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Rules

- You must have downloaded your copy from the Assistants' Intranet <<https://intra.assistants.epita.fr>>.
- This document is strictly personal and must **not** be passed on to someone else.
- Non-compliance with these rules can lead to severe sanctions.

Introduction

Basic reminders

- **Individual** project
- Java
- 44 hours

Principle

Minecraft

- 3D cubic world
- But finite dimensions

Starcraft

- Find resources
- Collect resources
- Go back to your base
- Unload resources
- Create units
- Expand

Create units that will cooperate with each other in a quest for points.

Multithreaded HTTP client

- Asynchronous Java
- REST (with Unirest)
- Json (with Jackson)

Artificial Intelligence

- 6 types of units
- 2 kinds of resources
- Collect resources and expand
- Defend

Subject

Peaceful

- Probe
- Observer

Harmful

- Dragoon
- Photon Cannon

Building

- Nexus
- Pylon

Specificity

- The only unit able to mine
- Can hold resources (in a limited amount)
- Can move

Purpose

- Mine resources
- Unload resources to nexus
- Convert blocks
- Create nexus

Specificity

- The only unit that can do large scans
- Can move

Purpose

- Scan map to list resources
- Convert blocks

Specificity

- Can fire
- Can move

Purpose

- Defend in Horde mode

Specificity

- Can fire
- Can't move

Purpose

- Defend in Horde mode

Specificity

- Can't move

Purpose

- Spawn units

Specificity

- Can't move

Purpose

- Teleport units

Composition

- Mineral cost
- Biomass cost
- Cast time

Principle

- Send a command to the server with:
 - Your login
 - An agentId
 - An action to be performed
- Wait for the server to produce a report
- Request the report from the server
- Use the information you received to decide what to do next

Principle

- Create units
- Earn resources and convert blocks
- Create more units

Options

- Easy
- Horde
- Hector

Features

- Synchronous commands
- All commands cast time is 1 tick
- Can be used for debugging
- Unlockable achievements

Features

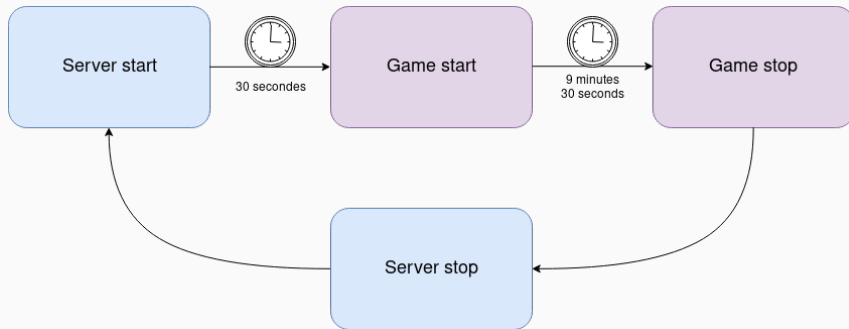
- Defend against Horde by destroying incoming horde blocks
- Cooperate with other players to survive as long as you can

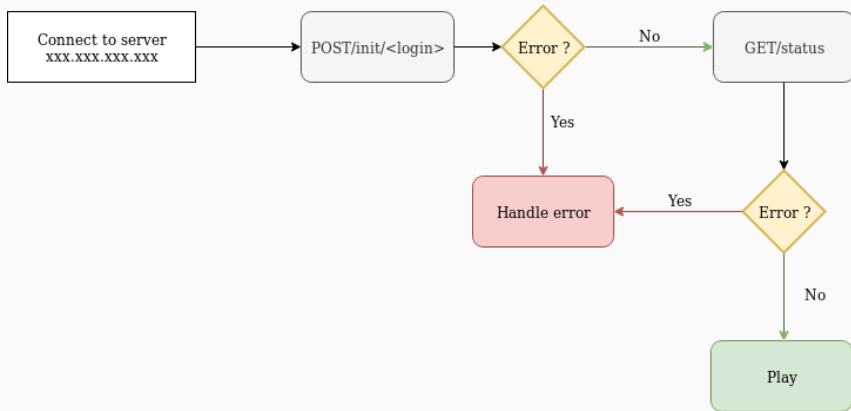
Features

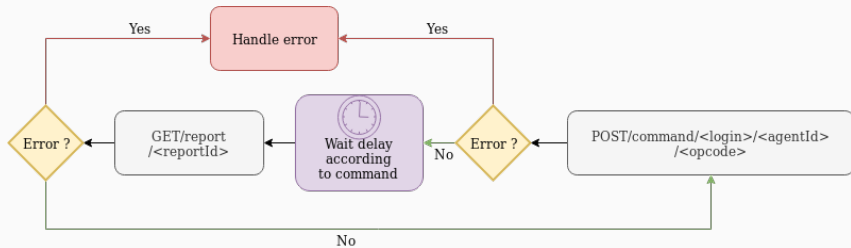
- Convert to void all player's blocks not linked to a nexus
- Kill units on blocks that are not converted by the player

When?

- Max unit number reached by a player
- Option is activated on server







Tips

Project

- Read the **whole** subject, at least 3 times
- **Think** about your architecture BEFORE coding

Rules

- DO NOT manage your threads by hand
- DO NOT use sleep

Take a look at

- CompletableFuture
- Executors
- What you saw in **tutorials**
- **Javadoc**

Local server

- Almost no delay

Remote server

- Greater delay
- Possible miss
- Add a safety margin to your reports delays

Overview

Graphic render

- Web client
- Visualize your bots' behaviour

Infos

- List of public servers
- Player stats tracking
- Play with your friends

Your grade

- Achievements unlocked
- Block expansion score
- Defense

Conclusion

Newsgroup

- Newsgroup: `assistants.projets` with [RJV]

Goal

- Use what you've learned in Java
- Create the best automaton
- Have fun

Any questions?