Application Information

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Introduction

This simulator is used to simulate how different traits of animals will help them survive for longer in an environment with varying abundance of food and obstacles. The simulator can create entities with varying traits each, in a world which the user can configure for the entities to exist within.

Simulation

Toolbars

Play button

Pause button

Reset button

Simulation behaviours

Traits

The entities have multiple traits which are automatically applied when an entity is made / when a world with entities is generated

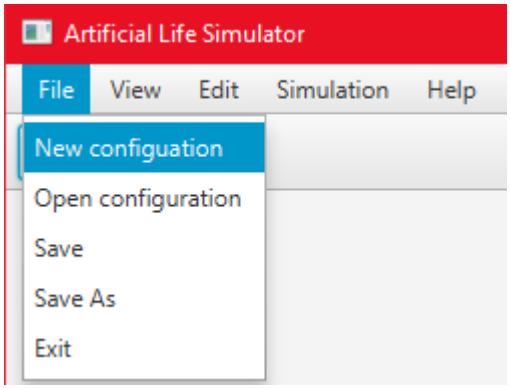
```
//values of traits
fast_walker, //+1 move
injured, //-1 move
energy_efficient, //half energy use
fatigued, //2x energy use
hunter, //2x smell range
blocked_nose, //half smell range
student, //literally has no idea what it's doing, will move randomly
agoraphobic, //will not move from where it spawned
food, //entity is food
obstacle, //entity is obstacle
food_source; //entity is a food source
```

On the left is the list of traits available to the entities.

food, obstacle and food_source traits are only available to food, obstacle and food source respectively.

Menu and Inputs

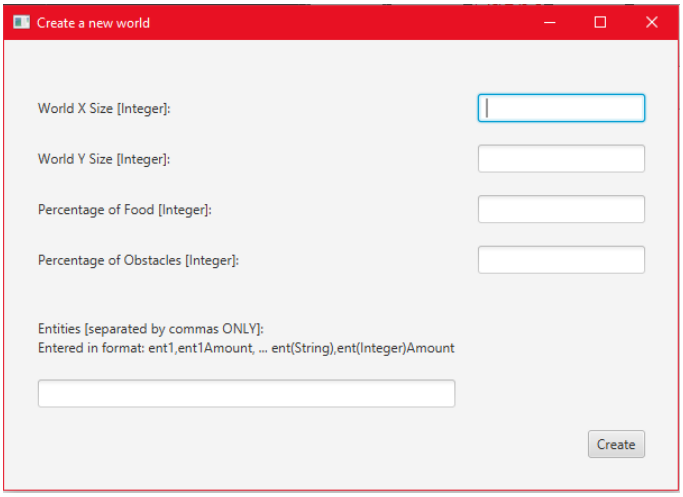
File



New Configuration

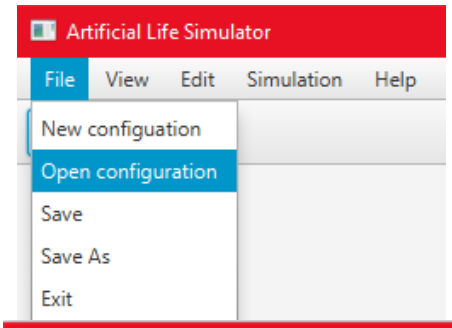
New configuration is used to create new simulation environments i.e. worlds.

It can be accessed via the “File” tab and is under “New configuration” as shown on the left.
A window will open where the world’s values can be input.



World X is the world’s height
World Y is the world’s width
Percentage of food and **obstacles** are the amount of food and obstacles (respectively) to be shown on the screen

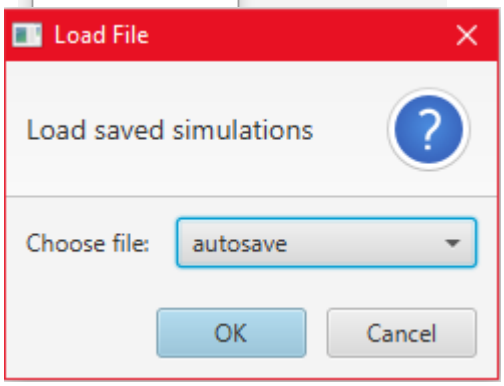
All the above needs to be numerical inputs
The bottom text field is where the entities need to be input. The order of input is: Entity, Entity amount. Each value is separated by a comma (no spaces) and multiple entities and entity amounts can be added so long as the order is entity, a comma, and then its amount.
NOTE: You can keep generating worlds with the input until you close the window.



