
Before you begin: Log in to your Education sandbox

You have a shared sandbox environment to learn about, use, and experiment with MicroStrategy Web.

- 1 In your browser, navigate to **education.microstrategy.com/MicroStrategy/servlet/mstrWeb**.
- 2 Log in to the sandbox with your **MicroStrategy Account** credentials.
- 3 The MicroStrategy Landing page opens. Click the **MicroStrategy Tutorial** project.
- 4 Click **Go to MicroStrategy Web**.

The Shared Reports folder of the MicroStrategy Tutorial project opens.

In the sandbox environment, you cannot save items in the Shared Reports folder.

Exercise: Display subtotals to summarize revenue and cost values

To better understand and summarize the revenue and cost data, you decide to display various subtotals for the Revenue and Cost metrics.

- Create a Cost Subtotals metric that displays only the following subtotals:
 - Average
 - Maximum
 - Standard Deviation
 - Create a Revenue Subtotals metric that displays only the following subtotals:
 - Total
 - Minimum
 - Create a report that contains:
 - Category attribute
 - Item attribute
 - Revenue Subtotals metric
 - Cost Subtotals metric
-


- Display Average, Maximum, Minimum, and Standard Deviation subtotals on the report. The first few rows of the report look like the following.

Subtotals sample report

Category	Item	Revenue Subtotals	Cost Subtotals
Standard Deviation		--	\$116,440.44
Maximum		--	\$729,680.58
Average		--	\$82,583.57
Minimum		\$10,901.85	--
	Standard Deviation	--	\$15,033.38
	Maximum	--	\$94,401.84
	Average	--	\$23,009.07
	Minimum	\$10,901.85	--
	100 Places to Go While Still Young at Heart	\$67,992.60	\$50,216.19
	Art As Experience	\$23,733.05	\$18,247.74
	The Painted Word	\$22,323.30	\$19,697.86
	Hirschfeld on Line	\$50,442.00	\$38,153.05

Select the subtotals for the Cost metric

When you display totals in a report, the Cost metric displays the default subtotal (total) using the Sum function. While you can select a different function, such as average or count, for this metric, you decide to disable the default subtotal. This means that the metric does not display totals.

- 1 Access your Education sandbox. For a reminder on how to do this, see *Exercise: Access your Education sandbox*.
 - 2 If you did not create the Cost metric in *Exercise: Create simple metrics to calculate cost and revenue values*, create it now using the following steps:
 - a On the My Reports folder page, click **Create** and select **New Metric**.
 - b From the **Functions** list on the left, click **Sum** to add it to the metric definition window. You may need to scroll to find the function in the alphabetical list.
 - c Select the fact to use in the metric definition. Click the **Browse** icon  next to the Search for a fact, metric, or attribute box. Click the **Facts** folder and then the **Cost** fact.
-

Metric Name: [Format](#) [Metric Options](#)

Function: Sum

Sum

[Function Parameters](#)

- d Format the metric's values. Click **Format** at the top right of the Metric Editor.
- e In the Format window, select **Metric Values** from the drop-down list.
- f Under Category, select **Currency**. By default, Decimal places is set to 2 and the Currency Symbol is set to \$, which is the formatting that you want.
- g In the Negative Numbers list, select the format with red text, no negative sign, and no parentheses.

Format

Metric values [Clear Format](#)

Number

Alignment
Font
Borders
Background

Category

☐ Default
☐ General
☐ Fixed
☒ **Currency**
☐ Date
☐ Time
☐ Percentage
☐ Fraction
☐ Scientific
☐ Custom

Decimal places:

Currency symbol:

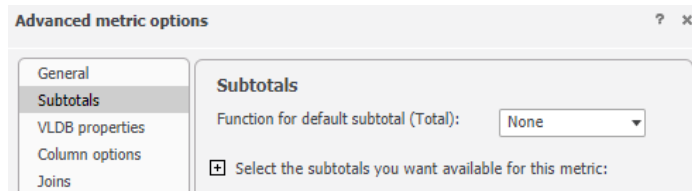
Currency position:

