**Cockpit:**

**Traffic:**

Total Session (area) – 1.1a:

1. Create “Select Date” as parameter
   1. Set “Data Type” as “Date”
   2. Set “Allowable values” as “Range”
   3. Question: All vs List vs Range?
   4. Under “Range of values”, click “Set from Field” and click “date”
   5. Under “Range of values”, click “Step Size” and choose 1 month
2. Create “LTD” as CF: ﻿ ﻿
   1. IF [date] <= DATEADD('day',-1, DATEADD('month',1,[Select Date])) THEN TRUE ElSE FALSE END
3. Drag “sessions” to “Rows”
4. Drag “date” to “Columns“ and change it to “Month” (with year)
5. Drag “LTD” to filter and select “True”
6. Under Marks, set to “Area” change color to grey

Total Session (Word) – 1.1b:

1. Create “﻿Sessions CM” as CF:
   1. ﻿IF YEAR([date])=YEAR([Select Date]) AND MONTH([date])=MONTH([Select Date]) THEN [sessions] END
   2. Right click on the pillar, under “Group by”, select “Folder”
   3. Right click on the pillar, under “Folders”, select “Create Folder”, enter “﻿CM, PM, M/M”
2. Create “Sessions PM” as CF:
   1. ﻿IF YEAR([date])=YEAR(DATEADD('day',-1,[Select Date])) AND MONTH([date])=MONTH(DATEADD('day',-1,[Select Date])) THEN [sessions] END
   2. Right click on the pillar, under “Folders”, select “Add to folder”, then select “﻿CM, PM, M/M”
   3. Question: Do not use LOOKUP, why?
3. Create “Total Sessions M/M” as CF:
   1. ﻿ ﻿(SUM([Sessions CM])-SUM([Sessions PM]))/SUM([Sessions PM])
   2. Right click on the pillar, under “Folders”, select “Add to folder”, then select “﻿CM, PM, M/M”
   3. Question: Make sure to use SUM in the calculation, why?
4. Drag “Total Sessions M/M” and “Sessions CM” to “Text” under “Marks”
5. Right click on “Total Sessions M/M” under “Marks”, click “Format”. On the left side bar, under “Default”, click “Numbers”, “Custom” and enter “▲;▼”
6. Under “Marks”, click “Text”, click “…”, enter “<AGG(Total Sessions M/M)> <SUM(Sessions CM)> /n Total Sessions”
7. Under “Marks”, click “Text”, click “Alignment”, select “Horizontal Centre”

Total Session (Bottom) – 1.1c:

1. Right click on “Total Sessions M/M” under “Measures”, click “Default Properties”, “Number Format”, click “Custom” and enter “﻿+0.0%;-0.0%”
2. Create “date PM” as CF:
   1. ﻿LEFT(DATENAME('month',DATEADD('day',-1,[Select Date])),3)+'-'+RIGHT(DATENAME('year',DATEADD('day',-1,[Select Date])),2)
3. Drag “Total Sessions M/M” and “date PM” to “Text” under “Marks”
4. Under “Marks”, click “Text”, click “…”, enter “<AGG(Total Sessions M/M)> vs <date PM>”

Avg Unique Pageviews (area) - 1.2a:

1. Create “﻿Avg Unique Pageviews” as CF:
   1. ﻿﻿SUM([unique\_pageviews])/SUM([sessions])
   2. Right click on the pillar, under “Folders”, select “Add to folder”, then select “﻿CM, PM, M/M”
2. Drag ““﻿Avg Unique Pageviews” to “Rows”
3. Drag “date” to “Columns“ and change it to “Month” (with year)
4. Drag “LTD” to filter and select “True”
5. Under Marks, set to “Area” change color to grey

Avg Unique Pageviews (Word) - 1.2b:

