Practical – 7

**Aim:** Implement a menu driven program to generate random numbers using: a) Nominal distribution b) Exponential distribution.

**Program:**

#include <bits/stdc++.h>

using namespace std;

void normal()

{

int i, j, m, nn;

float t, sum, x, mue, sigma;

cout << "Enter the value of mue - ";

cin >> mue;

cout << "Enter the value of sigma - ";

cin >> sigma;

cout << "Number of random variables needed - ";

cin >> nn;

for (m = 1; m <= nn; m++)

{

sum = 0;

for (i = 1; i <= 12; i++)

{

x = float(rand()) / float(RAND\_MAX);

sum = sum + x;

}

t = mue + sigma \* (sum - 6.);

cout << t << " ";

}

}

void expo()

{

int i, j, k, m, nn;

double lambda;

cout << " Enter the value of Lambda ";

cin >> lambda;

cout << "Number of random variables needed - ";

cin >> nn;

for (m = 1; m <= nn; m++)

{

double u = float(rand()) / float(RAND\_MAX);

double x = log(1 - u) / (-lambda);

cout << x << " ";

}

}

int main()

{

int c;

while (true)

{

cout << "Press 1 for Normal Distribution " << endl;

cout << "Press 2 for Exponential Distribution " << endl;

cin >> c;

if (c == 1)

normal();

else

expo();

cout << endl;

}

return 0;

}

**Output:**

