

# EECS 22L: Software Engineering Project in C Language

## Lecture 9

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## Lecture 9: Overview

- Discussion on Socket Communication
  - Client/server example
  - Blocking I/O, handling multiple connections
  - Clock server example

## Project 2

- Map of the City of New Irvine

The map displays a grid of streets. Vertical streets are labeled from 1st to 42nd. Horizontal streets are labeled from Antbeater Road to Z End. Key landmarks include Santa Claus Airport (SCA), University of New Irvine (UNI), Grand Park, and New Irvine Train Station. Three taxi stands (A, B, and C) are marked on the grid. A scale bar at the bottom indicates 1 mile and 4 miles. A compass rose is located in the upper right quadrant.

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## Project 2

- Overall System Specification

```

    graph TD
        Client[Client App  
Call Taxi] <--> Settings[(Settings File  
City Map)]
        Settings --> Server[Server Program  
Manage Taxis]
        Server --> Client
        Server --> ServerApp[Server App  
Taxi Cab]
        ServerApp --> Server
    
```

The diagram illustrates the system architecture. It features four main components:
 

- Client App (Call Taxi)**: Interacts with the Settings File and the Server Program.
- Settings File (City Map)**: Provides data to the Server Program.
- Server Program (Manage Taxis)**: The central processing unit, containing:
  - Graphical display of City Map
  - Customer communication interface
  - Taxi cab communication interface
  - Optimal ride scheduling
  - Optimal taxi cab routing
  - Accounting of revenue and expenses
  - Central data structures
- Server App (Taxi Cab)**: Interacts with the Server Program.

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## Project 2

- Discussion on Socket Communication
  - Simple client/server example
    - [http://www.linuxhowtos.org/C\\_C++/socket.htm](http://www.linuxhowtos.org/C_C++/socket.htm)
    - <http://www.linuxhowtos.org/data/6/client.c>
    - <http://www.linuxhowtos.org/data/6/server.c>
  - Clock Server example
    - `~eecs22/ClockServer.tar.gz`
    - `ClockClient.c`
    - `ClockServer.c`
    - `Makefile`
    - `README`
- Online demonstration!