

1. A loop structure is used to repeatedly execute statements while the required conditions are met
2. A while loop checks if the conditions are met before executing its statements, whereas a do while loop checks if the conditions are met after an iteration.
3. We used an input validation loop during the GuessingGame Part: A mastery.
4. A) An infinite loop is a loop that continues forever as the condition to loop it is always true.
B) Syntax errors can lead to infinite loops, such as an extra semicolon resulting in a statement constantly being checked. Or logical errors such as a statement being defined true within the loop itself.
C) Overflow occurs when a number is so large that there are not enough bits to store it, this usually results in a run-time error.
5. The loop would execute 59 times.
6. Any number less than 120 will cause the loop to continue indefinitely.
7. A counter increments by a constant value every time a loop is run, it can be used to keep track of the number of times a user tries a password, or how many items are items are on a list, accumulators on the other hand increments by a value that isn't constant, accumulators are used when calculating an average, or the total value of multiple items.
8.

```
int sum = 0;
for (int x = 3; x <= 10; x++) {
    sum += x;
}
```
9. When picking a loop type you should take into consideration if you want the loop to continue a set number of times or not, and when you want the loop to be evaluated, either before or after an iteration.