How fast are the two RNG?

Running codes are below:

Pseudo:

#include<iostream>

#include<chrono>

using namespace std;

int main()

{

int seed = chrono::system\_clock::now().time\_since\_epoch().count();

int output = 0;

srand(seed);

for (int c = 0; c <= 1; c++)

{

//will output from 1 to 6;

output = rand() % 6 + 1;

cout << output;

}

}

//int seed = value of the epoch unix time including nanoseconds; better than time null.

Uniform:

#include<iostream>

#include<random>

#include<chrono>

using namespace std;

int main()

{

int seed = chrono::system\_clock::now().time\_since\_epoch().count();

int output=0;

default\_random\_engine gen(seed);

//will output from 1 to 6

uniform\_int\_distribution<>distribution(1, 6);

for (int c = 0; c < 1; c++)

{

output = distribution(gen);

cout << output;

}

}

//int seed = value of the epoch unix time including nanoseconds; better than time null

//default\_random\_engine = holds the value of the seed as the seed for distribution

We conducted this test in a processor with at least 2.67ghz and 8gb Ram. Dev c++ is the used for running the code.

Average is calculated with the sum of runs time divide by how many the runs are (Run Time 1+Run Time 2/Overall Runs). For overall average time we take all the average time and calculate its average (Average Time 1+Average Time 2/All Average).

a = Average a = (r[i]+r[i])/i

r[i] = Run Time ta = (a[i]+a[i])/a

i = Runs

ta = Overall Average Time

Pseudo

Looping once:

1st run Time:1.02s

2nd run Time:1.03s

3rd run Time:1.02s

Average Time:1.023s

Looping ten times:

1st run Time:1.05s

2nd run Time:1.03s

3rd run Time:1.05s

Average Time:1.043s

Looping hundred times:

1st run Time:1.05s

2nd run Time:1.02s

3rd run Time:1.00s

Average Time:1.023s

Looping thousand times:

1st run Time:1.02s

2nd run Time:1.06s

3rd run Time:1.02s

Average Time:1.037s

Overall Average Time:1.0315s

Uniform

Looping once:

1st run Time:1.56s

2nd run Time:1.59s

3rd run Time:1.56s

Average Time:1.57s

Looping ten times:

1st run Time:1.52s

2nd run Time:1.53s

3rd run Time:1.52s

Average Time:1.523s

Looping hundred times:

1st run Time:1.53s

2nd run Time:1.53s

3rd run Time:1.52s

Average Time:1.526s

Looping thousand times:

1st run Time:1.58s

2nd run Time:1.50s

3rd run Time:1.50s

Average Time:1.526s

Overall Average Time:1.5362s

Difference Time: 0.5047s

There is really no difference when initializing the looping. But these two RNG has a small difference when it comes to compilation time about half a second. This only proves that Pseudo Random is faster than Uniform Distribution.