Negative numbers

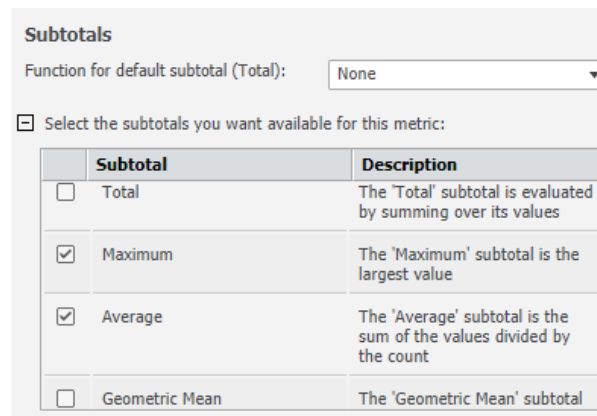
- \$1,234.01
- \$1,234.01
- \$1,234.01**
- (\$1,234.01)
- (\$1,234.01)

- h Click **OK** to close the Format window.
 - i Click **Save**.
 - j In the Save As window, from the Save In drop-down list, select **My Reports**.
 - k In the **Name** box, type **Cost**.
 - l Click **Save**.
- 3** On the My Reports folder page, right-click the **Cost** metric and select **Edit**.
- 4** In the Metric Editor, click **Metric Options** at the top right.
-

- 5 In the Advanced Metric Options window, click **Subtotals** in the list of options on the left.
- 6 In the Subtotals pane, in the **Function for default subtotal (Total)** drop-down list, select **None**.



- 7 Although you do not want the cost totals to display, you want users to be able to choose other subtotals to display for the Cost metric. Expand the **Select the Subtotals You Want Available for this Metric** list, then clear all of the check boxes except for the **Average**, **Maximum**, and **Standard Deviation** subtotals.



- 8 Click **OK**.
- 9 Save the metric as **Cost Subtotals** in the **My Reports** folder.

Select the subtotals for the Revenue metric

- 1 On the My Reports folder page, right-click the **Revenue** metric and select **Edit**.
 - 2 In the Metric Editor, click **Metric Options** at the top right.
 - 3 In the Advanced Metric Options window, click **Subtotals** in the list of options on the left.
-

-
- 4 In the Subtotals pane, notice that by default, the **Sum** function is selected as the function for the default subtotal (total). You want users to be able to view revenue totals calculated by summing revenue values, so keep this selection.

Remember that for the Cost Subtotals metric, you selected None as the function for the default subtotal (total), so those metric totals are disabled.

- 5 In addition to Revenue grand totals, you want users to be able to display the Revenue subtotal of Minimum, if they choose to. Expand the **Select the**

Subtotals You Want Available for this Metric list then clear all of the check boxes except the **Minimum** subtotal.

Advanced metric options

Subtotals

Function for default subtotal (Total): Sum

☒ Select the subtotals you want available for this metric:

	Subtotal	Description
<input checked="" type="checkbox"/>	Minimum	The 'Minimum' subtotal is the smallest value
<input type="checkbox"/>	Count	The 'Count' subtotal is evaluated by counting the number of input values
<input type="checkbox"/>	Variance	The 'Variance' subtotal measures the square of the spread of the input values

- 6 Click **OK**.
- 7 Save the metric as **Revenue Subtotals** in the **My Reports** folder.

Add the subtotal metrics to a report and display subtotals

- 1 On the My Reports page, click **Create**, point to **New Report**, then select **Blank Report**.
 - 2 In the All Objects pane on the left, click **Hierarchies** then the **Products** hierarchy.
 - 3 Drag **Category** to the rows in the layout.
 - 4 Drag **Item** to the rows in the layout, to the right of Category.
-

-
- 5 In the All Objects pane, select **My Personal Objects** from the drop-down list.
 - 6 In the All Objects pane, click the **My Reports** folder.
 - 7 Drag the **Revenue Subtotals** metric to the columns in the layout.
 - 8 Drag the **Cost Subtotals** metric to the right of Revenue Subtotals in the layout.

