

RandomGenerator

```
import acm.program.*;
import acm.util.*;

public class RollDice extends ConsoleProgram {

    public void run() {
        // Will fill in shortly
    }

    /* Private instance variable */
    private RandomGenerator rgen =
        RandomGenerator.getInstance();
}
```

Methods to Generate Random Values

The `RandomGenerator` class defines the following methods:

```
int nextInt(int low, int high)
```

Returns a random `int` between `low` and `high`, inclusive.

```
int nextInt(int n)
```

Returns a random `int` between 0 and `n - 1`.

```
double nextDouble(double low, double high)
```

Returns a random `double` d in the range $\text{low} \leq d < \text{high}$.

```
double nextDouble()
```

Returns a random `double` d in the range $0 \leq d < 1$.

```
boolean nextBoolean()
```

Returns a random `boolean` value, which is `true` 50 percent of the time.

```
boolean nextBoolean(double p)
```

Returns a random `boolean`, which is `true` with probability `p`, where $0 \leq p \leq 1$.

```
Color nextColor()
```

Returns a random color.

Simple Random Example

```
import acm.program.*;
import acm.util.*;

public class RollDice extends ConsoleProgram {

    /* Constant -- Number of sides on each die */
    private static final int NUM_SIDES = 6;

    public void run() {
        int numRolls = readInt("Number of rolls: ");
        for (int i = 0; i < numRolls; i++) {
            int roll = rgen.nextInt(1, NUM_SIDES);
            println("You rolled: " + roll);
        }
    }

    /* Private instance variable */
    private RandomGenerator rgen =
        RandomGenerator.getInstance();
}
```