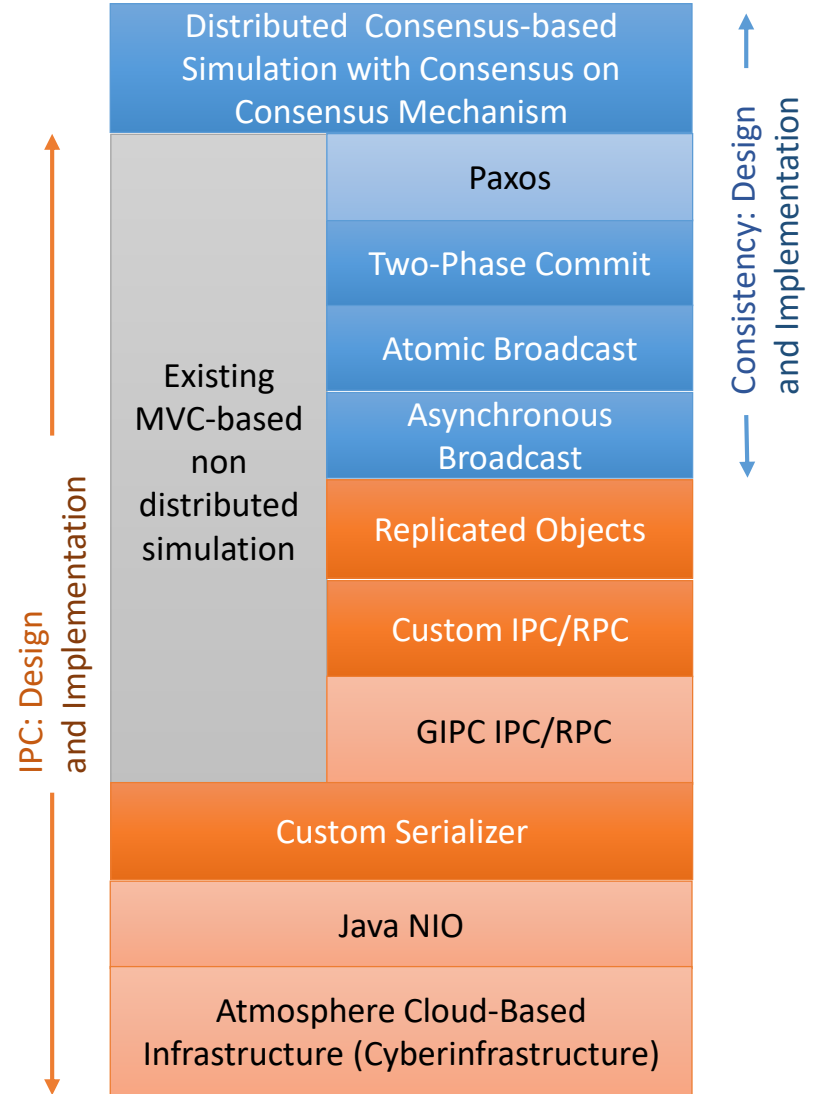
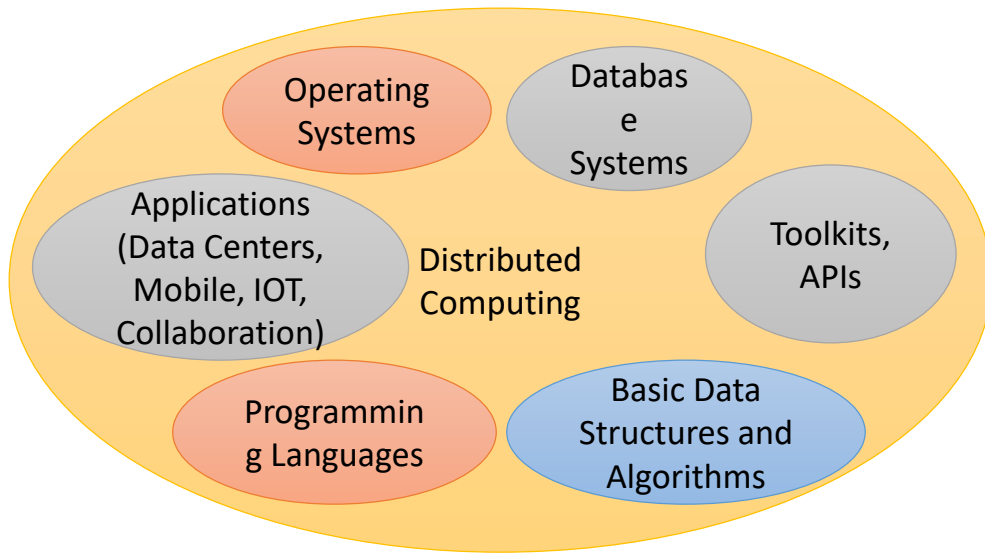


