

## Memory Usage:

### Single Precision (float32):

- Maximum Value (before the decimal point): Approximately  $3.4 \times 10^{38}$
- Minimum Positive Value (after the decimal point): Roughly  $1.2 \times 10^{-38}$

### Double Precision (float64 or double):

- Maximum Value (before the decimal point): Approximately  $1.8 \times 10^{308}$
- Minimum Positive Value (after the decimal point): Roughly  $2.2 \times 10^{-308}$

### Extended Precision (float80 or long double, may vary by system):

- Maximum Value (before the decimal point): Varies by system but often significantly higher than double precision.
- Minimum Positive Value (after the decimal point): Varies by system but typically very small.

### Quad Precision (float128):

- Maximum Value (before the decimal point): Approximately  $1.2 \times 10^{4932}$
- Minimum Positive Value (after the decimal point): Roughly  $3.4 \times 10^{-4932}$