Document
Version 1.0

Access Battle User Guide and Documentation

Disclaimer:

Source code is available under:
https://github.com/michi84o/AccessBattle

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User Guide

Access Battle is a fan version of the game “Rai-Net Access Battlers” which was originally released by the Japanese company “5pb.”. It was also featured in the visual novel “Steins;Gate” and its anime.

Rules

The game is played on a board with 8x8 fields. Each player can perform one action per round.

Start of the Game

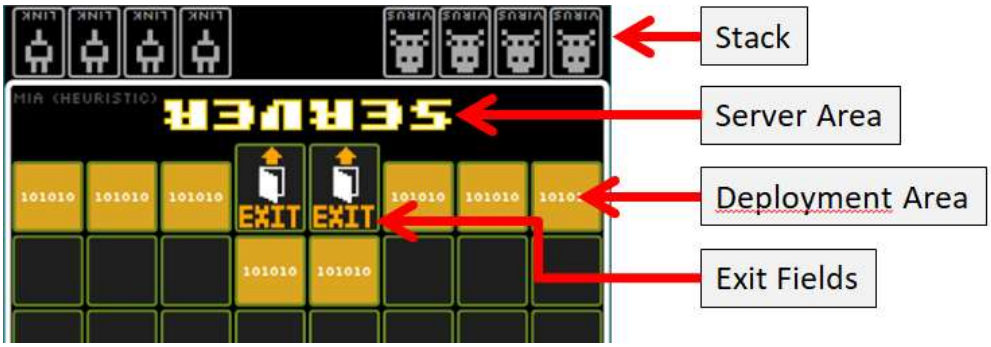
Each player gets 8 online cards, 4 virus cards and 4 link cards. The cards are placed on the starting area of each player. You can swap the positions of two cards by clicking them. When you are finished click “CONFIRM”.

Main Game

In the original rules, the players can decide who moves first. In Access Battle it is decided randomly.

When it is your turn you can choose one of the following actions:

- Move one of your online cards.
  - A card can move one field horizontally or vertically.
  - A boosted card can move two fields.
  - To move a card click on it, then click on the target field.
  - If the target field contains one of your opponent’s cards, you will capture that card. Captured cards are placed on your own “Stack”.
  - It is not possible to move onto firewall cards, your own cards, your own “Exit” fields or your own “Server Area”.
  - If you move onto your opponent’s “Server Area”, your card will be placed on your own “Stack”.



- Place or remove a “Line Boost” on an online card
  - Only one boost can be active at a time
  - To play a boost, click the “ACTIONS” button, then “LINE BOOST”, then one of your cards.
  - To remove the boost, click the “ACTIONS” button, then “LINE BOOST”.
- Place or remove a “Firewall” on an empty field

    - To place a firewall, click the “ACTIONS” button, then “FIREWALL”, then click on an empty board field.
    - To remove the firewall, click the “ACTIONS” button, then “FIREWALL”.
- Play a “Virus Check”
    - The virus check can only be played once. It reveals an opponent’s card.
    - To play a virus check, click the “ACTIONS” button, then “VIRUS CHECK”, then click an opponent’s card.
- Play a “404 Not Found”
    - This can only be used once. It allows you to switch the positions of two cards and undo a virus check.
    - To play a 404, click the “ACTIONS” button, then “404 NOT FOUND”, then two of your cards. You will then be asked if you want to switch the cards. Select “YES” or “NO”. After that any card that was face up, will be face down again.

Win Conditions

- You win if you have 4 link cards on your own “Stack”.
- You lose if you have 4 virus cards on your own “Stack”.
- It does not matter if the cards are your own or from your opponent.

User Interface

Main Menu

Use “AccessBattleWpf.exe” to start a game. The main menu lets you choose between a local game against a AI or a network game.

Local Game

When starting a local game you can select your opponent from a list of AI opponents. Currently there are only two opponents.

- Baka is very stupid and moves randomly
- Mia uses a set of rules and acts more intelligent

Select an opponent and press “PLAY” to start the game.

Network Game

For a network game you must setup a server (see below) or connect to an existing server. Enter the IP address and the port of the server in the upper area, then press “Connect to server”.

Once you have connected to a server you have to enter your user name. If the server is open to anyone, you can just enter any name and press “Login”.

If the server uses a user database, you will also have to enter a password. If you never played on that server before you need to click “New account”. If that button is not available, you need to contact ask the server administrator to add you.

If login was successful you can either create or join a game. To create a game, you need to give it a name. Enter that name to the corresponding textbox and click “Create”.

