Reder's A.I. WARS (The Insect Mind)

What is AI Wars?

AI Wars allows you to design the **Artificial Intelligence** of a insect like robotic unit. You send this unit into battle to test it's wits against other robotic units.

How To Play A.I. Wars

Creating an AI unit

Some example units are included with A.I. Wars, these units are basic and are designed to let you see how units may be programmed. The scenarios that are included will utilize these example units and give you the basic opponents to pit your home-grown units against. Once your home-grown units are developed to the point where the example units present little challenge, then you are ready to send them to your friends, BBS's, FTP and Web sites to participate in contests and tournaments. (see Tournament Mode.)

1. Click on the Program Unit AI button.
2. Enter an AI file name in the AI file to edit field.
3. Develop the Units AI using the Commands and Syntax AI Command language to design the AI . (Save your work periodically using the save button.) Note: there is a 1000 line limit on AI File length.

Example AI Code:

```
name hulkv1
author John A. Reder
debug on
level1:

begin:
math v3 = #max_life - 1
if value #cur_life = ~v3 then self destruct

if facing south then turn right
if facing east then turn left
if facing west then turn right
if x coordinate is < #enemy_x then turn right
if x coordinate is > #enemy_x then turn left

start:
if bump barrier then
        generate random
         if random is 1 then turn right
         if random is 2 then turn left
         if random is 3 then
                turn right
                move forward
          end if
         if random is 4 then
                turn left
                move forward
```

```
        end if
        move forward
end if

;quickly move to the enemy's x axis by calculating the distance
;then moving the distance.

if x coordinate is < #enemy_x then math v0 = #enemy_x - #x_pos
if x coordinate is > #enemy_x then math v0 = #x_pos - #enemy_x

long range scan
if scan found flag then if damage = 0 then goto avoid
if scan found mine then goto avoid

assign v1 0
moveloop:
move forward
if bump barrier then goto start
math v1 = ~v1 + 1
if value ~v1 <> ~v0 then goto moveloop

skipit:
if y coordinate is = #enemy_y then
       if x coordinate is > #enemy_x then
                if facing west turn left
               if facing north then turn right
                if facing south then turn left
       end if
       if x coordinate is < #enemy_x then
                if facing east turn left
               if facing north then turn left
                if facing south then turn right
       end if
       goto start3
end if

if x coordinate is = #enemy_x then
       goto start2
end if

if y coordinate is = #enemy_y then
       goto start2
end if

goto begin

start2:
if y coordinate is < #enemy_y then
       if facing west then turn left
       if facing east then turn right
end if
if y coordinate is > #enemy_y then
       if facing west then turn right
       if facing east then turn left
end if

start3:
parimeter scan
if scan found enemy then
       discharge energy
       goto start3
end if

long range scan
if scan found enemy then launch missile
goto begin

avoid:
turn left
move forward
turn right
```

```
goto skipit
```

4. Once you are done select the Save button.

Note: to edit the file after you have left the edit screen you may choose the file to edit by clicking on it's name in the file list and select the Program Unit AI button. This will autoload the AI file.

AI File Security:

If an AI file uses the password command the file will not allow you to edit it without entering the Security Password in the Security Password field.

Preparing for Battle

A battle requires the following options:

- One or more AI units in the **Units in Next Battle** List. (The shareware version only allows 5 players in a battle and the registered version allows 10.)
- A Map Selected in the **Battle Map** field.
- The **Starting Ammo** option is allows you to set the basic ammo load of the units when the battle starts. Units can gain more ammo after the game starts when they gather flags.
- The **Maximum Damage** field. (A AI unit dies when it's damage reaches the maximum damage number. 10 is the maximum for the Shareware version and 99 is the maximum for the registered version.)
- The **Starting Fuel** Field. (A unit burns fuel for movement. Damage to a unit causes the Fuel to burn faster as the fuel cells are damaged. The fuel cells cannot be repaired during battle.)
- Note: These fields can be populated automatically for you if you select a scenario from the Scenario list. You can save your entries by choosing the **Save Scenario** button. This creates a .SCN file.
- Once all Fields have the desired values select the **Start Battle Simulation** button to start the battle.

If the **Show Unit Names** check box is checked the units will have their names next to them. They will have a default name of AI# and their assigned number unless the AI file contains the name command. Following their name you will see their damage and their remaining fuel.

Example: #1 Crusher (3,1700)

Sounds

If your PC has the proper hardware and drivers you have the option of having digitized sound effects and or CD background music (using a CD of your choice). Select the **Sound Effects On** and **CD Audio** check boxes before battle begins.

