Number of rows:10

Exponent: 1000

```
wirelessprv-10-195-89-119:IE531PM3 apple$ ./a.out 10 1000
The number of rows/column in the square matrix is: 10
The exponent is: 1000
Repeated Squaring Result:
It took 1.25e-06 seconds to complete.
Direct Squaring Result:
It took 0.00189 seconds to complete.
```

Number of rows:100

Exponent: 1000

```
wirelessprv-10-195-89-119:IE531PM3 apple$ ./a.out 100 1000
The number of rows/column in the square matrix is: 100
The exponent is: 1000
Repeated Squaring Result:
It took 9.47333e-05 seconds to complete.
Direct Squaring Result:
It took 0.330863 seconds to complete.
```

Number of rows:1000

Exponent: 1000

```
[wirelessprv-10-195-89-119:IE531PM3 apple$ ./a.out 1000 1000
The number of rows/column in the square matrix is: 1000
The exponent is: 1000
Repeated Squaring Result:
It took 0.149285 seconds to complete.
Direct Squaring Result:
It took 682.081 seconds to complete.
```

It can tell from the result that as the exponent increases, the difference between the repeated squaring and direct squaring increases. When the number of rows is 1000 and exponent is 1000, repeated squaring only need 0.149285 seconds to complete the work which is much more efficient than the direct squaring method.

Computation time vs. Exponent Plot

A comparison of the computation-time (obtained experimentally) for brute-force exponentiation and the method of repeated squares of a random 5×5 matrix as a function of the exponent.
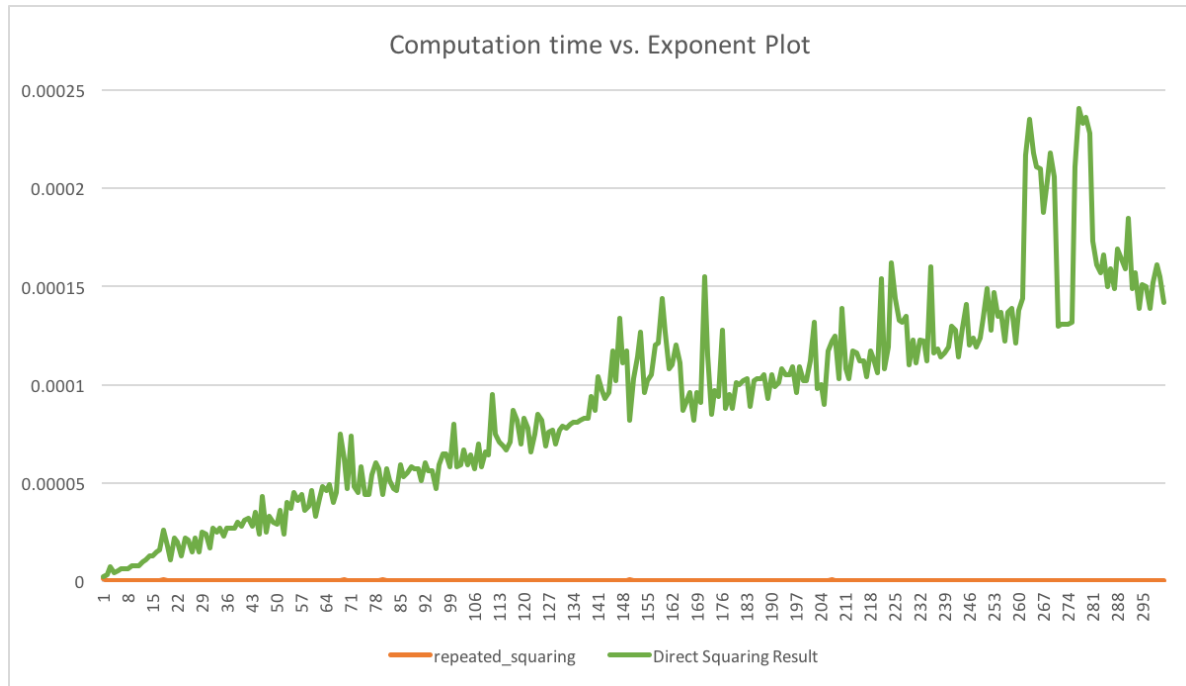
According to the graph, repeated squaring algorithm always performs better than the other, as far as computation time is concerned.