# Hacking Pokemon Red to say Hello! - Game Boy

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I created a video showing how to do a little bit of hacking/reverse programming on the Game Boy game Pokémon Red Version. This is a simple hack where we replace some text in the ROM. This video is not intended to be a tutorial, it is just me setting down and recording myself going through the process of doing this hack. I’ve never done this kind of thing before on a Game Boy ROM so in a way we are learning it together.

## The Video

[](https://www.youtube.com/embed/Vm4UpRkBD5g?feature=oembed)

## The Tools

1. Debugger - [No$GMB](https://problemkaputt.de/gmb.htm)
2. Tile editor - [Tile Designer](https://www.devrs.com/gb/hmgd/gbtd.html)
3. Text editor - [VS Code](https://code.visualstudio.com/)
4. Hex editor - [VS Code Hex Editor Plugin](https://marketplace.visualstudio.com/items?itemName=ms-vscode.hexeditor)
5. C compiler - [Clang](https://clang.llvm.org/)
6. C check sum program - [Sum C program code](https://gist.github.com/BrentFarris/28ab8529b2d2d74fcdaa56708f66e4d9)

## TLDR; Steps

1. Get your personal Pokémon Red Version Rom
2. Create a copy of it and name it original.gb in case of mistakes
3. Open the Tile editor and create 1-11 tiles of whatever you wish
4. Export all 11 tiles (even if you didn’t use 11) to a binary file
5. Copy the binary output in a hex editor
6. Open the Pokémon Red rom (not original.gb)
7. Locate address 0x000121F9
8. Overwrite the values with the values from your binary file
9. Copy [this C program code](https://gist.github.com/BrentFarris/28ab8529b2d2d74fcdaa56708f66e4d9) to a file
10. Compile the c code using Clang
11. Pass your modified Pokémon Red rom into the compiled program
12. Copy the last 4 numbers (2 bytes) of the Sum: output
13. Open the Pokémon Red rom (not original.gb)
14. Locate address 0x0000014E and 0x0000014F
15. Replace those 2 bytes with the value you copied from the output of the program
16. Save the rom
17. Play the rom again in the debugger