**Ant Farm Simulation Documentation**

**Overview**

The Ant Farm Simulation is a command-line interface (CLI)-based program that simulates the operations and interactions within an ant colony. Users can perform various actions such as spawning new colonies, simulating time ticks, allocating resources, and viewing summaries of colonies.

**Features and Functionalities**

**1. Commands**

The simulation accepts the following commands:

**spawn X Y Species**

* **Purpose**: Creates a new ant colony at the specified coordinates (X, Y) with a given species name.
* **Example**: spawn 10 20 FireAnt
* **Output**: Prints a message confirming the creation of the colony.

**tick [T]**

* **Purpose**: Simulates T time ticks for the simulation. If T is omitted, simulates one tick.
* **Example**: tick 10
* **Output**: Prints a message indicating that ticks are being simulated.

**give I R A**

* **Purpose**: Allocates resources or ants to a colony identified by I.
  + R: Resource or type of ant (e.g., food, warrior).
  + A: Amount of the resource or number of ants.
* **Example**: give 1 food 50
* **Output**: Prints a message confirming the allocation.

**summary I**

* **Purpose**: Displays a summary of the colony identified by I.
* **Example**: summary 2
* **Output**: Prints the colony's summary details, such as species, number of ants, and resources.

**exit**

* **Purpose**: Ends the simulation.
* **Output**: Prints a message confirming the termination of the simulation.

**Command Flow**

1. **Initialization**:
   * The simulation begins by displaying a welcome message and listing the available commands.
2. **Input Loop**:
   * The program enters an input loop where users can type commands.
   * The program processes commands sequentially and provides corresponding outputs.
3. **Exit Condition**:
   * The loop ends when the exit command is entered.

**Sample Run**

Ant Farm Simulation started.

Available commands:

1. spawn X Y Species - Create a new colony.

2. tick [T] - Simulate T ticks.

3. give I R A - Allocate resources or ants to a colony.

4. summary I - Show colony summary.

5. exit - End the simulation.

Enter command: spawn 10 20 FireAnt

Spawning an ant farm...

Enter command: tick 5

Simulating ticks...

Enter command: give 1 food 100

Giving resources or ants...

Enter command: summary 1

Showing summary...

Enter command: exit

Exiting the simulation...

**Conclusion**

The Ant Farm Simulation provides a foundational framework for simulating ant colony operations. It serves as a starting point for further development, focusing on enhancing functionality and user experience.