

# CS161: In-Class Worksheet

## String, Scanner, and Random

This worksheet gives you more practice creating and using objects of type `String`, `Scanner`, and `Random`.

### Programming Exercises

1. Create a Java class called `RandomNumbers`. Inside the `main` method, write Java code to perform the following actions:
  - (a) Generate a random integer between 0 and 5
  - (b) Generate a random integer between 1 and 52
  - (c) Generate a random integer between 20 and 34
  - (d) Generate a random integer between -365 and 365
  - (e) Generate a random 7-digit positive number (using only one line of code)

2. Consider the following English description of how to turn a 10-digit string of numbers into a readable, well-formatted phone number:

Take the substring consisting of the first three characters and surround it with parentheses. This is the area code. Concatenate the area code, the substring consisting of the next three characters, a hyphen, and the substring consisting of the last four characters. This is the final formatted phone number.

Write a class `PhoneFormatter` that reads in a string of 10-digits and uses this algorithm to turn it into a well-formatted phone number.

3. Create a Java class called `EmailFinder`. Inside the `main` method, write a program that reads in a line of text containing an email address, extracts just the email address, and prints it to the screen. For example,

```
Enter text: Contact us at support@business.org for more information
Found Email: support@business.org
```

Lookup the methods `indexOf()` and `lastIndexOf()` in the Java API. These may be useful.