Graphical user interface, text, application

Description automatically generated



The while loop will run n number of times

The if statement within the while loop will also run n number of times

Since the if statement within the while loop also has a time complexity of n it would be n\*n which is n^2

Therefore the time complexity of this following algorithm is O(n^2)

Graphical user interface, text, application, email

Description automatically generated

First you would put all the bags on the scale at once. Let’s assume there are 5 M&Ms in each bag. Since there are 19 1 gram bags and 1 1.1 gram bags, the total weight after putting them all on the scale should be 100.5 grams. I would then remove each bag one by one and record the remaining weight after each time I remove a bag. Once the grams amount no longer ends in .5, we can assume that the bag that was just removed is the heaviest since the 19 bags would all only contain 5 grams and the 5 1.1 gram M&Ms would come out to 5.5 grams.