

## CS100M Section Exercise 11

Complete class `Dice` below according to the specifications (comments). Use good programming style—always use available methods instead of repeating code unnecessarily. You may find it helpful to complete the simple getters and setters and the `randInt` method first.

```
/** A Dice (or Die) */
class Dice {

    private int top;    // top face
    private int sides; // number of sides

    /** A Dice has numSides sides and the top face is random */
    public Dice(int numSides) {

    }

    /** A 6-sided Dice. The top face is random */
    public Dice() {

    }

    /** top gets a random value in 1..sides */
    public void roll() {

    }

    /** = random int in low..high */
    public static int randInt(int low, int high) {

    }

    /** Set top to faceValue */
    public void setTop(int faceValue) {

    }

    /** = Get top face */
    public int getTop() {

    }

}
```

```

    /** = Get number of sides */
    public int getSides() {

    }

    /** = String description of this Dice */
    public String toString() {

    }
} //class Dice

```

Did you notice the *overloaded* constructors? The method name is the same but the method *signatures* are different for the two constructors. Did you notice that the `randInt` method is `static`? The `randInt` method does not need to access any field values in `Dice` objects, so the method does not need to be *in* the `Dice` objects. Therefore, the `randInt` method is `static`—there is only one copy of this method in the class, outside of any object.

Now write code in the `main` method below to estimate the expected difference between the top faces of a 6-sided die and a 15-sided die. To make such an estimate, one can roll the pair of dice 10000 times (or more), calculating the difference between the top faces each time and at the end taking the average. *Do not use arrays.*

```

public class Section11 {
    // Estimate the expected difference between the top faces of
    // a 6-sided die and a 15-sided die
    public static void main(String[] args) {

    }
}

```

Use the rest of the time in section to work on Project 5. Ask questions!