Lexicographic ordering - Alphatetic ordening for example

| binary | decimal | two's comple | ment |
|--------|---------|--------------|------|
| 6000 | 0 | 0 | |
| 0001 | t | ι | |
| 0010 | 2 | 2 | |
| 0011 | 3 | 3 | |
| 0100 | 4 | 4 | |
| 0101 | S | 5 | |
| 0110 | 6 | 6 | |
| 0111 | 7 | 7 | |
| 000 | 8 | - 8 | |
| 1001 | 9 | - 7 | |
| 000 | 10 | - 6 | |
| ιοιι | 11 | - S | |
| ()00 | lz | -4 | |
| 1101 | 13 | -3 | |
| 6111 | 14 | -2 | |
| 1111 | 15 | -1 | |

 $\frac{0111}{1000}$

Real numbers
- Infinitely many
- Unlike integers, there are infinitely many real numbers between any 2 real
numbers
- Impossible to represent all real numbers with a fixed binny storase type
even within a certain range
Floating point representation

$$n = f * 10^{\circ}$$

f is the fraction or mantissa
e is the exponent
IEEE floating point uses this sort of representation but with 2
as the base
Provides a lase range of possible values, but then are gaps (numbers we cannot
represent) which leads to rounding errors

