



# CSE 199 – IRC Chat Server in Go Programming Language

## Why this project?

The goal of this project is to create a functional IRC Server using Go Programming Language (Golang). Golang is a new compiled and concurrent system programming language that is modeled off of C.

## Benefits of Golang:

- Concurrency
- Type and Memory Safe
- Automatic Garbage Collection

## Disadvantage of Golang:

- No Generics
- New, not refined
- No type inheritance
- No method overloading

## Tools

Go Programming Language  
Git and Github for version control  
Irssi – IRC Client for testing  
server connections

## Why IRC Server?

By learning Golang through implementing an IRC server, this project also teaches basic TCP/IP network protocols, iterative programming, and concurrency.

- Learn basic packet sending and receiving through TCP.
- Able to build a basic chat room, then implement features of IRC Specs
- Goroutines provide a simple way to implement concurrency with chat rooms and users

## What I've learned

- Golang is really new, and the memory model hasn't been completely defined, especially with Goroutines.
- Without Goroutines, IRC would be a lot harder to implement as parallel threads is complicated.
- Not knowing whether variables are allocated in stack or heap makes it not follow standards, but is quite interesting as it has a better memory management from the garbage collector