During the Battle

The battle can be stopped by closing it using the **Cancel Battle** button.

End of the battle

The battle ends when all AI units run out of fuel or when all but one unit is dead or when the battle is canceled by the user.

Debugging:

You will be able to debug your AI unit by clicking on the AI file name in the battle list before starting the battle (This will place a red dot on the selected unit so you can follow it as it passes through the battle field.. When the unit fires or launches it's weapons or scans you will see the actions represented in the graphics. If you selected the **Select Unit for Debugging** check box the debug data will be displayed in battle including the current line of code being processed by the selected unit. When Debug is on, the battle will be slowed down so you have time to analyze the debug information. A special map has been created called debug.map to help you see the data better. This map will not allow units and graphics to enter the debug display area.

Registered Users will have the additional debugging commands and options:

You may place the commands **debug on** and **debug off** in your AI code. When activated this will save any code that the unit sees into an area called the **Debug Watch buffer**. The buffer will display any commands that the unit sees and its reactions to the commands including error and warning messages about possible command errors. You can view the buffer contents by viewing the **debug watch** window from the battle summary screen.

After the Battle

The Battle will display the battle statistics. They give a description of the battle settings, a play by play description of the of the battle and the unit standings and scores.

You can **Print** this or **Save** this to a file from this screen.

You can view this screen later using the **Show Battle Summary** button from the main setup screen.

Example: Battle Summary

```
Battle number:               1
Starting Ammo:               30
Maximum damage before death: 10
Starting Fuel Value:         2500
Battle Map:                  OPEN.MAP

Battle Results:
--------------------------------------------------------------------------------
1st Place      #2 slammer  Damage: 1  Fuel: 2046    Score:  5099    John A. Reder
2nd Place      #5 hulkv1   Damage: 3  Fuel: 1862    Score:  3996    John A. Reder
3rd Place      #1 drone5   Damage: 12 Fuel: 0       Score: -13      John A. Reder
4th Place      #3 tracker  Damage: 18 Fuel: 0       Score: -3419    John A. Reder
5th Place      #4 mlaunche Damage: 18 Fuel: 0       Score: -4019    John A. Reder

Battle play by play:
--------------------------------------------------------------------------------
Click: 29 #3 tracker is crushed by #1 drone5's misile direct hit doing 9 damage!
Click: 38 #4 mlauncher is crushed by #2 slammer's misile direct hit doing 9 damage!
Click: 39 #1 drone5 protected by shield is shaken by #3 tracker's misile direct hit doing 6
damage!
Click: 59 #1 drone5 protected by shield is shaken by #3 tracker's misile direct hit doing 6
damage!
Click: 60 #1 drone5 is killed! ...Memorial flag planted!
Click: 65 #3 tracker is crushed by #1 drone5's misile direct hit doing 9 damage!
Click: 65 #3 tracker is killed! ...Memorial flag planted!
Click: 218 #4 mlauncher is crushed by #5 hulkv1's misile direct hit doing 9 damage!
Click: 219 #4 mlauncher is killed! ...Memorial flag planted!
Click: 466 #2 slammer discharged energy doing 1 point of damage to itself!
Click: 466 #2 slammer zaps #5 hulkv1 with energy discharge inflicting 3 points of damage!
Click: 1086 Battle Terminated by User!

--------------------------------------------------------------------------------
End of Battle sequence
--------------------------------------------------------------------------------
```

Scoring:

Units get points for inflicting damage on other units and keeping their damage low.

The Map Editor

You can Edit Maps to be used by the Battle Simulator by selecting the **Map editor** button.

The editor has a pull down window that allows you to select the graphic that you want to add to the map. Use the mouse to place the graphics.

Note: the unit start graphic depicts where the units will start when the map is used in battle. Only the first 10 will be used. If starting positions are not created then the battle simulator will use default starting locations.

From the pull down window you can **save**, **clear the map** or **exit the editor**.

Note: Only the Registered version will allow you to save a map created by the editor.

Tournament Mode

Registered version only. This mode allows you to play all AI unit files in the games directory (up to 500 AI files) against each other. The final results will be displayed in the battle statistics screen at the end and the entire statistics readout will be saved to a file named **contest.txt** *(you have the option to rename this file in the tournament screen)***.** You could print or E-Mail this file to the authors of the AI files.

Feel free to create internet and BBS sites that have A.I. Wars file trading and tournament areas! If you hold a tournament and you want me to add a link to it from my web page just E-Mail me the URL and I will post it on my Official A.I. Wars page.

Note: An AI file doesn't have to be prepared in a registered version of A.I Wars to participate in tournaments.

