

# Random Numbers in Modern C++

# Random Number Example

```
mt19937 mt;                                     // Create engine instance

uniform_int_distribution<int> dist(0, 100);       // We want ints in the range 0 to 100

for (int i = 0; i < 10; ++i ) {                 // Generate 10 random numbers
    cout << dist(mt) << ", ";                  // Call the functor to get the next number
}

uniform_real_distribution<double> dist(0, 1);    // Doubles in the range 0 to 1

for (int i = 0; i < 10; ++i ) {                 // Generate 10 random numbers
    cout << dist(mt) << ", ";
}
```

## Using random\_device

```
random_device rd;                                // Random device (or maybe not!)

for (int i = 0; i < 10; ++i ) {
    cout << rd() << ", ";                        // Get next number from random device
}
```

- Because of the performance limitations, random\_device is not suitable for generating numbers in large quantities
- Instead, random\_device is often used to generate a seed

```
mt19937 mt(rd());                                // Seed engine with number from random device
```