TEALS MINECRAFT PROJECT

Lecture 7: Pathfinding

PATHFINDING ALGORITHMS

Pathfinding algorithms automatically map out routes from one location to another, usually accounting for barriers and other obstructions along the way. They are used in pretty much every game out there where entities move around in a simulated world.

Pathfinding in Minecraft

Getting to resources or desired locations (for example, zombies and skeletons seek out dark spots).

Avoiding or fleeing other entities

Moving toward or chasing other entities

PathNavigate

Minecraft uses the `PathNavigate` class to perform pathfinding operations.

Every `EntityLiving` has a field `navigator` to access specific properties of the pathfinding object. You can get this object using `entity.getNavigator()`.

To move to an entity, the following two methods may be used:

```
public boolean tryMoveToXYZ (double x, double y, double z, double speed);
```

```
public boolean tryMoveToEntityLiving (Entity toMoveTo, double speed);
```

To clear the current path or stop the entity from pathfinding, use

```
public void clearPathEntity()
```

LAB 7: VIRUS ROBOT

In Lab 7, we will create a virus robot. The `VirusRobot` will use pathfinding to navigate to nearby target entities. Once it is close enough, it will infect them and turn them into virus robots themselves.

This lab will use a lot of new functions and classes. You will need to carefully read the notes at the beginning of the lab to find the tools you need to complete this lab.