

HW10\src\Problem1.java

```
1  /*
2  Name: Hunter Poole
3  Date: 4/16/25
4  HW #: 10
5  Problem #: 1
6  Source Code: Problem1.java
7  Action: Determines the count and percentage of heads or tails given 1000 coin flips.
8          Takes no input. Calls a function "Flip" to flip each coin.
9  */
10
11 public class Problem1
12 {
13
14     public static void main(String[] args)
15     {
16         int FlipResult = -1, HeadsCount = 0, TailsCount = 0;
17         float HeadsPercentage, TailsPercentage;
18
19         for (int i = 0; i < 1000; i++)
20         {
21             FlipResult = Flip();
22
23             if (FlipResult == 1)
24             {
25                 ++HeadsCount;
26             }
27             else
28             {
29                 ++TailsCount;
30             }
31         }
32
33         HeadsPercentage = (HeadsCount / 1000f) * 100f;
34         TailsPercentage = (TailsCount / 1000f) * 100f;
35
36         System.out.printf("%s %d %.1f%s %n%s %d %.1f%s", "Heads =", HeadsCount,
37             HeadsPercentage, "%",
38             "Tails =", TailsCount, TailsPercentage, "%");
39     }
40 }
41
42 /*
43 Action: Flips a coin! Uses Math.random() and rounds to 0 or 1 using Math.round().
44 Parameters: N/A
45 Returns: int 0 for tails or 1 for heads.
46 Precondition: N/A
47 */
48
```

```
47     static int Flip()
48     {
49         int IsHeads;
50
51         IsHeads = (int)Math.round(Math.random());
52
53         return IsHeads;
54     }
55
56 }
57
58 /*
59 Heads = 526 52.6%
60 Tails = 474 47.4%
61
62 Heads = 497 49.7%
63 Tails = 503 50.3%
64
65 Heads = 499 49.9%
66 Tails = 501 50.1%
67
68 Heads = 497 49.7%
69 Tails = 503 50.3%
70 */
```