1. Create “﻿﻿Unique Pageviews CM” as CF:
   1. ﻿IF YEAR([date])=YEAR([Select Date]) AND MONTH([date])=MONTH([Select Date]) THEN [unique\_pageviews] END
   2. Right click on the pillar, under “Folders”, select “Add to folder”, then select “﻿CM, PM, M/M”
2. Create “﻿﻿Unique Pageviews PM” as CF:
   1. ﻿ ﻿IF YEAR([date])=YEAR(DATEADD('day',-1,[Select Date])) AND MONTH([date])=MONTH(DATEADD('day',-1,[Select Date])) THEN [unique\_pageviews] END
   2. Right click on the pillar, under “Folders”, select “Add to folder”, then select “﻿CM, PM, M/M”
3. Create “﻿Avg Unique Pageviews CM” as CF:
   1. ﻿ ﻿ ﻿SUM([Unique Pageviews CM])/SUM([Sessions CM])
   2. Right click on the pillar, under “Folders”, select “Add to folder”, then select “﻿CM, PM, M/M”
4. Create “﻿Avg Unique Pageviews PM” as CF:
   1. SUM([Unique Pageviews PM])/SUM([Sessions PM])
   2. Right click on the pillar, under “Folders”, select “Add to folder”, then select “﻿CM, PM, M/M”
5. Create “﻿﻿Avg Unique Pageviews M/M” as CF:
   1. ﻿([Avg Unique Pageviews CM]-[Avg Unique Pageviews PM])/[Avg Unique Pageviews PM]
   2. Right click on the pillar, under “Folders”, select “Add to folder”, then select “﻿CM, PM, M/M”
   3. Question: There is no SUM in M/M comparing to “Total Session M/M”, why?
6. Drag “Avg Unique Pageviews M/M” and “Avg Unique Pageviews CM” to “Text” under “Marks”
7. Right click on “Avg Unique Pageviews M/M” under “Marks”, click “Format”. On the left side bar, under “Default”, click “Numbers”, “Custom” and enter “▲;▼”
8. Under “Marks”, click “Text”, click “…”, enter “<AGG(Avg Unique Pageviews M/M)> <AGG(Avg Unique Pageviews CM)> /n Avg Unique Pageviews”
9. Under “Marks”, click “Text”, click “Alignment”, select “Horizontal Centre”

Avg Unique Pageviews (Bottom) - 1.2c:

1. Right click on “Avg Unique Pageviews M/M” under “Measures”, click “Default Properties”, “Number Format”, click “Custom” and enter “﻿+0.0%;-0.0%”
2. Drag “Avg Unique Pageviews M/M” and “date PM” to “Text” under “Marks”
3. Under “Marks”, click “Text”, click “…”, enter “<AGG(Avg Unique Pageviews M/M)> vs <date PM>”

Avg Duration (area) - 1.3a:

1. Create “﻿Avg Duration” as CF:
   1. ﻿﻿SUM([time\_on\_page])/SUM([sessions])
   2. Right click on the pillar, under “Folders”, select “Add to folder”, then select “﻿CM, PM, M/M”
   3. Right click on “Avg Duration” under “Measures”, click “Default Properties”, “Number Format”, click “Number (Custom)” and add suffix “s”
2. Drag “﻿Avg Duration” to “Rows”
3. Drag “date” to “Columns” and change it to “Month” (with year)
4. Drag “LTD” to filter and select “True”
5. Under Marks, set to “Area” change color to grey

Avg Duration (Word) - 1.3b:

1. Create “﻿﻿Duration CM” as CF:
   1. ﻿IF YEAR([date])=YEAR([Select Date]) AND MONTH([date])=MONTH([Select Date]) THEN [time\_on\_page] END
   2. Right click on the pillar, under “Folders”, select “Add to folder”, then select “﻿CM, PM, M/M”
2. Create “Duration PM” as CF:
   1. ﻿ ﻿IF YEAR([date])=YEAR(DATEADD('day',-1,[Select Date])) AND MONTH([date])=MONTH(DATEADD('day',-1,[Select Date])) THEN [time\_on\_page] END
   2. Right click on the pillar, under “Folders”, select “Add to folder”, then select “﻿CM, PM, M/M”
3. Create “﻿Avg Duration CM” as CF:
   1. ﻿ ﻿ ﻿SUM([Duration CM])/SUM([Sessions CM])
   2. Right click on the pillar, under “Folders”, select “Add to folder”, then select “﻿CM, PM, M/M”
   3. Right click on the pillar, under “Measures”, click “Default Properties”, “Number Format”, click “Number (Custom)” and add suffix “s”
4. Create “﻿Avg Duration PM” as CF:
   1. SUM([Duration PM])/SUM([Sessions PM])
   2. Right click on the pillar, under “Folders”, select “Add to folder”, then select “﻿CM, PM, M/M”
5. Create “﻿﻿Avg Duration M/M” as CF:
   1. ﻿([Avg Duration CM]-[Avg Duration PM])/[Avg Duration PM]
   2. Right click on the pillar, under “Folders”, select “Add to folder”, then select “﻿CM, PM, M/M”
6. Drag “Avg Duration M/M” and “Avg Duration CM” to “Text” under “Marks”
7. Right click on “Avg Duration M/M” under “Marks”, click “Format”. On the left side bar, under “Default”, click “Numbers”, “Custom” and enter “▲;▼”
8. Under “Marks”, click “Text”, click “…”, enter “<AGG(Avg Duration M/M)> <AGG(Avg Duration CM)> /n Avg Duration”
9. Under “Marks”, click “Text”, click “Alignment”, select “Horizontal Centre”

Avg Duration (Bottom) - 1.3c:

