Chapter 7: Programming

7.21 Method

```
6     public static int Ackerman(int m, int n)
7     {
8         // n + 1 if m = 0
9         if (m == 0)
10            return n + 1;
11
12        // A(m - 1, 1) if m > 0 and n = 0
13        else if (m > 0 && n == 0)
14            return Ackerman(m - 1, n:1);
15
16        // A(m - 1, A(m, n - 1)) if m > 0 and n > 0
17        return Ackerman(m - 1, Ackerman(m, n - 1));
18    }
```

7.23 Method

```
20    public static int numberOfOnesInBinaryRepresentation(int num)
21    {
22        return switch (num) {
23            // Base case 0
24            case 0 -> 0;
25            // Base case 1
26            case 1 -> 1;
27            // Keep going
28            default -> numberOfOnesInBinaryRepresentation(num / 2)
29            + numberOfOnesInBinaryRepresentation(num % 2);
30        };
31    }
```

7.36 Method

```
33    public static void printReverse(Scanner in)
34    {
35        // Base case of no input to receive
36        if (!in.hasNextLine())  return;
37
38        // Pull current input
39        String line = in.nextLine();
40
41        // Sort out the rest then print after
42        printReverse(in);
43        System.out.println(line);
44    }
```

Testing

```
c:\Users\Initec\Documents\Personal\cs2420_summer2
Starting tests Assignment 07
Ending tests Assignment 07
Press any key to continue . . .
```