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I used java to create this program.

This program can compute the CRC checksum of a hexadecimal formatted file. It can also verify the result of a previous checksum calculation depending on what mode it’s in. The mode and input file are specified through command line arguments. The main functions used in this program are:

verCRC: checks to see if the checksum is correct

calcCRC: calculates the checksum for a given file

XOR: performs the XOR operation on a given block of binary

isValidInput: checks the file for invalid characters

hexToBin: takes a hex string and converts it to a binary string

binToHex: takes ab inary string and converts it to a hex string

readInputFile: takes a hex file and returns its corresponding binary string

The only erroneous behavior the program exhibits is due to the way that some text editors in linux save their files. They appear to append a newline character to the end of all files without one originally, which according to the program specifications makes the file invalid. The only way to fix it is to remove the newline character in a different editor. I used eclipse’s built in editor.

To compile the program, run these two commands from the main deliverable directory:

javac crcfile.java

jar -cvmf MANIFEST.MF crcfile.jar crcfile.class

To run the program in CRC mode, run the following command:

java -jar crcfile.jar c input.txt

To run the program in verify mode, run the following command:

java -jar crcfile.jar v verify.txt

The console output for c and v mode are located in the files inputConsoleResult.txt and verifyConsoleResult.txt respectively.

This program is my own work. I have neither developed my code together with any person, nor have I copied the program from and other person, nor permitted my code to be copied or otherwise used by and other person, nor have I copied, modified, or otherwise used program code that I have found in any external source, including, but not limited to, online sources.