**Submit the following entries in a word file:**

**Problem Statement:**

**Problem Statement:** How to simulate an n-sided coin using a 2 sided coin. (Solve for n=6).

**Algorithm:**

**Solution:** You can simulate an n-sided coin using a two sided coin as follows:

Let m = . The base is always 2. (Example, for n = 6, m = 3)

Flip a 2-sided coin m times and record the result of every flip. (HHT may be represented as 110)

Convert the binary number generated to a decimal number. (Example: (110)2 = (6)10 )

Repeat for the number of sample points required.

**Challenge:**

If m =3, the numbers generated will be in the range 0 to 7, whereas we need the numbers in the range (1, 6).

**A possible Solution-**

* When you get a number not in range, ignore it and regenerate another number in range.   
  In this example – When you generate a 0 or a 7, ignore it and generate another number till you get a number in the range and record that.

**Note:** When n = 6, we can simulate a dice using a 2-sided coin.

**C Code**

**Result Table**

Sample space is the following: {1, 2, 3, 4, 5, 6}

Find the probability of each event, while generating 1000 samples points.

|  |  |
| --- | --- |
| Event | Probability of event |
| 1 | 0.167 |
| 2 | 0.172 |
| 3 | 0.160 |
| 4 | 0.177 |
| 5 | 0.151 |
| 6 | 0.173 |

**Analysis**

Did the result meet the expectation?

Yes,

If no, can you think of an improvement?