To join an existing game select it in the list and click “Join selected game”. You can also filter the list by entering a name into the search textbox below. The game is started if your opponent accepts the join request.

If you created a game you will see the “Waiting for opponent” message. You will have to wait until someone joins your game. Once someone tries to join the game you will see the “Player joining” message. Click “Accept” to start the game with that player. If you are waiting for someone else, click “Decline”.

If the server is using a user database, the user interface will show your ELO rating. ELO is a rating system that is used in Chess. If you win, your ELO rating increases, if you lose your rating will decrease. The amount of points you get depends on the ELO of your opponent. Every player starts with a ELO value of 1000.

Setting up a Server

Use “AccessBattleServer.exe” to create a server. You will be asked what kind of database you want to use. Depending on the installed plugins there might be fewer or more choices.

```
==============
Database Setup
==============
Please select an option:

        1: Accept any client (no database)
        2: Text based database
        3: Database provider for MySql and MariaDB

Enter the number of the option.
```

If you use option 1, the server will accept any client and not require a user database. This is the easiest option if you just want to play a quick game with a friend in your local network.

Option 2 uses a text file based database. You will later have to provide a file name for that database.

```
Enter a file name for a text file
db.txt
```

Option 3 is only available if you use the package with the MySQL plugin. When using this option you can create a database on a MySQL or MariaDB server. You will later have to enter the connection information for the server.

```
Enter a connection string or nothing for interactive mode.
Connection strings look like this:
Server=myServerAddress;Port=3306;Database=myDataBase;Uid=myUsername;Pwd=myPassword
```

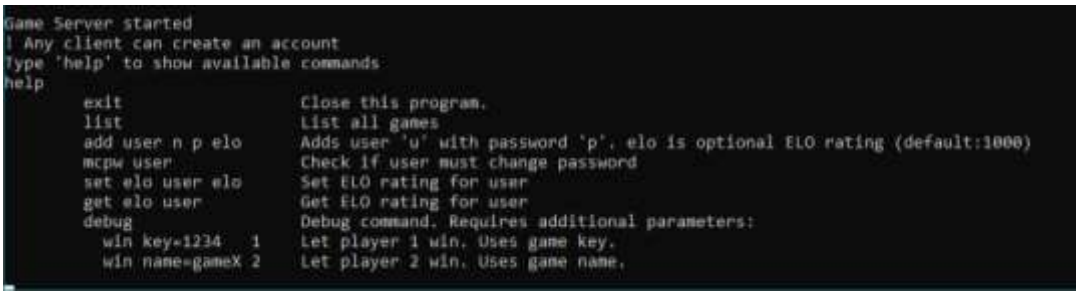
If you use a database you will be asked if users are allowed to create accounts. Only use this option in save environments or some evil people might spam your database server. If enabled, the client application will enable the “New Account” button.

```
Are users allowed to create accounts?
Please select an option:

        1: No
        2: Yes
```

If you choose no, you will have to add each user manually.

Once the server is started you can enter “help” to see all available commands.



For example if you want to add a user called “bob” using password “1234” you would type:

add user bob 123 1000

The 1000 at the end is the users ELO rating.

Program Documentation

The program contains several files.

EXE Files:

File	Description
AccessBattleWpf.exe	Main Game client. Start this if you want to play.
AccessBattleServer.exe	Server. Use this if you want to create a multiplayer server.
AccessBattleConsole.exe	Console based client for Supa Hakas. Only single player works. Not recommended for beginners.

DLL Files:

File	Description
AccessBattle.dll	Library that contains the core game logic.
AccessBattleAI.dll	Plugin file that contains AI opponents for single player.
AccessBattleMySql.dll	MySQL / Maria DB plugin for server.
MySqlConnector.dll System.Buffers.dll System.Memory.dll System.Runtime.CompilerServices.Unsafe.dll System.Threading.Tasks.Extensions.dll	MySQL / Maria DB database connector.
Newtonsoft.Json.dll	JSON library used for creating the data packets that are exchanged between client and server.

AI

The program contains 3 AI opponents, two of the are usable.

AI	Description
Baka	This AI just selects a random card and moves it towards the opponent server. The chance of picking a link is 60%.
Mia	Mia calculates all possible states for the next two moves and gives each state a score. The move with the highest score is picked.
Nou	This AI is disabled and only available in the source code. It uses a neural network that has to be trained first. The design for this network did not work very well. There is a lot of stuff left in the source code. If you enable Nou in the source code you can use the command line parameter “-AIName=Nou” in the WPF client to train Nou using data from playing the game. There is also a “NeuralNetTrainer” program that was used to train Nou against Mia. As already said this didn’t work and Nou performed worse than Baka.