

GreatEd – is a level editor for NES Super Mario Bros [™]. It's supported all locales ([E], [W], [JU]).

Supported OS: Windows XP® (x86 version),
Windows Vista®, Windows 7®, Windows 8®, Windows 10®

Minimum requirements: 512 MB RAM, 1GHz processor.

1. Overview.

GreatEd is an application for Windows® to create original levels for Super Mario Bros [™].

GreatEd and its author have nothing to do with Nintendo®, the developer of Super Mario Bros [™].

2. Files description.

- GreatEd.exe – x64 application for Windows® x64 versions of higher Windows Vista®.

- GreatEd_x86.exe – x86 application for Windows® 32-bit versions of higher Windows XP®.

- readme.pdf – this file.

3. License.

GreatEd is free software. The copyright of this software belongs to ALXR (author of “Software”). Reproduction and distribution of this software may be freely done only for non-commercial purposes, and it is strictly prohibited to bundle the game ROM file. In addition, the author is not obligated to indemnify for any damage caused by using this software.

4. Others.

Company names and product names appearing in this text are trademarks or registered trademarks of their respective owners.

5. Source code.

Source code of an editor is not currently available. All offers or questions by the editor you can send to greated@filezz.net

How to use

1. Basic operations.

- Click menu **File / Open ROM...** to open a ROM file. Can only be opened files in a .NES format of NROM (#00) mapper or MMC3 (#04) mapper. All hacks that have been done in NROM mapper also can be opened with their graphics and levels.
- Click menu **File / Save ROM** (or **Save ROM as...** to save to another file) to save ROM file. The ROM will be automatically converted to MMC3 (#04) mapper. Mapper MMC3 allows more capabilities to make new your own areas, areas items and enemies.

2. Editor basic operations.

- Objects selection. Drag mouse on editing area to select group of objects or Ctrl+A to select all objects. To select single object just click on this object.
- Clipboard. You can copy/cut and paste selected objects between the areas (but only within one instance of Editor). See menu **Edit**
- Undo. You can undo last operation by Ctrl+Z keys combination or by menu **Edit / Undo**. Each area has its own Undo buffer. Undo buffer is available only for areas objects. No Undo buffers available for Palette editor, Games settings, etc...
- Switch between levels. To switch to another area click on **View / Select level...**
- Dump / Restore areas. Click on **Tools / Load area from file** to restore previously dumped area or **Tools / Dump area into a file...** to dump currently editing area to external file.
- Create objects. Click on the editing area where you want to place new objects and press Insert key (or just click by right mouse button), select desired object and press OK in the objects dialog. It is available 128 level items and 128 enemies (sprites) objects per area.
- Modify objects. You can resize or move objects by mouse. Drag object border to resize or entire object to move. Also you can modify 'HARD' flag for enemy objects: just double-click on enemy to change this flag. 'HARD' flag means that object will appear only when game is in hard mode. Usually hard-mode switches on at level 5-3 and can be changed in the **Game Settings** dialog.
- Adding new pages to the area. Click right mouse button on editing area, and go to the **Pages / Insert new page...** New blank page will be added BEFORE current page.
- Deleting areas pages. You can only delete pages, that have no references from other areas to it by **Pages / Delete page** command from context menu. To see references go to the **Pages / References...** In a references dialog you can move pointers to neighbor pages in the currently opened area.

- Areas grounds. Areas grounds (specified by verticals bold lines. Not pages delimiters!) – is a special objects that changes area ground form, colors or area background (halls, clouds or background wall). You can add, modify or remove these objects from context menu. To move ground objects just click by left mouse button on vertical line and drag it by mouse.

3. A special area objects.

- Some objects have special parameters and so has special marks at bottom of canvas below object. Pipes and vines can act as entrances, so it can have pointers to another areas (see **Pointers**) section. To change pointer for object just click from the context menu **Change entrance pointer...** This menu item appears only on enterable items. To make usual pipe as enterable go to the **Change entrance pointer** and set pointer to another area, after this player can enter into this pipe in a game. To make usual pipe as non-enterable click **Delete all pointers** button in a pointers dialog in from a **Change entrance pointer** command. Note that some objects make pipes as enterable automatically (like Warp zone object). Also an entire area can have pointers. Usually cloud areas have its own pointers, so player can jump to the hole to go to the next area. Change this pointer from the context menu.
- Loop commands have special markers: little circle at bottom of area and running Mario figure in area canvas. See **Loop commands** section for more information.