Open Configuration

Open configuration is used to open previously saved simulations

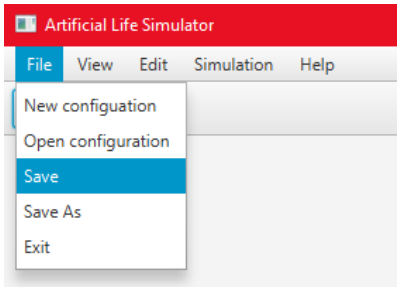
It can be accessed via the “File” tab and is under “Open configuration” as shown on the left



The following window will open when “Open configuration” is selected.

Pressing the arrow will show more files that is saved in the folder: sav

Once the file to open is chosen, press the OK button to load the file.

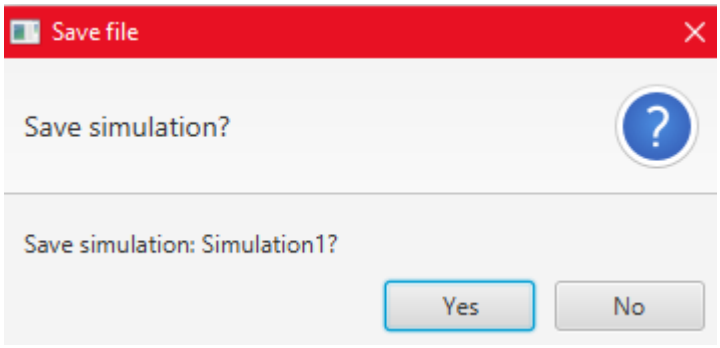


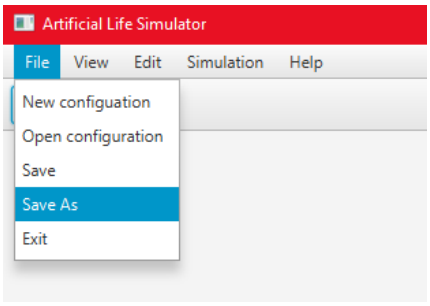
Save

Save is used to save files with a program generated name.

It can be accessed via the “File” tab and is under “Save”.

To save the simulation, press Yes, otherwise if you no longer wish to save the simulation, press No.

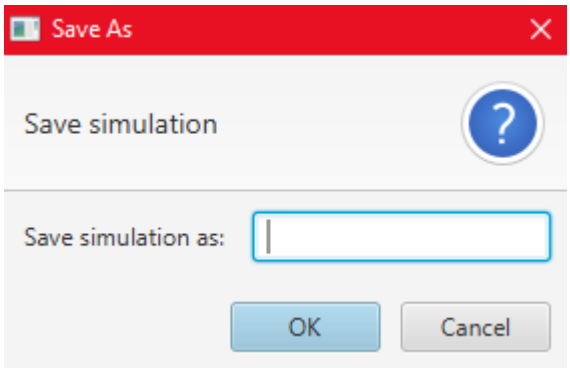




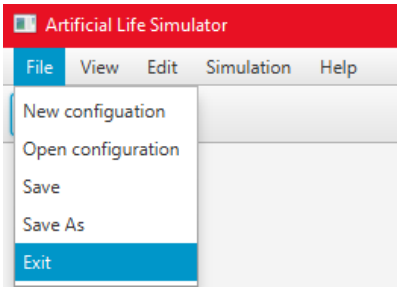
Save As

Save As is used to save a file with a name the user wants to call the simulation, instead of a program generated name.

It can be accessed via the “File” tab and is under “Save As”.



Selecting Save As will open the window on the right. Once the file name is input, press Ok to save the simulation. Otherwise, if you no longer want to save the simulation, press Cancel.