Play By E-Mail , File Copy or Transfer

The tournament mode is a great way to hold contests for all of your friends AI files. You can have them give you their AI files on disk or have them E-Mail them to you. The AI files are encoded but they are pure Ascii text so you can just E-Mail the text and cut and paste it into a file with the .AI extension.

Example ASCII encoded AI file: (tracker.ai)

```
<start>
 178
 114 101 113 105 36  120 118 101 103 111 105 118 17  14  101
 121 120 108 115 118 36  78  115 108 114 36  69  50  36  86
 105 104 105 118 17  14  17  14  102 105 107 109 114 62  17
 14  109 106 36  106 101 103 109 114 107 36  119 115 121 120
 108 36  120 108 105 114 36  120 121 118 114 36  118 109 107
 108 120 17  14  109 106 36  106 101 103 109 114 107 36  105
 101 119 120 36  120 108 105 114 36  120 121 118 114 36  112
 105 106 120 17  14  109 106 36  106 101 103 109 114 107 36
 123 105 119 120 36  120 108 105 114 36  120 121 118 114 36
 118 109 107 108 120 17  14  109 106 36  124 36  103 115 115
 118 104 109 114 101 120 105 36  109 119 36  64  36  39  105
 114 105 113 125 99  124 36  120 108 105 114 36  120 121 118
 114 36  118 109 107 108 120 17  14  109 106 36  124 36  103
 115 115 118 104 109 114 101 120 105 36  109 119 36  66  36
 39  105 114 105 113 125 99  124 36  120 108 105 114 36  120
 121 118 114 36  112 105 106 120 17  14  17  14  119 120 101
 118 120 62  17  14  113 115 122 105 36  106 115 118 123 101
 118 104 17  14  109 106 36  102 121 113 116 36  102 101 118
 118 109 105 118 36  120 108 105 114 36  120 121 118 114 36
 118 109 107 108 120 17  14  109 106 36  124 36  103 115 115
 118 104 109 114 101 120 105 36  109 119 36  65  36  39  105
 114 105 113 125 99  124 36  120 108 105 114 36  107 115 120
 115 36  119 120 101 118 120 54  17  14  107 115 120 115 36
 102 105 107 109 114 17  14  17  14  119 120 101 118 120 54
 62  17  14  109 106 36  125 36  103 115 115 118 104 109 114
 101 120 105 36  109 119 36  64  36  39  105 114 105 113 125
 99  125 36  120 108 105 114 36  17  14  13  109 106 36  106
 101 103 109 114 107 36  123 105 119 120 36  120 108 105 114
 36  120 121 118 114 36  112 105 106 120 17  14  13  109 106
 36  106 101 103 109 114 107 36  105 101 119 120 36  120 108
 105 114 36  120 121 118 114 36  118 109 107 108 120 17  14
 105 114 104 36  109 106 17  14  109 106 36  125 36  103 115
 115 118 104 109 114 101 120 105 36  109 119 36  66  36  39
 105 114 105 113 125 99  125 36  120 108 105 114 36  17  14
 13  109 106 36  106 101 103 109 114 107 36  123 105 119 120
 36  120 108 105 114 36  120 121 118 114 36  118 109 107 108
 120 17  14  13  109 106 36  106 101 103 109 114 107 36  105
 101 119 120 36  120 108 105 114 36  120 121 118 114 36  112
 105 106 120 17  14  105 114 104 36  109 106 17  14  17  14
 119 120 101 118 120 55  62  17  14  112 115 114 107 36  118
 101 114 107 105 36  119 103 101 114 17  14  109 106 36  119
 103 101 114 36  106 115 121 114 104 36  105 114 105 113 125
 36  120 108 105 114 36  112 101 121 114 103 108 36  113 109
 119 119 109 112 105 17  14  107 115 120 115 36  102 105 107
 109 114 17  14  17  14  17  14  17  14  17  14  17  14  17
 14  17  14  17  14  17  14  17  14  17  14  17  14  17  14
 17  14  17  14  17  14  17  14
```

Check my web site for additional AI files that you can cut and paste for use in this game. I am encouraging players to develop swap areas and e-mail and distribute AI files freely. Any AI file that is sent to my E-mail address may be posted on my web page for other players to try. See the **How to register screen** for the WEB page address. My E-mail address will be posted on this web site.

Note: the map files, scenario and AI files are all in Ascii text formats so you can transfer them the same way as the AI files.

Credits

The entire program was developed by John A. Reder.

Please send any comments, bugs reports and suggestions to my E-mail address posted on my web page.

Registration

To learn how to register click on the How to Register button.