IIT Madras

ONLINE DEGREE

Computational Thinking
Indian Institute of Technology, Madras
Tutorial 2.3

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Hello computational thinking students. In this tutorial, we are going to look at a procedure which is similar to what the professors have done in lecture 13 which is to find the store with the maximum number of bills.

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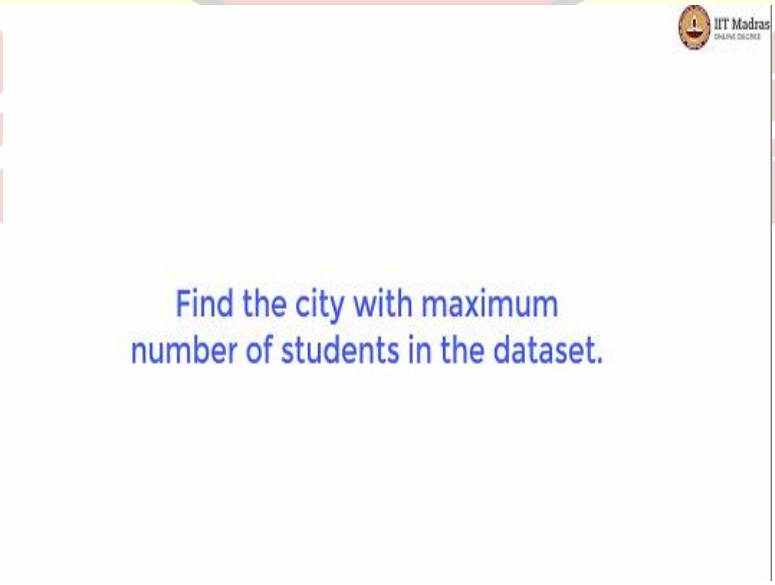

For our tutorial, we will look at the problem where we find the city with maximum number of students in the scorecard dataset.

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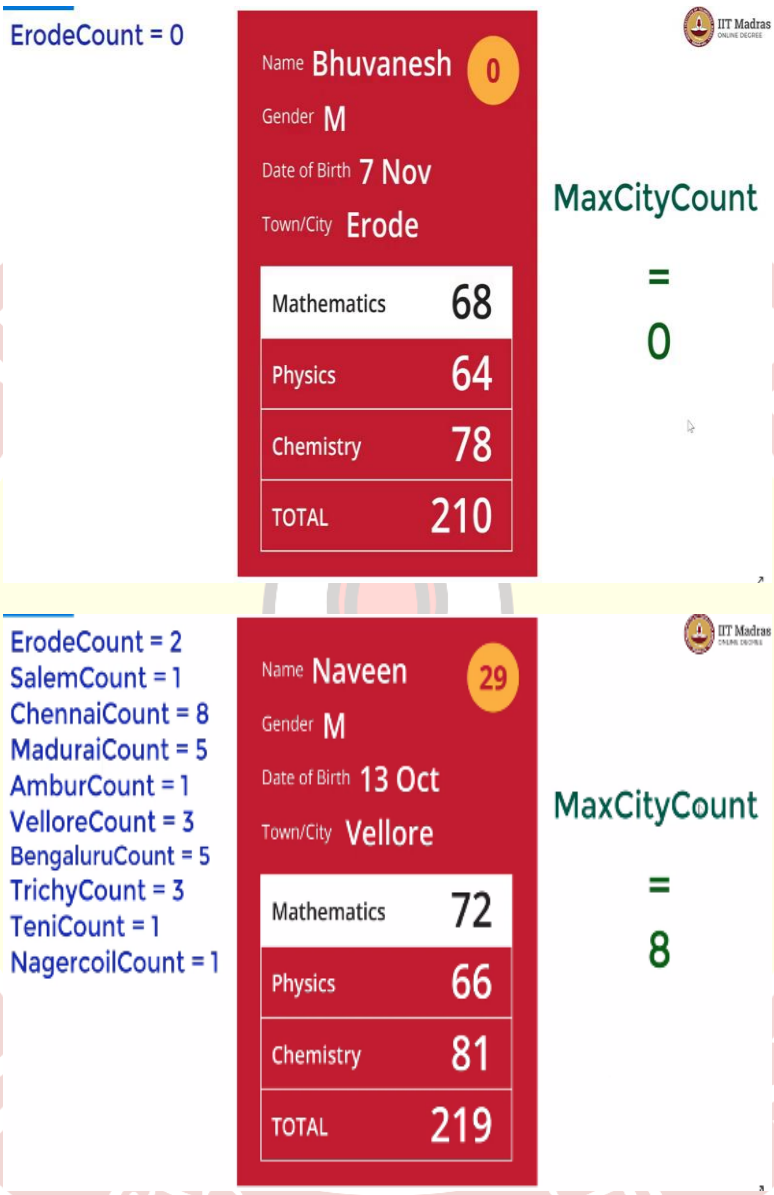

So we need to start with first initializing the variable which is maximum city count. This variable will be initialize to 0 and we increment every time we see a larger city count and the city counts are supposed to come every time we encounter a new city. For example, here we are coming across Erode for the first time. So, we make a variable called Erode count and we initialize it to 0 and since we have seen one card of Erode we incremented by 1.

So Erode count is 1 and since Erode count being 1 is the maximum city count we have seen so far, we are going to update our max city count to 1. Now, going card by card Salem we are encountering for the first time, so we declare a new variable called Salem count. We initialize it to 0 and then we incremented by 1. Now, Chennai again we are seeing for the first time so new variable Chennai count initialize to 0 increment by 1.

So far max city count has been 1 only because all cards we have seen, all cities we have seen had only one student each so far. And now Chennai has two students. So increment Chennai count to 2 and since this is larger than the max city count being 1 we are going to change our max city count value from 1 to 2. Madurai is new. So Madurai count is declared initialize to 0 and incremented by 1.

Max city count does not change because 1 is still less than 1. One more Chennai so Chennai count is now 3 which means it is greater than our current max city count value. So max city count has to be updated to 3. Again Ambur is new. So Ambur count is declared initialized to 0 incremented by 1. No change in max city count because 1 is lesser than 3. Now, we see Vellore, Vellore is new.

So new variable initialize to 0 increment by 1 no change in max city count because 1 is still less than 3. Again new city, new variable, initialize to 0 increment by 1 no change in max city count. One more Bengaluru, so Bengaluru count will now increase by 1. So we have Bengaluru count at 2. One more Chennai now so this makes Chennai count 4 and that would imply max city count has to change because 4 is greater than 3. So max city count has to be updated to 4.

Bengaluru again so this time we are at 3 Bengaluru but no change in max city count. Chennai again so now Chennai count is 5. Therefore max city count also has to change to 5. Madurai is now at 2. Trichy is new. So declare Trichy count as a variable initialize it to 0 increment by 1. Same with Teni it is new. So Teni count is initialize to 0 and incremented by 1. Trichy again so we now have Trichy count is 2 and now we are at Chennai again.

Chennai is now at 6 students and that means our max city count also has to be updated to 6. Erode count is now 2. Trichy count will now be equal to 3. Vellore count is now going to be equal to 2. Bengaluru count is now 4. Nagarcoil is new. So Nagercoil count is declared initialize to 0 incremented by 1 and then we have Bengaluru count going to 5 and then we have Madurai count being incremented to 3.

Again Chennai so Chennai count is now incremented to 7 and that means our max city count also has to be updated it is now 7. Chennai again, 8 students in Chennai and that means max city count also is updated to 8. Now there is 4 Madurai, 5 Madurai and 3 Vellore and this is the last count so our max city count is 8. Thank you.