Exit

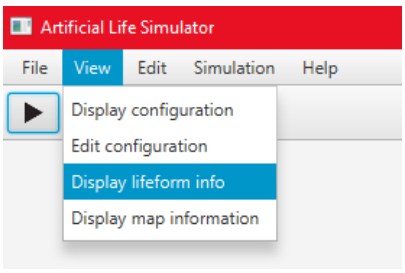
Exit will close the program and will also automatically save the program under the file name “autosave”.

This can be accessed in the “File” tab under “Exit”.
[fortunately, no referendum is required to leave the program]

View

Display configuration

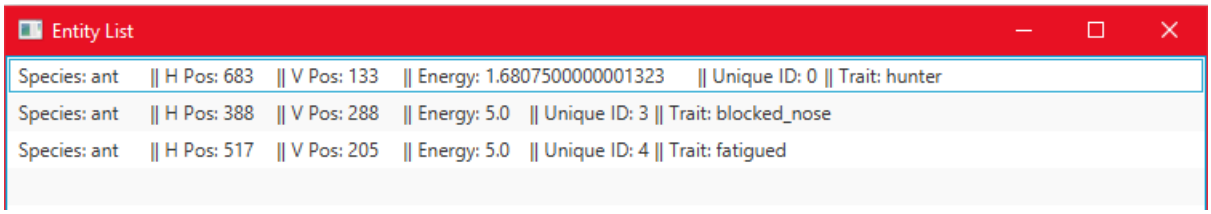
Edit configuration



Display lifeform information

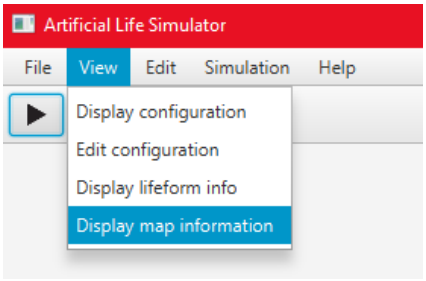
Display lifeform info is used to show the non-food and non-obstacle entities in the current simulation.

It can be accessed via the “View” tab and is under “Display lifeform info”.



A new window will show up which will list all the lifeforms as well as the lifeform's name, horizontal & vertical position, energy, unique ID and the trait associated with the lifeform.

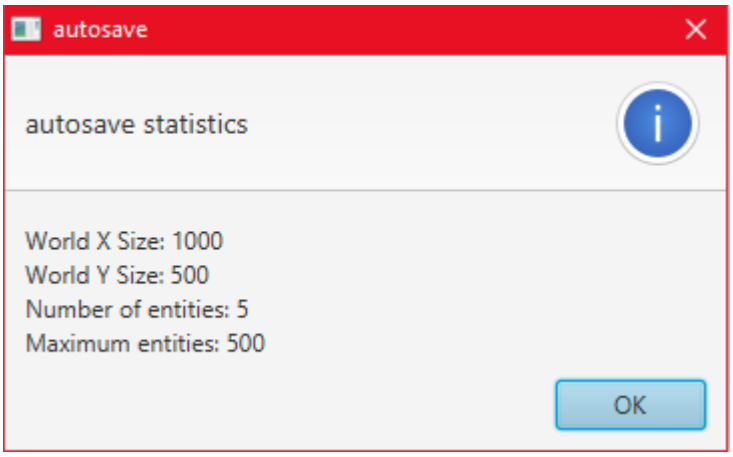
This window does not update while the simulation runs.
To close the window, press the "X" button on the top right of the window.



Display map information

Display map information is used to show the details of the current map (world that the simulation is on).

It can be accessed via the "View" tab and is under "Display map information".

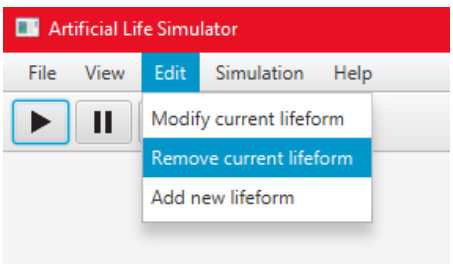


A window will popup which shows the world's information, as well as the name for the world save

NOTE: autosave will be the name shown if the file has not been saved yet, otherwise, it may be the autosave that has been loaded, even if it was saved as another file before the last session.

