IIT Madras

ONLINE DEGREE

Computational Thinking
Tutorial 2.6

Hello Computational Thinking students. In this tutorial we will look at a task which is very similar to the one performed by the professors in lecture number 16. So, here in lecture number 16 the task was to find out the maximum maths score in the scorecard data set and also to find the card number which has this maximum maths score. And all of this in one iteration.

So, what the professors do for this is they define two variables MaxMaths and MaxCard No. MaxMaths is supposed to be the score. So, when they see a high score which is 68 in this case here, they note down 68 and also the MaxCard No which is 0. Now, 62 is not large enough, 57 is not large enough, 42 is not large enough and 87 is large so 68 goes and 87 comes in and the card number 4 is registered, so this they do for the entire data set.

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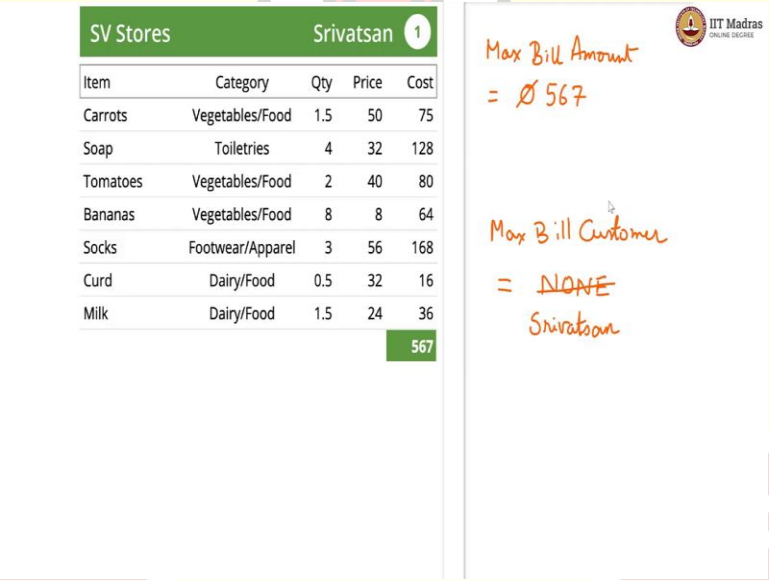

Now, let us do something similar for the shopping cart data set, what we are going to look for is the maximum bill amount and which customer has paid the maximum in a bill in this dataset. So, we could also look at the shopping bill number but let us try to find out the customer name. So, for that again we have two variables, one is Max Bill Amount which we will initialize to 0 because shopping bill amount can be at minimum 0 in fact you it cannot be 0, it has to be something greater than 0 so we initialize to this impossible number 0. And then we will update it every time we come across a larger bill amount.

The other variable Max Bill Customer, now this cannot be a number, this is a person's name it is a text entry so instead of a number we should keep an initialized value which is not going to be there in our dataset. So, we will go with NONE, so NONE cannot be a customer name it is in fact nothing, so this is the initialized value and whenever we have to update we will update with the name of the customer with the Max Bill Amount in the bill.

So, let us begin right now we have Srivatsan at 567, so off goes the 0 and we have 567 as our Max Bill Amount at the moment and the customer name is Srivatsan so off goes the none and we have Srivatsan as our Max Bill Customer.

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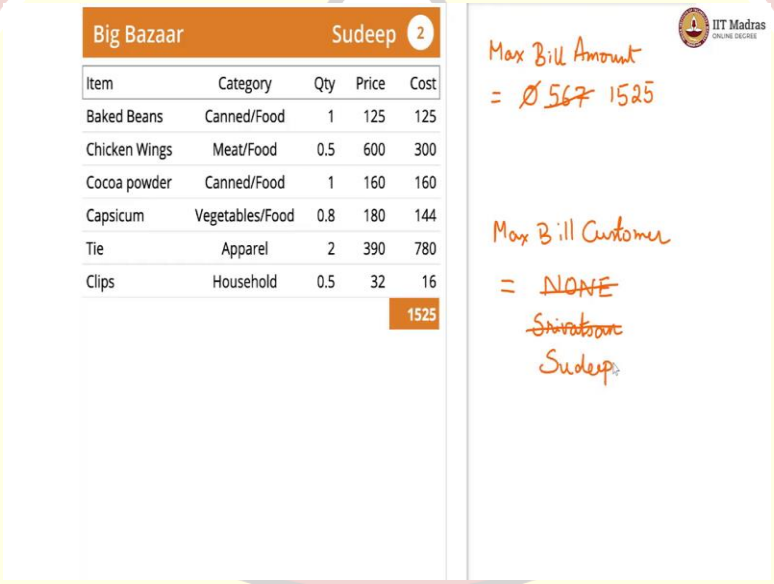

Now, Sudeep has a larger value, so off goes the 567, we have 1525 as our Max Bill Amount right now and Srivatsan is also gone we now have Sudeep as the Max Bill Customer.

