
BaseEntityManager
- ArrayList<BaseEntity> entities;
+ BaseEntityManager(): BaseEntityManager
+ addEntity(BaseEntity entity): void
+ removeEntity(String id): void
+ getEntities(): ArrayList<BaseEntity>
+ getEntity(String id): BaseEntity
+ createSatellite(String satelliteId, String type, double height, Angle position): void
+ addSatellite(Satellite satellite): void
+ removeSatellite(String satelliteId): void
+ getSatellites(): ArrayList<Satellite>
+ getSatellite(String satelliteId): Satellite
+ getSatelliteIds(): List<String>
+ createDevice(String deviceId, String type, Angle position): void
+ addDevice(Device device): void
+ removeDevice(String deviceId): void
+ getDevices(): ArrayList<Device>
+ getDevice(String deviceId): Device
+ getDeviceIds(): List<String>
BlackoutController
- BaseEntityManager entities
+ createDevice(String, String, Angle): void
+ removeDevice(String): void
+ createSatellite(String, String, double, Angle) + void removeSatellite(String): void
+ listDeviceIds(): List<String>
+ listSatelliteIds(): List<String>
+ addFileToDevice(String, String, String): void
+ getInfo(String): EntityInfoResponse
+ simulate(): void
+ simulate(int): void
+ communicableWithRelayRecursion(List<String>, Satellite): void
+ communicableEntitiesInRange(String): List<String>
FileManager
- Map<String, File> filesMap;
+ FileManager()
+ addFile(File file): void
+ getFile(String fileName): File
+ getFiles(): Map<String, FileInfoResponse>
+ getFilesList(): ArrayList<File>
+ updateFile(String fileName, File file): File
+ removeFile(String fileName): void
+ getInProgressFiles(String direction): ArrayList<File>
+ getInProgressFileCount(String direction): int
+ getInTransientFiles(): ArrayList<File>
+ getTotalFileSize(): int
+ getNonTransientFileSize(): int
1
0..*
1
0..*
1
0..*
StandardSatellite
- private static final double SAT_LINEAR_VELOCITY = 2500;
- private static final String[] SUPPORT_DEVICE = { "HandheldDevice", "LaptopDevice"};
- private static final int MAX_FILES = 3;
- private static final int MAX_STORAGE = 80;
- private static final int MAX_RECV_BANDWIDTH = 1;
- private static final int MAX_SEND_BANDWIDTH = 1;
- private static final int MAX_COMM_RANGE = 150000;
+ StandardSatellite(String satelliteId, String type, double height, Angle position): StandardSatellite
- simulate(): void
TeleportingSatellite
- private static final double SAT_LINEAR_VELOCITY = private static final - - -
- String[] SUPPORT_DEVICE = { "HandheldDevice", "LaptopDevice", "DesktopDevice" };
- private static final int MAX_FILES = Integer.MAX_VALUE;
- private static final int MAX_STORAGE = 200;
- private static final int MAX_RECV_BANDWIDTH = 15;
- private static final int MAX_SEND_BANDWIDTH = 10;
- private static final int MAX_COMM_RANGE = 200000;
- private boolean teleported;
+ TeleportingSatellite(String satelliteId, String type, double height, Angle position): RelaySatellite
+ teleportTransfer() : void
+ getTeleported(): boolean
+ setTeleported(boolean teleported): void
+ simulate(): void
RelaySatellite
- private static final double SAT_LINEAR_VELOCITY = 1500;
- private static final String[] SUPPORT_DEVICE = {"HandheldDevice", "LaptopDevice"};
- private static final int MAX_FILES = Integer.MAX_VALUE;
- private static final int MAX_STORAGE = Integer.MAX_VALUE;
- private static final int MAX_RECV_BANDWIDTH = Integer.MAX_VALUE;
- private static final int MAX_SEND_BANDWIDTH = Integer.MAX_VALUE;
- private static final int MAX_COMM_RANGE = 300000;
+ RelaySatellite(String satelliteId, String type, double height, Angle position): RelaySatellite
+ simulate(): void
ElephantSatellite
- double SAT_LINEAR_VELOCITY = 2500
- String[] SUPPORT_DEVICE = {"Desktop", "Laptop"};