# The Structure of a Project-Based Course on the Fundamentals of Distributed Computing

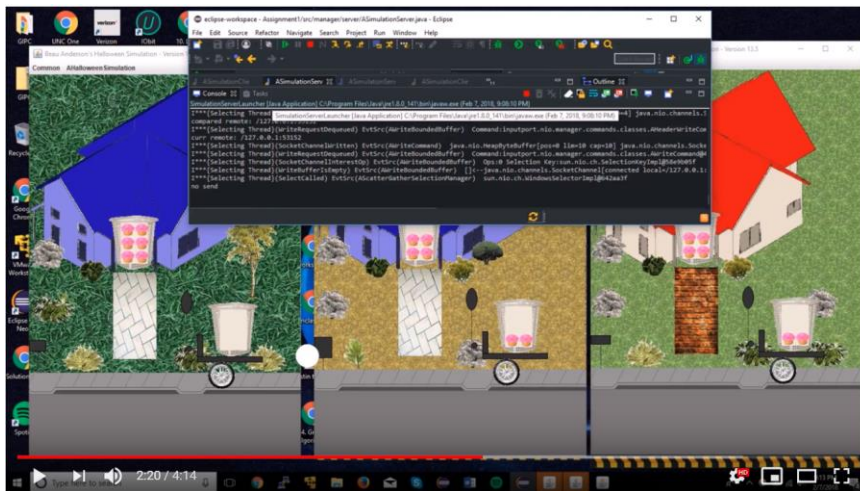
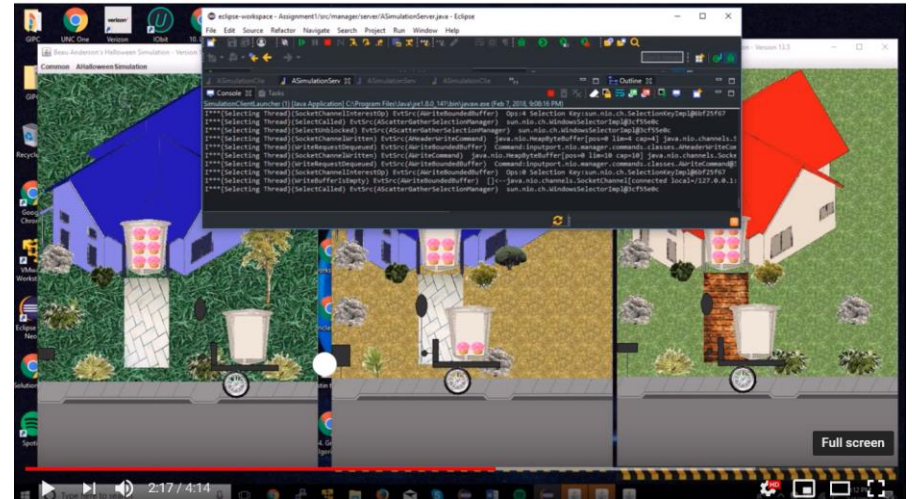
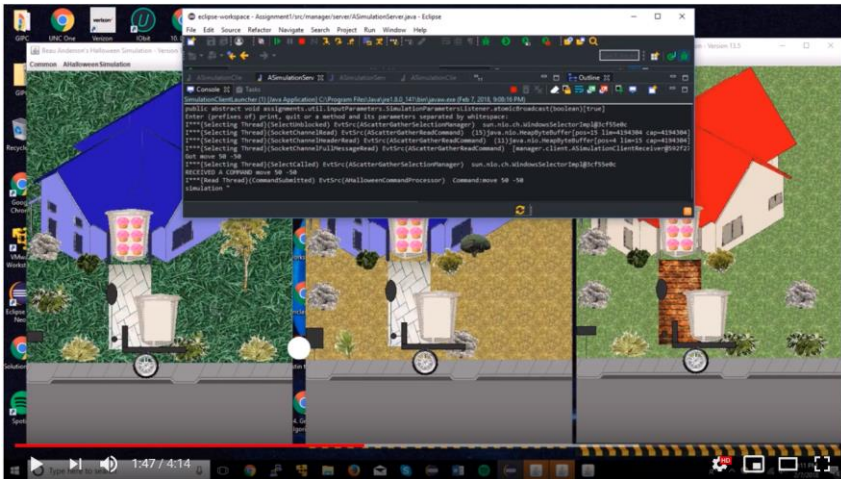
**Prasun Dewan**

