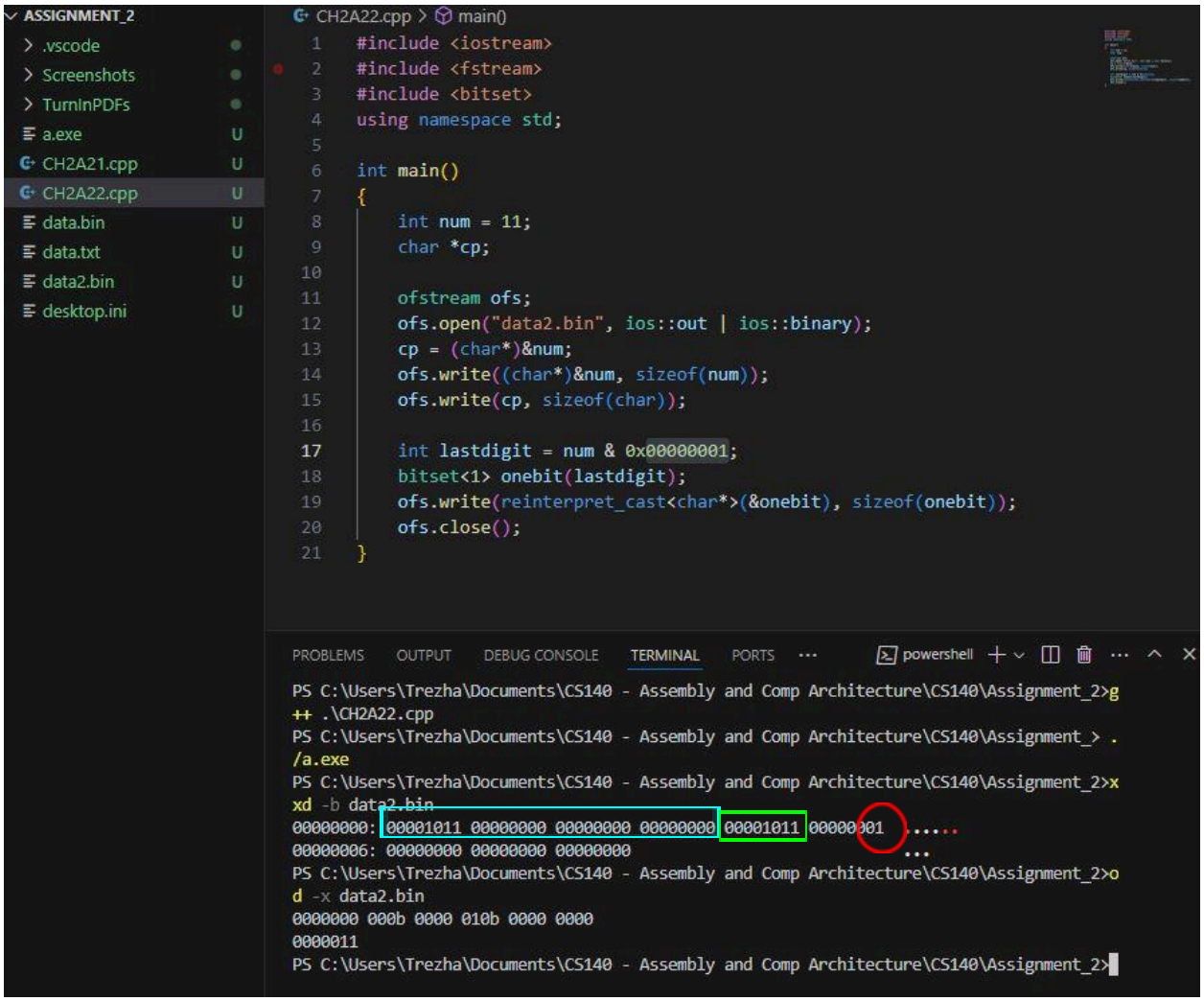
Assignment 2-2-2 The First Bit Location

First Bit Location



11 in Binary is 00001011

Note: **num** stores as **Little Endian.**

The first sequence stored in little Endian is 000b 0000
With 11(0b) being the LSB
So the BLUE square is what the binary file looks like before the code
Int lastdigit = num & 0x00000001; executes
This line **isolates the least significant bit** (the “last digit” of num), for 11 in binary.
The GREEN square highlights this isolation 00001011(0b)
Finally going further, the **least significant bit in the least significant byte, is 1.**

Therefore “last digit” is 1(00000001), which is highlighted in the RED circle.
Which is also where the first bit is located.

This is how we got the final byte sequence of
00001011 00000000 00000000 00000000 00001011 00000001

Hexadecimal

11 in hex is 0b

000b 0000

Then after the line for lastdigit executes, it saves the LSB which is 1, into the second bit, so it’s really just a representation of two things, 01 = LSB and 0b = 11

010b 0000

I assume the remaining 0s are padding, because we do see a 00000006 with 3 bytes. I tried my best to figure that part out but I have no idea. Hands up.