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Akshaya is 1341 which is less than our Max Bill Amount, so we do not update.

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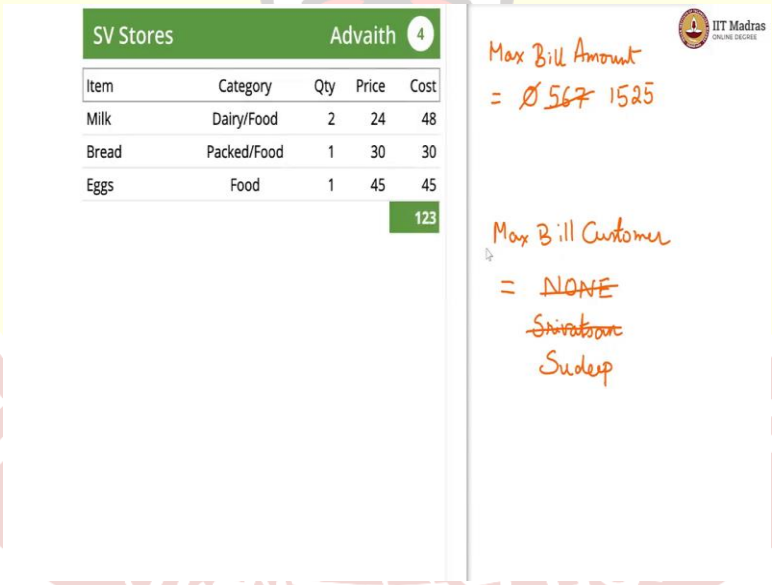

Advaith's bill is small, so we do not update.

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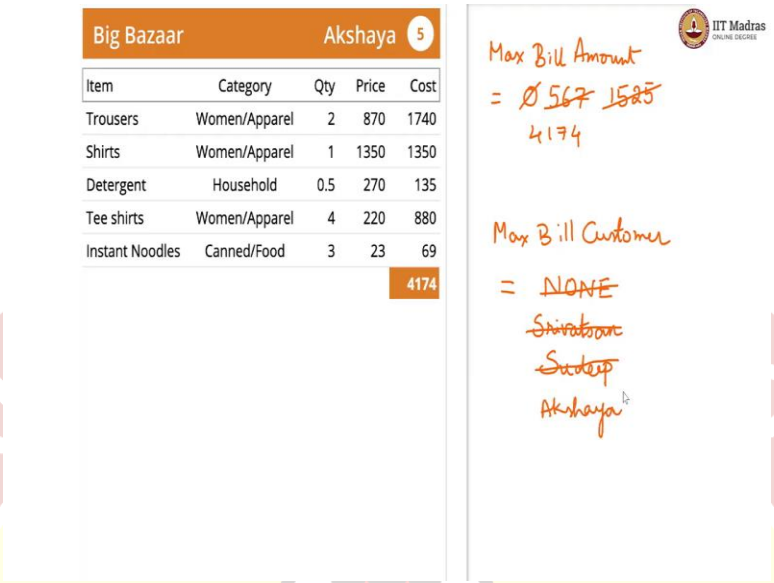

Akshaya has come back with a large number 4174, so we now have 4174 as our Max Bill Amount and Sudeep is gone from here, we now have Akshaya as the Max Bill Customer. 354 is small, 96 is small, 3132 is large but not as large as our Max Bill Amount, 595 is small, 375 is small, 893 is small, 186 is also small, 3060 is small, 656 is small, 229 is small, 187 is small, in fact all Sun General and SV stores seem to be small bills, 279 is small, 603 is small, 592 is small, 622 is small, 128 is small, 315 is small, 888 is small, 92 is small, 1364 is small, 276 is small, 340 is small, 514 is small, 106 is small, 798 is also small.

So, this means our Max Bill Amount is 4174 and our Max Bill Customer also we got in a single iteration and it is Akshaya. Thank you.