Analysis of the problem

1. The program needs from the user 4 characters from the keyboard.
2. The data available is that each character will consist of 8 bits, and an unsigned int can store 4 characters within its bits, and that the 4 characters will be passed into the unsigned int with the inclusive OR operator.
3. The output requires the before and after display of the characters bit representation. This program first displays the letters and their appropriate bit representation, and the bit representation of the unsigned int before and after the characters bit representation is passed into the unsigned int.

The algorithm

The algorithm is a for loop that has two counters; one counting up, and the other down. This allows us to easily calculate the number of bits that we will shift the characters while inputting the bits into the correct order.

for (i = 3; i >= 0; i--)

{

numMask |= toShift[r] << i \* 8;

r++;

}

User Documentation.

To run the submitted project, you will first need to extract the contents of the submitted archive by right-clicking on the file, select extract all, and then select the extract button. Then you will need to open your copy of visual studio, go to file, open, and then select project/solution. Locate the folder that you just extracted, open the mod4\_1 folder and open mod4\_1.sln file. Once open go to the solution explorer, click on the triangle to the left of source files, and select mod4\_1.c. Once you see the code on the screen, hold the ctrl button down on the keyboard and press F5. This will launch the application. Follow the on screen prompts.