1. Right click on “Avg Duration M/M” under “Measures”, click “Default Properties”, “Number Format”, click “Custom” and enter “﻿+0.0%;-0.0%”
2. Drag “Avg Duration M/M” and “date PM” to “Text” under “Marks”
3. Under “Marks”, click “Text”, click “…”, enter “<AGG(Avg Duration M/M)> vs <date PM>”

Device (Bar) – 1.4a:

1. Drag “device\_category” to “Rows” and “Sessions CM” to “Columns”
2. Create Label:
   1. Drag “Sessions CM” to “Label” under “Marls”
   2. Right click on “Sessions CM” under “Label” and click on “Add table calculation”
   3. Choose “Percent of total”, click “Specific Dimensions”
3. Formatting:
   1. Click “Color” under “Marks” and select grey color for bars
   2. Click “Label” under Marks, under “Alignment” choose horizontal center
4. Right click on “Sessions CM” under “Label”, click “Format”. On the left side bar, under “Default”, click “Numbers”, “Percentage” and enter “0”

Device (Bubble) – 1.4b:

1. Create “﻿﻿Bounces CM” as CF:
   1. ﻿IF YEAR([date])=YEAR([Select Date]) AND MONTH([date])=MONTH([Select Date]) THEN [bounces] END
   2. Right click on the pillar, under “Folders”, select “Add to folder”, then select “﻿CM, PM, M/M”
2. Create “﻿﻿﻿Bounce % CM” as CF:
   1. SUM([Bounces CM])/SUM([Sessions CM])
   2. Right click on the pillar, under “Folders”, select “Add to folder”, then select “﻿CM, PM, M/M”
3. Drag “device\_category” to “Rows” and drag another “device\_category” to Color
4. Drag “Bounce % CM” to “Size” under “Marks” and change type to “Circle”
5. Drag another “Bounce % CM” to label, Right click on “Bounce % CM” under “Label”, click “Format”. On the left side bar, under “Default”, click “Numbers”, “Percentage” and enter “0”
6. Click “Label” under Marks, under “Alignment” choose horizontal center

**Traffic per Source**

Traffic per source - 1.5:

1. Right click on “source\_medium” under “Dimensions”, click “Transfrom” then “Split”
2. Right click on “source\_medium – split 1” under “Dimensions”, click “Edit” then rename the title to “source”

**Session per Location**

Session per Location 1.6：

1. Drag “Latitude” to “Rows” and “Longitude” to “Columns”
2. Drag “Country” to “Detail” under Marks, “Session CM” to “Color”
3. Drag another set of “Latitude” to “Rows” and “Longitude” to “Columns”
4. Right click on “Longitude” under “Columns” and select “Dual Axis”, do the same for “Latitude”
5. Under “Marks”, go to the last drop-down window
   1. Click the “+” of “Country” to add city
   2. Drag “SUM(Sessions CM)” under Color to Size
   3. Adjust the “Size” and add boarder under “Color”
   4. Drag “Sessions CM” to “Filters”, click “next”, under “Special”, select “Non-null Values”, Question: why?

**Acquisition per Channel**

Acquisition per Channel (line) - 1.7a:

1. Drag “LTD” to ”Filters” and select “True”
2. Drag “channel\_grouping”, “sessions” to “Rows, and drag “date” to “Columns” (change selection to Month Year)
3. Change view to “fit height”, Right click on axis in the chart, and uncheck “Show headers”
4. Right click any blank space in the chart and Click “Format”:
   1. Under boarder, change “Pane” to “None” for both “Column Divider” and “Row Divider”
   2. Under lines, change it to “None” for “Grid Lines” and “Zero Lines”
5. Drag “sessions CM” to “Label” under “Marks”
6. Right click on “channel\_grouping” under “Rows”, click “Sort”, then Sort By “Field”, Sort Order “Descending”, Field Name “Session CM”, Aggregation “Sum”

Acquisition per Channel (bar) - 1.7b:

1. Drag “channel\_grouping” to “Rows”, drag “sessions CM”, “Avg Unique Pageviews CM” to “Columns”
2. Right click on “channel\_grouping” under “Rows”, click “Sort”, then Sort By “Field”, Sort Order “Descending”, Field Name “Session CM”, Aggregation “Sum”
3. In “Session CM” tab under “Marks”:
   1. Drag “Session CM” to “Color”
   2. Drag “Session CM” to “Label”
   3. Right click on “Sessions CM” under “Label” and click on “Add table calculation”
   4. Choose “Percent of total”, click “Specific Dimensions”
   5. Right click on “Sessions CM” under “Label”, click “Format”. On the left side bar, under “Default”, click “Numbers”, “Percentage” and enter “0”
   6. Drag “Session PM” to “Detail”, Question: why?
   7. On the left side bar, click “Analytics”, drag “Reference line” to the chart and choose “Cell level” “SUM(Sessions CM)”
   8. In the pop-up window, under “Line”, choose “SUM(Sessions PM)” as “Value”
4. Repeat the last step for “Avg Unique Pageviews”

