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CSC 408

3 September 2024

Classwork 2

**Problem 1**

flot f = 10.5; *//var declaration*

int i = \*((int\*) &f); *//it assigns the address of f to a pointer of type int\*, and then dereferences it to assign the resulting integer* i

cout << i << endl;

Solution:

* The binary representation of “10.5” as a 32-bit float is 0100 0001 0101 0000 0000 0000 0000 0000
* When this binary is reinterpreted as a 32-bit integer, it directly corresponds to the integer value: **1098907648** in decimal

This is the int value that corresponds to the raw bit value of the float “10.5” when treated as int.

**Problem 2**

Short s = 0x1012; *// this assigns the hex value to the var ‘s’*

Solution:

1. In binary 0x1012 is represented as 0001 0000 0001 0010
2. The concept of endianness refers to the order in which bytes are arranged in memory:
   1. Little Endian: the least significant byte is stored first (at the lowest memory address)
   2. Big Endian: the most significant byte is stored first (at the lowest memory address)

A screenshot of a computer program

Description automatically generated

* + - Here \*byte\_ptr is used to track the individual bytes of the short value
    - The code checks the first and second bytes to determine the byte order
    - If the first byte is 0x12, the system is Little Endian
    - If the first byte is 0x10, the system is Big Endian