

# IIT Madras

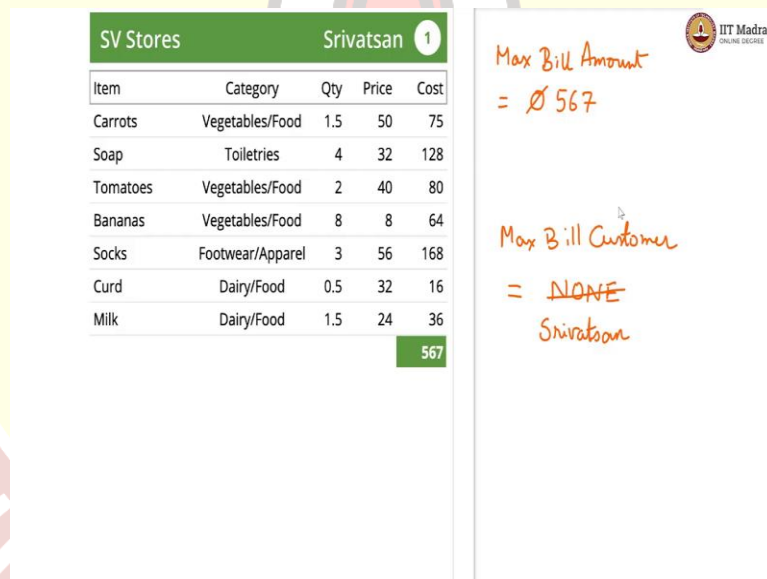
ONLINE DEGREE

## 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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The screenshot shows a shopping cart interface for 'SV Stores' with a user 'Srivatsan' logged in. The cart contains several items with their categories, quantities, prices, and costs. To the right of the cart, there are handwritten notes in orange ink: 'Max Bill Amount = ₹ 567' and 'Max Bill Customer = NONE Srivatsan'. The IIT Madras logo is visible in the top right corner of the interface.

Item	Category	Qty	Price	Cost
Carrots	Vegetables/Food	1.5	50	75
Soap	Toiletries	4	32	128
Tomatoes	Vegetables/Food	2	40	80
Bananas	Vegetables/Food	8	8	64
Socks	Footwear/Apparel	3	56	168
Curd	Dairy/Food	0.5	32	16
Milk	Dairy/Food	1.5	24	36

567

Max Bill Amount  
= ₹ 567

Max Bill Customer  
= NONE  
Srivatsan

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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The screenshot shows a shopping cart titled 'Big Bazaar' with the user 'Sudeep' and a cart icon with the number '2'. The cart contains a table of items with columns for Item, Category, Qty, Price, and Cost. The items listed are Baked Beans, Chicken Wings, Cocoa powder, Capsicum, Tie, and Clips. The total cost is 1525. To the right of the table, there are handwritten notes in orange ink: 'Max Bill Amount = ~~567~~ 1525' and 'Max Bill Customer = ~~NONE~~ Srivatsan Sudeep'. The IIT Madras logo is visible in the top right corner.

Item	Category	Qty	Price	Cost
Baked Beans	Canned/Food	1	125	125
Chicken Wings	Meat/Food	0.5	600	300
Cocoa powder	Canned/Food	1	160	160
Capsicum	Vegetables/Food	0.8	180	144
Tie	Apparel	2	390	780
Clips	Household	0.5	32	16
				1525

Max Bill Amount  
= ~~567~~ 1525

Max Bill Customer  
= ~~NONE~~  
Srivatsan  
Sudeep

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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SV Stores		Akshaya 3			
Item	Category	Qty	Price	Cost	
Face Wash	Toiletries	1	89	89	
Shampoo	Toiletries	1	140	140	
Onions	Vegetables/Food	1	98	98	
Bananas	Fruits/Food	4	8	32	
Milk	Dairy/Food	1	24	24	
Biscuits	Packed/Food	2	22	44	
Maggi	Packed/Food	1	85	85	
Horlicks	Packed/Food	1	270	270	
Chips	Packed/Food	1	20	20	
Chocolates	Packed/Food	4	10	40	
Cereal	Packed/Food	1	220	220	
Handwash	Toiletries	1	139	139	
Air freshener	Toiletries	2	70	140	
				1341	

Max Bill Amount  
= ~~₹ 567~~ 1525

Max Bill Customer  
= NONE  
Shirakumar  
Sudeep

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

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SV Stores		Advaith 4			
Item	Category	Qty	Price	Cost	
Milk	Dairy/Food	2	24	48	
Bread	Packed/Food	1	30	30	
Eggs	Food	1	45	45	
				123	

Max Bill Amount  
= ~~₹ 567~~ 1525

Max Bill Customer  
= NONE  
Shirakumar  
Sudeep

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

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Big Bazaar		Akshaya 5		
Item	Category	Qty	Price	Cost
Trousers	Women/Apparel	2	870	1740
Shirts	Women/Apparel	1	1350	1350
Detergent	Household	0.5	270	135
Tee shirts	Women/Apparel	4	220	880
Instant Noodles	Canned/Food	3	23	69
				4174

Max Bill Amount  
= ~~567~~ 1525  
4174

Max Bill Customer  
= NONE  
Shivabharan  
Sudeep  
Akshaya

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.