Top 10 Pages – 1.8:

1. For Total Sessions:
   1. Drag “page\_title” to “Rows” and select “Filter then add”: Under “Top”, select “By field” with “Top 10 by Sessions CM SUM”
   2. Right click on “page\_title” and click “Sort”, Sort by “Field”, Sort Order “Descending”, Field Name “Sessions CM”, Aggregation “Sum”
   3. Drag “Sessions CM” to “Columns”
   4. Drag another two “Sessions CM” to “Color” and “Label” under Marks
   5. Drag “Sessions PM” to “Detail” under Marks
   6. On the left side bar, click “Analytics”, drag “Reference line” to the chart and choose “Cell level”
   7. In the pop-up window, under “Line”, choose “SUM(Sessions PM)” as “Value”
2. For delta %:
   1. Drag “Total Sessions M/M” to “Columns”
   2. Under the “Total Sessions M/M” tab in Marks:
      1. Remove existing Color, Detail and Label
      2. Drag “Total Sessions M/M” to “Color”
      3. Click on “Color”, then “Edit Color”, in the “Palette” choose “Red-Green Diverging”, set Stepped Color to 2, click on “Advanced” then set Center to 0
      4. Click on “Size” and reduce the bar width
   3. Drag another “Total Sessions M/M” to column, and right click on the new “Total Sessions M/M” in “Columns” then select “Dual Axis”
   4. Under Marks, make sure the previous “Total Sessions M/M” uses “bars” and the new tab uses “Square”
   5. Right click on the bottom Axis for “Total Sessions M/M” in the chart, and select “Sync Axis”
3. For bounces %:
   1. Same as above

**Add Filters to control selected charts**

1. Go to any sheet (1.1a for instance)
2. Drag “channel\_grouping”, “country”, “device\_category” and “source” to “Filters”, in the pop up window, under “General”, “Select from list” click “All”
3. Right click “channel\_grouping” in the “Filters”, select “Apply to worksheets”, “selected worksheets” and click “All”
4. Repeat the last step for the other 3 filters

**Construct Dashboard**

1. On the left bar, change “Size” to “Automatic”
2. Drag “Vertical” container to the dashboard
3. Drag “blank” object inside the “vertical” container
4. Drag a “horizontal” container above the “blank” object and inside the “vertical container”
5. Drag “1.5” to the horizontal container
   1. Under “more option”, go to “Fit” and select “Entire view”
   2. Right click graph title and change it to “Traffic per Source”
6. Drag “1.6” to the right of 1.5 and inside the horizontal container
   1. Remove legend and change name
7. Double click on 1.6 on the top middle bar to active horizontal container, under more options, choose “Distribute Content Evenly”
8. Drag 1.8 to the vertical container in between 1.5/1.6 and the black object
   1. remove legend, fit entire view and change name
9. delete the blank object below 1.8
10. Double click on 1.8 on the top middle bar to active horizontal container, under more options, choose “Distribute Content Evenly”
11. Please refer to the course video and published dashboard for the rest steps

**How to add more than M/M comparison:**

1. Create “Select Comparison” parameter:
   1. Data Type: Float, Allowable values: List
   2. 1 – M/M; 2 – Y/Y; 3 – YTD
   3. Quenstion: Use integer over string, why????????
2. Create “Sessions PY” as CF:
   1. ﻿IF YEAR([date])=YEAR([Select Date])-1 AND MONTH([date])=MONTH([Select Date]) THEN [sessions] END
   2. Right click “Session PY”, select “Folders”, then create a new folder: “Switch Comparison”
3. Create “Sessions YTD” as CF:
   1. ﻿IF YEAR([date])=YEAR([Select Date]) AND MONTH([date])<=MONTH([Select Date]) THEN [sessions] END
4. Create “Sessions PYTD” as CF:
   1. ﻿IF YEAR([date])=YEAR([Select Date])-1 AND MONTH([date])<=MONTH([Select Date]) THEN [sessions] END
5. Create “Sessions Switch 1” as CF:
   1. ﻿CASE [Select Comparison] WHEN 1 THEN [Sessions CM] WHEN 2 THEN [Sessions CM] WHEN 3 THEN [Sessions YTD] END
6. Create “Sessions Switch 2” as CF:
   1. ﻿CASE [Select Comparison] WHEN 1 THEN [Sessions PM] WHEN 2 THEN [Sessions PY] WHEN 3 THEN [Sessions PYTD] END
7. Create “﻿Total Sessions Comparison” as CF:
   1. ﻿(SUM([Sessions Switch 1])-SUM([Sessions Switch 2]))/SUM([Sessions Switch 2])