

The purpose of this document is to define the file format.

There are 2 file formats:

1. Legacy, which can handle the original file format such as what is used in Assignment 4.
 - a. This format is localized to test scenario files only.
 - b. Refer to lines 1 through 7 of *General Format Definition* table.
2. Version 2, which allows the file author to pre-define parameters for the modifications.
 - a. This format is used by both test scenario files and saved simulation files.
 - b. Refer to lines 1 through 20 of *General Format Definition* table.

The reason for this approach is to maintain backwards compatibility with legacy file format.

General Format Definition

Line	Description	Valid Values
1	Width (x-axis) of the space region	Min: 1, Max: 20
2	height (y-axis) of the space region	Min: 1, Max: 15
3	# of drones	Min: 1, Max: 10
4 - # of drones	See <i>Drone Line Definition</i> table	~
5	# of suns	Min: 0, Max: 50% of space
6 - # of Suns	Location of suns, one line per sun (x, y coordinate for each sun)	x, y location in space
7	Max # of turns	Min: 1, Max: 200
8	File format version	2 (for version 2)
9	<Not implemented>	-1
10	Current turn	$\text{int} \leq \text{max \# of turns}$
11 - # of drones	Fuel amount for each drone	Min: 0
12	Charge rate	Min: 0
13	Gallons per thrust	Min: 0
14	Gallons per steer	Min: 0
15	Gallons per scan	Min: 0
16	Gallons per pass	Min: 0
17	# of explored spaces	$\text{int} \leq \text{width} * \text{height}$
18 - # of explored spaces	Location of explored spaces, one space per line (x, y coordinate for each space)	x, y location in space
19	# of known spaces	$\text{int} \leq \text{width} * \text{height}$
20 - # of known spaces	Location of known spaces, one space per line (x, y coordinate for each space)	x, y location in space

Drone Line Definition

X-Location	Y-Location	Direction	Strategy
$\text{int} \leq \text{width}$	$\text{int} \leq \text{height}$	See <i>Direction</i> below	See <i>Strategy</i> below

Direction:

Definition: which direction the drone is facing

Valid values: north, northeast, east, southeast, south, southwest, west, northwest

Strategy:

Valid values:

0 = select an action randomly

1 = leverage environment info and drone collaboration to select “best” action

2 = allow the user to select an action via the input prompt (diagnostic only!)

Example file:

Note 1: This example is of version 2, stop after maximum turns for legacy format

Note 2: Comments are not allowed in file itself, remove content to the right of //

6 //Width (x-axis) of 6 spaces

5 //Height (y-axis) of 5 spaces

1 //1 drone

3,2,north,1 //drone 0 is in x-space 3, y-space 2, direction north with strategy of 1

3 // 3 suns

4,3 // sun 0 is in x-space 4, y-space 3

0,2 // sun 1 is in x-space 0, y-space 2

1,4	// sun 2 is in x-space 1, y-space 4
100	// 100 turns maximum
2	// File format version 2
-1	// Not Used, should be -1
2	// Current turn is 2
2000	// Drone 0 has 2000 fuel
2	// Drones have a charge rate of 2
3	// Drones have a 3 gallons per thrust fuel cost
2	// Drones have a 2 gallons per turn fuel cost
1	// Drones have a 1 gallons per scan fuel cost
0	// Drones have a 0 gallons per pass fuel cost
2	// 2 spaces have been explored
2,3	// 1 st explored space is at x-space 2, y-space 3
3,2	// 2 nd explored space is at x-space 3, y-space 2
2	// 2 spaces are known i.e. visible to the drones
2,3	// 1 st known space is at x-space 2, y-space 3
3,2	// 2 nd known space is at x-space 3, y-space 2