

Random Numbers

By Dr. David J. Ritchie,
Computer Club Advisor

Games often use random numbers. Perl's `rand()` subroutine returns a random number between 0 and 1.

Try it:

1. Write this program:

```
print rand( );
```
2. Run it again and again...

Question:

Are the numbers random?

How do you know?

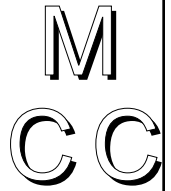
Hint: the

average of the random numbers between 0 and 1 should be 0.5. Can you check this?

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Madison Computer Club News



Mrs. Gilmore

Dr. David J. Ritchie

Students begin their Adventure!

Students will continue to extend their adventures today...

Members of the Madison Junior High Computer Club began their adventure stories in the previous session. Story subjects ranged from teletubbies to "Bill Gates vs. Apple."

This week's efforts include extending the programs. As the adventure stories become complicated, students may be forced to make story maps to keep track of the twists and turns of their story.

There are many Perl library subroutines which may be useful in extending the story. One is the random number subroutine described in the sidebar.

WANTED

Be on the look out for
this random number

0.377471923828125

Suspected of playing
too many games

\$ REWARD \$

Another is the `int()` subroutine which gives you the integer part of a number.
Example: `$num = int($value);`

A third one is the modulus operation `%`. This gives you the remainder when one number is divided by another.
Example: `$rem = $num % 3;`

Writing Programs which use random numbers...

This $\$n = \text{rand}()$ statement gives $\$n$ a random value between 0 and 1. E.g.: 0.377471923828125.

Compute: $\$eo = \$n \% 2$;
E.g., 1.

A Temperature Program...

```
# get fahrenheit temp
print "Enter Fahrenheit Temp: ";
$F = <STDIN>;
# take off last new line char
chomp ($F);
# compute result and print
$C = ($F - 32) * 5/9;
print "Celsius Temp: $C\n";
```

That means $\$eo$ is 0 for an even number and 1 for an odd number.

Now, you can "flip a coin".

In the subroutine below, the player goes to page 8 for an even number and page 9 for an

What if you want a number n between 0 and 10? What then?

Compute: $\$r = 10 * \text{rand}()$;
E.g.: 3.77471923828125

What if you want the whole number part of this result?

Compute: $\$n = \text{int}(\$r)$;
E.g., 3.

What if you want to know whether the number is even or odd?

odd number.

```
sub Page7 {
    print <<END;
    You flip a coin. If it's heads,
    you'll go left. If it's tails,
    you'll go right.
    END
    $ht = int( 2 * rand() ) % 2;
    if ($ht == 0) {
        $Choice = 8;
        print "Heads. You go left\n";
    }
    if ($ht == 1) {
        $Choice = 9;
        print "Tails. You go right\n";
    }
    return ($Choice);
}
```