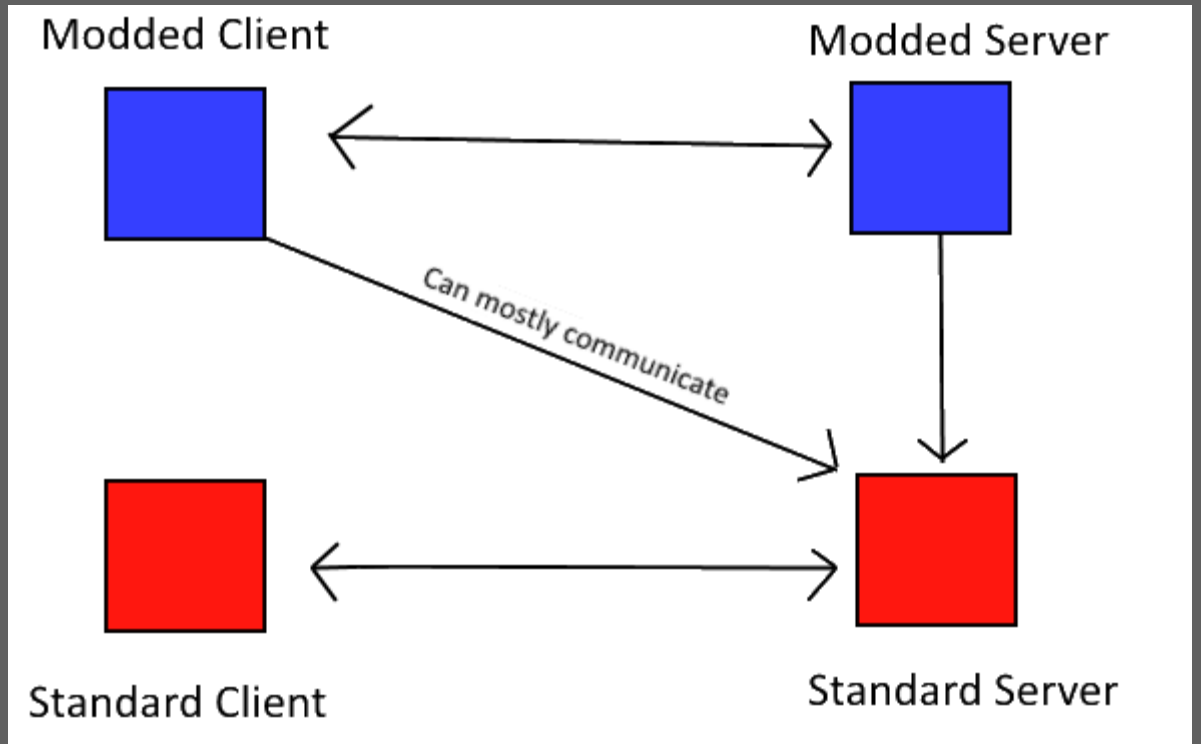# TEALS MINECRAFT PROJECT

Connor Hollasch & Steve Hollasch

# MODS

- Server modifications (plugins)
  - Used on standard client
  - Modifies current game assets
- Client modifications
  - Create or modify game assets
  - Only works on servers with the same mod

# IMPLEMENTATION

- Everything's Written in Java

- A Minecraft world is composed of *items*, *blocks*, and *entities*
  - *items* — Objects in the Minecraft world
  - *blocks* — Define the world landscape (in a 3D grid)
  - *entities* — Players, creatures and robots that move around the world

# HOW MINECRAFT WORKS – ITEMS

- Contained within the world
- Players can "carry" items
- Types include: food, weapons, armor, tools, or just default item
- Can be dropped / picked up in world
- Example items include: potato, gunpowder, gold sword, book

# HOW MINECRAFT WORKS - BLOCKS

- The world is made up of blocks
- Blocks can be broken or placed
- Some items place blocks
- Example blocks include: stone, dirt/grass, leaves, wood, grass

# HOW MINECRAFT WORKS – ENTITIES

- Entities are placed randomly around the world
- Entities have autonomous behaviors
- Can be friends, foes or neutral
- Entities include: skeleton, sheep, cow, pig, wolf

# TEALS MINECRAFT – GOALS

- Designed to build on everything your APCS students have learned to date.

- Project is hosted publicly on GitHub, so open to bug reporting, examination, contributions, and other project contributions. We can also host a public wiki for further feedback.

- Lasts 2–3 weeks. Your actual time will vary.

- 9 labs total, many more possible. Each lab has summary at the start for the APIs required for that lab, plus multiple phases of implementation for continuing feedback.

- Lectures provided in PowerPoint and PDF formats.

- Lab solutions and other instructor-only materials available to instructors in the GitHub APCSA repository (/projects/minecraft/).

# TEALS MINECRAFT — MATERIALS

This project uses the Forge modding API
- A modding package for clients
- Has the ability to mod server, but not implemented for this curriculum

Instructors/Students Distribution
- Zip file containing source code
- Designed to work on Eclipse or IntelliJ. Other IDEs possible, but that's up to additional developers/instructors/students.
- Documentation for lectures, student guides and labs

Single File Setup
- Zip file from public GitHub repo,
- or as a locally-copied file (about 180MB).

# LAB DEMO — TREE-GROWING BLOCKS

A quick demonstration of lab 5, where students create "seed" blocks that end up growing different types of trees: cube, sphere, cylinder, and cone.

# CONTACT INFO

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**Main TEALS GitHub Org**
http://tealsk12.github.io

**Teals-Minecraft Web Site**
http://tealsk12.github.io/teals-minecraft

**Teals-Minecraft Instructor Chat on Slack**
https://tealsk12.slack.com
'tealsmc' channel