4. Editor extra utilities.

- Palette and background colors editor. Areas, items and enemies colors can be changed in the palette editor. Select palette set and click **Modify...** button in the palette editor dialog to change colors. Some palette sets can allow to modify only first 4 colors. All other colors may be changed to **Ground** palette set. Background colors editor modifies only background colors of areas. **/!\ This changes cannot be undone by the Undo command!**
- Demo play editor allows you to modify controls of demo-play in the beginning of the game. Just select buttons controls and delay for the command to control Mario in the demo-play. You can add up to 255 commands in the editor.
- Game settings. There you can change various settings of the entire game engine.
- **Advanced / Unused areas** command show dialog with list of unused areas. These areas have no references to other areas and have no references **from** other areas. Also this areas not included in the game worlds list, so its can be safely removed from the ROM. If not appropriate areas found, warning message will appear.

- **Advanced / Areas pointers manager...** command shows dialog with all pointers in the area with references to other areas with objects which have these pointers. Select pointers by check boxes and press OK to remove these pointers from the area.
- **Edit / Create new area...** creates new area from scratch or from template of existing area. If you change your mind to create new area after creating, go to the **Advanced / Unused areas** to remove area from the game. Note that this area shall not have any pointers or any references from other areas.
- **Edit / Edit worlds configuration...** allows you to change worlds map of the game. To remove level from the world, select it and press **Delete level** button. Note that you can't delete last level from the world. At least one level must be present in the world. To insert new level into the world press **Add level...** button and select area that to be a level. If you pressed **Add level...** button when selected level then level will be added BEFORE selected. To add level to tail of the selected world this world must be selected in a worlds' tree.

5. Pointers

- Pointers are special objects that redirects player to the other area when he enter to the entrance objects (or climbing on the vine). Each pointer works only its own world. To change pointer in the world just click **Change entrance pointer...** on the pipe or vine and select target area. Pointer for this (AND ONLY FOR THIS) world will be created automatically. To manage area pointers go to the **Tools / Advanced / Areas pointers...** dialog.
- **/!\ Pointers limitations.** Pointers will work incorrectly if they are too close in the area. If next pointer is closer than 8-16 points then current pointer will be rewritten by the next and entrance will lead to the wrong way (by the next pointer). So don't place a few enterable pipes with different pointers closer than 8-16 points.

6. Loop commands.

- Loop command is a special object that can rewind page counter in the area when player does not fulfill some conditions. It's divides into the master and slaves commands.
 - Master loop command. If player goes by the wrong way (by the height) than trigger rewinds 4 pages backwards immediately.
 - Slave loop command. If player goes by the wrong way (by the height) than trigger waits for the Master loop command. When Master loop commands appears page counter will rewind 4 pages backward even if player goes by the right way of Master loop command.
- To avoid rewind glitches make sure that trigger page and backward page (with backward Mario sprite) have the identically Grounds on the pages bounds. Also long objects will disappear if head of this object on the previous page.

- Avoid loop commands overlaps. No loop commands must be placed between loop command and trigger page. If other loop commands appears while previous command waiting for the trigger, then previous command will be overwritten by the new loop command.

7. Engine limitations.

- Each area cannot have more than 128 level items and 128 enemies' objects. Besides of this target binary data length cannot be more than 256 bytes (with 2 bytes level header) for level items and 256 bytes for enemies with all pointers. So if you see error message when saving about this just reduce count of objects in the area.
- Each area cannot have more than 64 pages
- Each of area type can have up to 32 areas. So you can't change type to other if target type has already 32 areas.
- Avoid more than 3 long horizontal objects too close. If it will be then some objects will not be appeared on the game (but editor does not limit this).
- Avoid more than 4 enemies' objects too close. If it will be then some objects will not be appeared on the game (but editor does not limit this).
- Avoid pointers to place too closer (less than 8-16 points). The next pointer will overwrite previous (see **Pointers** section).
- Avoid loop commands overlaps. The next loop command will overwrite previous (see **Loop commands** section).
- Place Bowser's related castle objects (Castle Bridge, Axe and Axe's chain) only on the **EVEN** pages. On the odd pages you'll get engine glitch when its triggered.

8. Known problems.

There is a bug found in versions to 1.3.0 (including). It was fixed in version 1.3.1. You can patch ROM manually that was created with affected versions. Replace following bytes in your hex-editor:

```
0x01ff13: F7 -> FB
0x01ff7e: F7 -> FB
0x01ff83: F7 -> FB
0x01ff91: F7 -> FB
0x01ff9f: F7 -> FB
```

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