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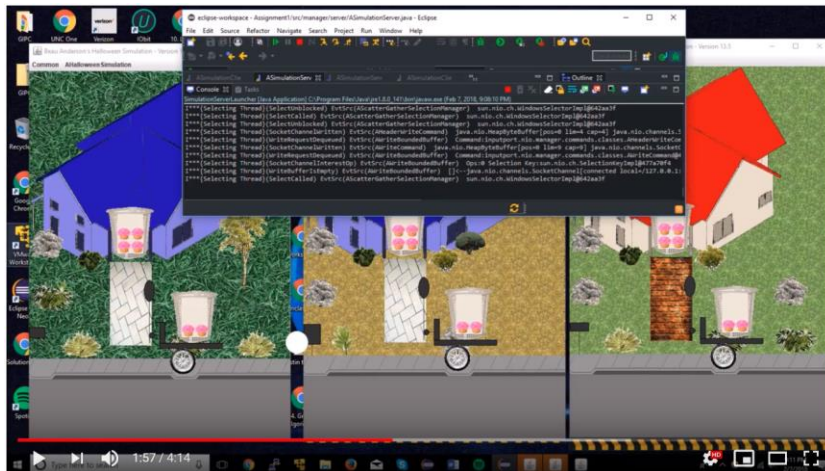
# Visual Inconsistency and Explanation



The sending client trace shows that the input string is set, then the client locally processes, and then it sends to the server.

This time the clients process locally, so the middle takes and the left moves before the server can relay the commands. This causes an inconsistency, as the left simulation moves first, so when it receives the take command after resuming past the breakpoint it cannot take candy as it is out of position.

# Visual Consistency and Explanation



The sending client trace in atomic mode shows that it receives the inputstring, and then sends the command to the server without local processing. It then waits for the server to send the command back before processing.

# Performance Measurements and Explanations

In summary the local loop took 11196 ms to complete, the atomic 5233 ms, and the non atomic 24823 ms. The local does not send to the server. The non atomic takes longer to complete writing, because it does local processing and writes. The atomic doesn't do any local processing, so the time for the main thread to write to socket is quicker since it's processing after it reads from the socket. However total time for both is comparable.

# Summary

Design and Implementation of Basic Algorithms and Abstractions is Considered Fundamental in Non Distributed Computing

IPC and Consistency are Arguably the Fundamental Abstractions and Algorithms in Distributed Computing

Carefully Crafted Project Involving Use, Implementation and Performance

Video Demonstrations and Explanation of Project