Topics: Simulation, applying 1-d array and random numbers

Reading: -

Simulation

Simulation is the application of mathematical and computer models for imitating the behavior of a system. Simulation is a useful tool for design, training, and games!

Simple dice simulation

Simulate the rolling of a *fair* die. Class Dice below represents a single die. Write a method to simulate the rolling of a die to measure the frequencies of the outcomes.

What are the possible outcomes?
The frequency of an outcome is the number of times that the outcome occurs.
Be careful about using the random number generator for generating integers *with equal probability*.

```java
/** A six-sided dice */
class Dice {

    public static final int SIDES= 6; //no. of sides on a dice
    private int face; //Face that is shown currently

    /** Constructor: Dice's face has a random value in 1..SIDES */
    public Dice() { roll(); }

    /** face gets a random value in 1..SIDES */
    public void roll() {
        face= (int) (Math.random()*SIDES+1);
    }

    /** = Get face currently shown */
    public int getFace() { return face; }
}
```