# Reading 08: Document Tools

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## Overview

For this experiment, I created **three** scripts:

1. `roll_dice.sh`: This script simulates rolling a dice.
2. `experiment.sh`: This script uses `roll_dice.sh` to perform an experiment and then collect that data into `results.dat`.
3. `histogram.plt`: This script uses gnuplot to create a graph of the data in `results.dat`.

## Rolling Dice

First, I created a script called `roll_dice.sh` that uses the shuf command to simulate rolling a die with a certain number of *sides* for a specified amount of *rolls*.

```
$ ./roll_dice.sh -h
usage: roll_dice.sh [-r ROLLS -s sides]

-r ROLLS        Number of rolls of die (default: 10)
-s SIDES        Number of sides on die (default: 6)
```

## Experiment

Second, I created a script called `experiment.sh` that uses `roll_dice.sh` to simulate rolling a **six**-sided die 1000 times. My script uses `awk` to collect the results into a single file called `results.txt`.

## Results

Table 1 contains the results of my experiment of rolling a dice 1000 times:

| Side | Counts |
|---|---|
| 1 | 177 |
| 2 | 153 |
| 3 | 182 |
| 4 | 170 |
| 5 | 154 |
| 6 | 164 |

Table 1: Dice Rolling Results

Figure 1 contains a plot of my experimental results as produced by `histogram.plt`:

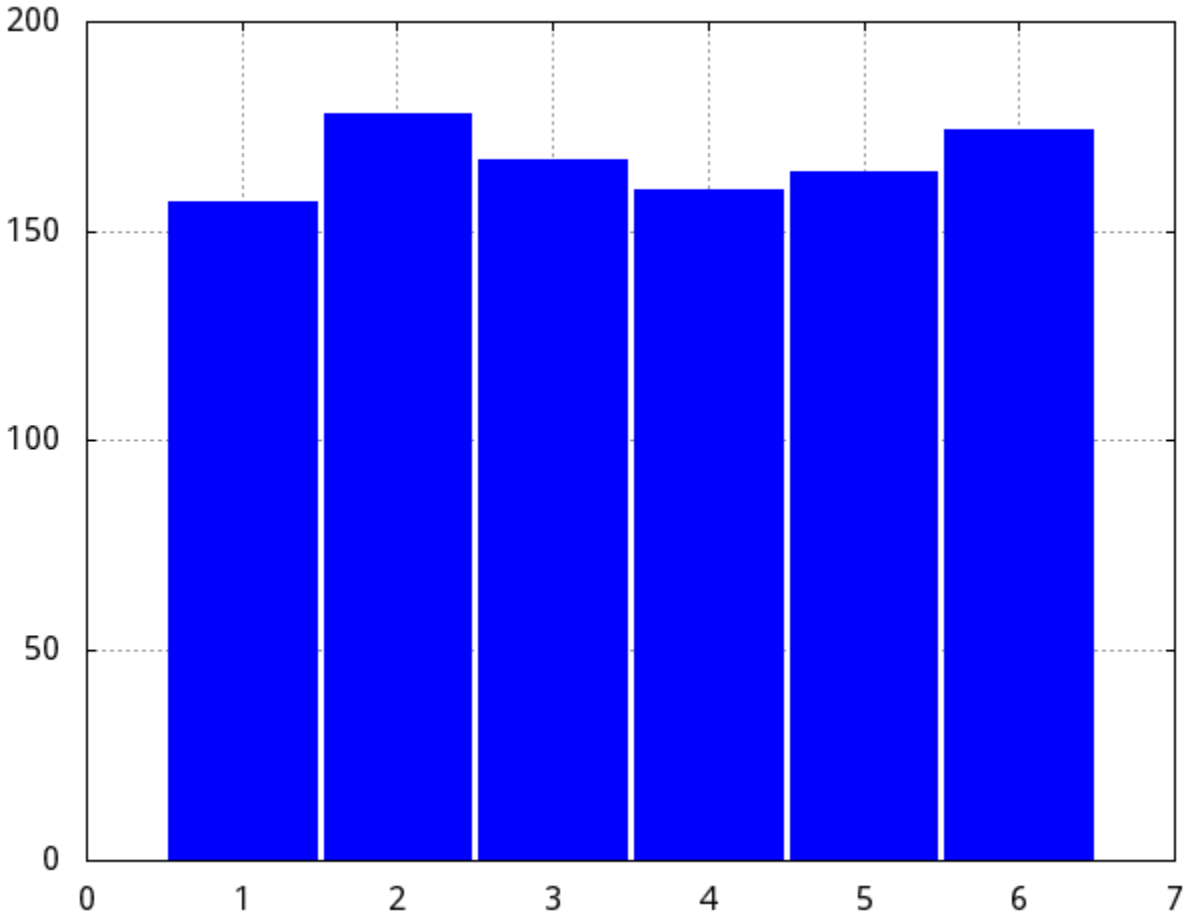


Figure 1: Dice Rolling Results