Edit

Modify current lifeform



Remove current lifeform

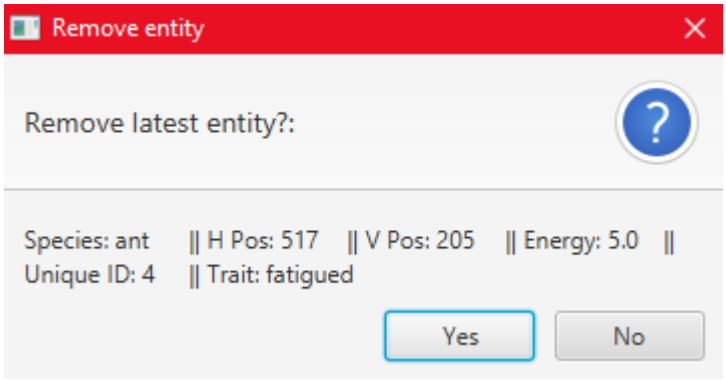
Remove current lifeform is used to remove the last entity that was added i.e. is the last entity in the entity list.

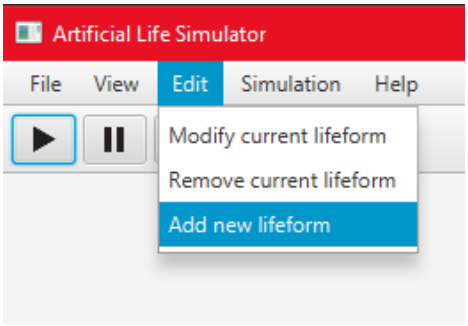
It can be accessed via the "Edit" tab under "Remove current lifeform".

The following window will open. It will show the details of the entity that is about to be deleted.

If you are sure this is the entity to be deleted, press Yes, otherwise press No.

NOTE: This action cannot be undone.

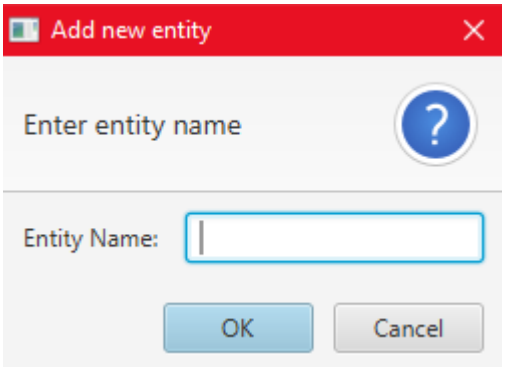




Add new lifeform

Add new lifeform is used to add more lifeforms into the simulation. However, this can also be used to add food and obstacles into the simulation by inputting “food” and “obstacle” for respective entities.

This can be found under the “Edit” tab under “Add new lifeform”.



To create a new entity, enter it’s name and then press OK.

However, to make a food entity, type “food” and then press OK.

To make another obstacle, type “obstacle” and then press OK.

To cancel creating another entity, press Cancel.

Simulation

Run

Pause

Reset

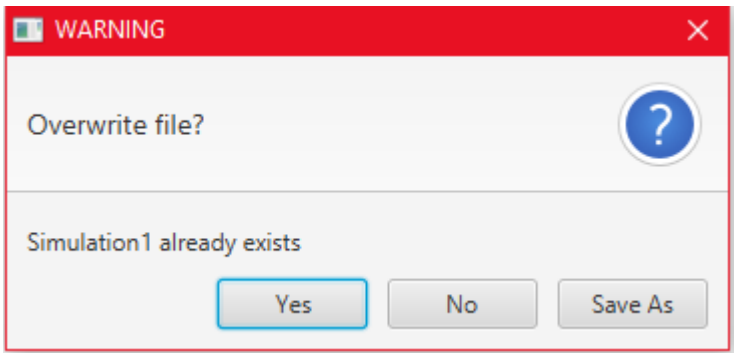
Toggle

Help

Display application information

Display author information

Errors and Troubleshooting



Save is asking to overwrite the save file
This may be caused by having a file that already has the existing generated file name. If you want to overwrite the simulation, press Yes.

Otherwise, if you still want to save the simulation, press Save As to save the simulation with another name.

If you no longer wish to save the simulation, press No.