- Any data can be treated as a byte array by casting it to a char
  • Casting in C is unchecked (warning!)

- Boolean Algebra \textit{1 is true, 0 is false}
  • AND (A & B) - true when both A and B are true
  • OR (A | B) - true when either A or B are true
  • XOR (A ^ B) - true when only one of A or B are true
  • NOT (\neg A) - true when A is false, and vice-versa
  • DeMorgan’s Law - \neg (A | B) = \neg A & \neg B

- Bitwise operations (& | ^ ~)
  • apply to an integer type (long, short, int, char, unsigned)
  • apply to bit 0 of both numbers, then bit 1 of both numbers, then bit 2… until all bits have been operated on

- Logical operators (&& || !)
  • Treat 0 as false, anything else as true
  • Operate on the number as a whole
  • Always return 0 or 1

- Binary numbers as as representations of set
  • if bits 0, 1, 5, 7 are all ones, the set contains \{0,1,5,7\} and does not contain \{2,3,4,6\}
  • And is intersection of sets
  • Or is a union sets
  • Xor is a symmetric difference
  • \neg is a complement