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CS 106A – Summer 2016

Solutions for Section #4

1. Adding commas to numeric strings

```
1    public String addCommas(String digits) {
2        String result = "";
3        int len = digits.length();
4        int nDigits = 0;
5        for (int i = len - 1; i >= 0; i--) {
6            result = digits.charAt(i) + result;
7            nDigits++;
8            if (((nDigits % 3) == 0) && (i > 0)) {
9                result = "," + result;
10           }
11       }
12       return result;
13   }
```

2. Removing characters

```
1    public String removeAll(String str, char ch) {
2        String result = "";
3        for (int i = 0; i < str.length(); i++) {
4            if (str.charAt(i) != ch) {
5                result += str.charAt(i);
6            }
7        }
8        return result;
9    }
```

Here is an alternate solution that uses a `while` loop instead of a `for` loop

```
1    public String removeAll(String str, char ch) {
2        while (true) {
3            int pos = str.indexOf(ch);
4            if (pos >= 0) {
5                str = str.substring(0, pos) + str.substring(pos + 1);
6            } else {
7                break;
8            }
9        }
10       return str;
11   }
```

3. AlT cApS

```
1    public String convertToAltCaps(String str) {
2        String result = "";
3        int counter = 0;
4        for(int i = 0; i < str.length(); i++) {
5            if (Character.isLetter(str.charAt(i))) {
6                counter++;
7            }
8
9            if ((counter % 2) == 0) {
10               result += Character.toUpperCase(str.charAt(i));
11           } else{
12               result += Character.toLowerCase(str.charAt(i));
13           }
14       }
15       return result;
16   }
```

4. Boy/Girl

```
1    public void boyGirl(BufferedReader input) {
2        int boys = 0;
3        int girls = 0;
4        int people = 0;
5        int boySum = 0;
6        int girlSum = 0;
7
8        while (true) {
9            String line = input.readLine();    // throw away name
10           if (line == null) break;           // reached end of file
11           int indexOfSpace = line.indexOf(' ');
12           int age = Integer.parseInt(line.substring(indexOfSpace + 1));
13           people++;
14           if (people % 2 == 1) {
15               boys++;
16               boySum += age;
17           } else {
18               girls++;
19               girlSum += age;
20           }
21       }
22       int diff = Math.abs(boySum - girlSum);
23       println(boys + " boys, " + girls + " girls");
24       println("Difference between boys' and girls' sums: " + diff);
25   }
```