**ALGORITHMS THAT GOVERNS THE WORKING OF THE SYSTEM**

Let the machine learning model makes a prediction (no. of patient who will not appear on the appointment date) = **n\_1**

And, let the average time taken by per patient be **t\_avg,**

And the waiting time for per patient be **R\_wt,**

Total time reduced will be:

**R\_wt = R\_wt – n\_1\*t\_avg**

Where **n1\*t\_avg** is total waiting time that will be reduced (hence we subtracted from original time allotted per patient)

Now, if the predicted number will be **n\_1** will be more than actual number (actual number means the number of patients who actually didn’t appeared)

Let the actual number be **n\_2**,

Conditions:

1: if **n\_1>n\_2**:

Then reduced time will be **R\_wt = R\_wt – n1\*t\_avg + (n\_1-n\_2) \*t\_avg**

**= R\_wt – n\_2\*t\_avg**

2: if **n\_1<n\_2**:

Then reduced time will be **R\_wt = R\_wt – n\_1\*t\_avg + (n\_2 - n\_1) \*t\_avg**

**= R\_wt – 2\*n\_1\*t\_avg + n\_2\*t\_avg**

3: Else:

**R\_wt = R\_wt – n\_1\*t\_avg**