Category	Item	Metrics	Revenue Subtotals	Cost Subtotals
<Category>	<Item>		<Revenue Subtotals>	<Cost Subtotals>

- 9 **Run** the report.

Display default totals

- 10 From the **Data** menu, select **Show Totals** to display the totals.

You cannot see the totals and subtotals because by default they are displayed at the end of the report. This report has two pages, so you can either switch to the second page or display totals at the top of the report, as you do in the next steps.

- 11 From the **Data** menu, select **Edit Totals**.

- 12 In the Subtotals Editor, click the **Display** tab.

- 13 In the **Subtotal Positions by Row** area, click **Top of Each Level** and then click **OK** to close the Subtotals Editor.

Now the totals are displayed at the top of the report, so that you can easily view them. Because you disabled the default subtotal (total) for the Cost Subtotals metric, the Cost Subtotals totals (for Category and Item) are not calculated. The Revenue Subtotals totals are calculated using the sum function.

Category	Item	Revenue Subtotals	Cost Subtotals
Total		\$35,023,708.15	--
	Total	\$2,640,094.45	--
	100 Places to Go While Still Young at Heart	\$67,992.60	\$50,216.19
	Art As Experience	\$23,733.05	\$18,247.74
	The Painted Word	\$22,323.30	\$19,697.86
	Hirschfeld on Line	\$50,442.00	\$38,153.05

Select the subtotals to display

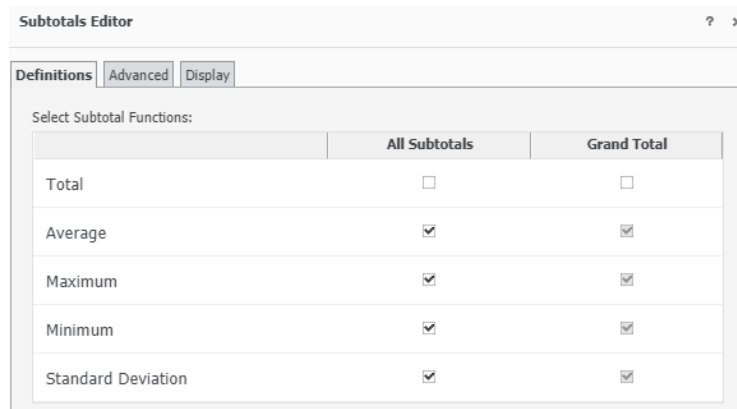
For both the Cost Subtotals metric and Revenue Subtotals metric, you enabled subtotals other than Total to be available for users to display. Display these subtotals on the report.

14 From the **Data** menu, select **Edit Totals**.

15 In the Subtotals Editor, on the Definitions tab, the subtotals available for the Revenue Subtotal and Cost Subtotal metrics display. You do not want the totals for revenue to display, so in the **All Subtotals** column, clear the **Total** check box.

Remember that totals for cost already do not display because you disabled the default subtotal (total) for the Cost Subtotals metric.

16 In the **All Subtotals** column, select the **Average, Maximum, Minimum, and Standard Deviation** check boxes.



Select Subtotal Functions:	All Subtotals	Grand Total
Total	<input type="checkbox"/>	<input type="checkbox"/>
Average	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Maximum	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Minimum	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Standard Deviation	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

17 Click **OK** to close the Subtotals Editor.

18 Compare your results to the sample at the beginning of this exercise, *Subtotals sample report*. Subtotals are calculated on the report based on which subtotals you made available for each metric.

- The Cost Subtotals metric can be subtotaled using the Average, Maximum, and Standard Deviation functions because they are the same subtotals that you selected when you defined the metric.
- The Revenue Subtotals metric can be subtotaled using the Minimum function because it is the same subtotal that you selected when you defined the metric.

19 Save the report in the **My Reports** folder as **Category, Item, Cost, and Revenue with Subtotals**.
