**Random Numbers**

**To generate a random number, you can use the function rand of the header file cstdlib. For example, the expression rand() returns an int value between 0 and 32767. Therefore, the statement:**

**cout << rand() << ", " << rand() << endl;**

**will output two numbers that appear to be random.**

**However, each time the program is run, this statement will output the same random numbers. This is because the function rand uses an algorithm that produces the same sequence of random numbers each time the program is executed on the same system. To generate different random numbers each time the program is executed, you also use the function srand of the header file cstdlib. The function srand takes as input an unsigned int, which acts as the seed for the algorithm. By specifying different seed values, each time the program is executed, the function rand will generate a different sequence of random numbers.**

**srand(3);**

**num = rand() % 6;**

**The first statement sets the seed, and the second statement generates a random number greater than or equal to 0 and less than 6.**

**To specify a different seed, you can use the function time of the header file ctime, which returns the number of seconds elapsed since January 1, 1970. For example, consider the following statements:**

**srand(time(0));**

**num = rand() % 100;**

**The first statement sets the seed, and the second statement generates a random number**

**greater than or equal to 0 and less than 100. Note how the function time is used. It is**

**used with an argument, that is, parameter, which is 0.**

**To generate a random number for an interval (Min –Max)**

**min + (rand() % (max - min + 1))**

#include <iostream>

#include <cstdlib>

#include <ctime>

using namespace std;

int main()

{

srand(time(0));

int i = 0;

while(i++ < 10) {

int r = (rand() % 100) + 1;

cout << r << " ";

}

return 0;

}

If we run the code several times, we get different number sequences.

1st run:

8 5 1 35 88 68 20 86 48 29

next run:

13 6 98 29 74 51 14 49 31 99