Server Zappy

Usage :

- ./zappy_server -p port -x width -y height -n name1
  name2 ... -c clientsNb -f freq

Description :

The ZAPPY server is the heart of game management, orchestrating the interaction between players and the game environment.

Key functionality:

World Management:

- **Game Map:** The server generates a flat map representing the surface of Trantor, where the edges are connected (exiting on the right returns from the left, etc.).
- **Resources:** Food and mineral resources (linemate, deraumere, sibur, mendiane, phiras, thystame) are distributed and respawn every 20 time units according to defined densities.

Interaction with Players:

- **Commands:** Players interact with the server via commands such as Forward, Right, Left, Look, Inventory, Broadcast, etc. Each command has an execution time based on an adjustable time unit (f).
- **Communication:** Communication is done via TCP sockets. Clients send requests and receive responses confirming their execution.

Elevation Management:

- **Elevation Rituals:** Players must gather specific resources and cooperate with players of the same level to elevate in the hierarchy. The success of the ritual is verified at the beginning and end of the incantation.
- **Vision:** Players' vision expands with each level of elevation, allowing them to see more tiles.

Communication Protocol:

- **Client Connection:** Clients connect to the server by opening a socket and sending their team name. The server responds with information about the world's dimensions and the number of available slots.
- **Request Management:** The server handles client requests in a non-blocking manner, ensuring smooth gameplay without active waiting.

ADMIN mode:

```
WELCOME
ADMIN
/help
Available commands:
Drone ID is the ID of the drone you want to interact with, it starts at 0
        /pause
        /set_freq [freq]
        /tick [time] [unit] (unit: t, s, m, h, d)
        /levelup [drone_id]
        /leveldown [drone_id]
        /setlevel [drone_id] [level]
        /tp [drone_id] [x] [y]
        /setinventory [drone_id] [food] [linemate] [deraumere] [sibur] [mendiane] [phiras] [thystame]
        /locate [drone_id]
        /getinventory [drone_id]
        /help
```