- private static final int MAX_FILES = Integer.MAX_VALUE;
- private static final int MAX_STORAGE = 90;
- private static final int MAX_RECV_BANDWIDTH = 20;
- private static final int MAX_SEND_BANDWIDTH = 20;
- private static final int MAX_RANGE = 400000;
+ ElephantSatellite(String satelliteId, String type, double height, Angle position): ElephantSatellite
+ hasStorage(int newFileSize): boolean
+ simulate(): void
+ knapSack(int totalWeight, int n, ArrayList<File> oldFiles): HashMap<String, File>
BaseEntity
- String id
- double height
- String type
- Angle position
- int maxRange
- FileManager filemanager
- int maxFiles
- int maxStorage
- int maxSendBandwidth
- int maxRecvBandwidth
+ BaseEntity(String id, String type, double height, Angle position): BaseEntity
+ getId(): String
+ getType(): String
+ getHeight(): double
+ getPosition(): Angle
+ setPosition(Angle position): void
+ setHeight(double height): void
+ setId(String id): void
+ setRange(int range): void
+ getFiles(): ArrayList<File>
+ getFileManager(): FileManager
+ remainingBandwidth(String direction): int
+ hasStorage(int newFileSize): boolean
+ simulate(): void
+ isCommunicable(BaseEntity sender): boolean
+ queueSendFile(File file, BaseEntity toId): void
+ queueReceiveFile(File file, BaseEntity fromId): void
+ isFileExist(String filename): boolean
+ removeOutOfRangeFile(Satellite satellite FileManager fm File file): void
+ normalTransferFile(entity): void
+ setMaxFiles(int maxFiles): void
+ setMaxStorage(int maxStorage): void
+ getMaxFiles(): int
+ getMaxStorage(): int
+ setMaxRecvBandwidth(int MaxRecvBandwidth): void
+ setMaxSendBandwidth(int MaxSendBandwidth): void
+ getMaxRecvBandwidth(): int
+ getMaxSendBandwidth(): int
File
- private String filename;
- private String content;
- private int completedSize;
- private String direction;
- private BaseEntity relatedBaseEntity;
- private String status;
+ File(String filename, String content, int completedSize, String direction, BaseEntity relatedBase): File
+ File(String filename, String content, int completedSize) setCompletedSize(int completedSize): File
+ getFilename(): String
+ getCompletedSize(): int
+ getDirection(): String
+ setDirection(String direction)
+ getRelatedBaseEntity(): BaseEntity
+ setRelatedBaseEntity()
+ getContent(): String
+ setContent()
+ getData(): String
+ getFileSize(): int
+ getIsFileComplete(): boolean
+ getStatus(): String
+ setStatus()
Satellite
- int direction
- int linearVelocity
- String[] supportedDevices
+ Satellite(String satelliteId, String type, double height, Angle position): Satellite
+ int getDirection()
+ void setDirection(int direction)
+ getAngularVelocity(): int
+ standardSatMovement(): void
+ supportsDevice(Device device): boolean
+ remainingBandwidth(String direction): int
+ hasStorage(int newFileSize): boolean
+ isVisible(Device device): boolean
+ isVisible(Satellite satellite): boolean
+ setLinearVelocity(double linearVelocity): void
+ getLinearVelocity(): double
+ setSupportedDevices(String[] supportedDevices): void
+ getSupportedDevice(): String[]
+ simulate(): void
+ supportSatellite(Satellite satellite): boolean
Device
+ Device(String deviceId, String type, Angle position)
+ addFile(File file): void
+ remainingBandwidth(String direction): int
+ hasStorage(int newFileSize): boolean
+ simulate(): void
+ deviceToTeleportSatTransfer(): void
HandheldDevice
- int MAX_RANGE = 50000
+ HandheldDevice(String deviceId, String type, Angle position)
LaptopDevice
- int MAX_RANGE = 100000
+ LaptopDevice(String deviceId, String type, Angle position)
DesktopDevice
- int MAX_RANGE = 200000
+ DesktopDevice(String deviceId, String type, Angle position)