Project: Analyzing a Market Test

Complete each section. When you are ready, save your file as a PDF document and submit it here.

Step 1: Plan Your Analysis

To perform the correct analysis, you will need to prepare a data set. (500 word limit)
Answer the following questions to help you plan out your analysis:

1. **What is the performance metric you'll use to evaluate the results of your test?**
   To evaluate the results I'll use **incremental lift** / increase in profit growth, which is represented in the gross_margin variable.

2. **What is the test period?**
   The test period is 12 weeks (2016-April-29 to 2016-July-21), which corresponds to the requirments of AB trend tool for the case of performance measures that are reported on a weekly basis.

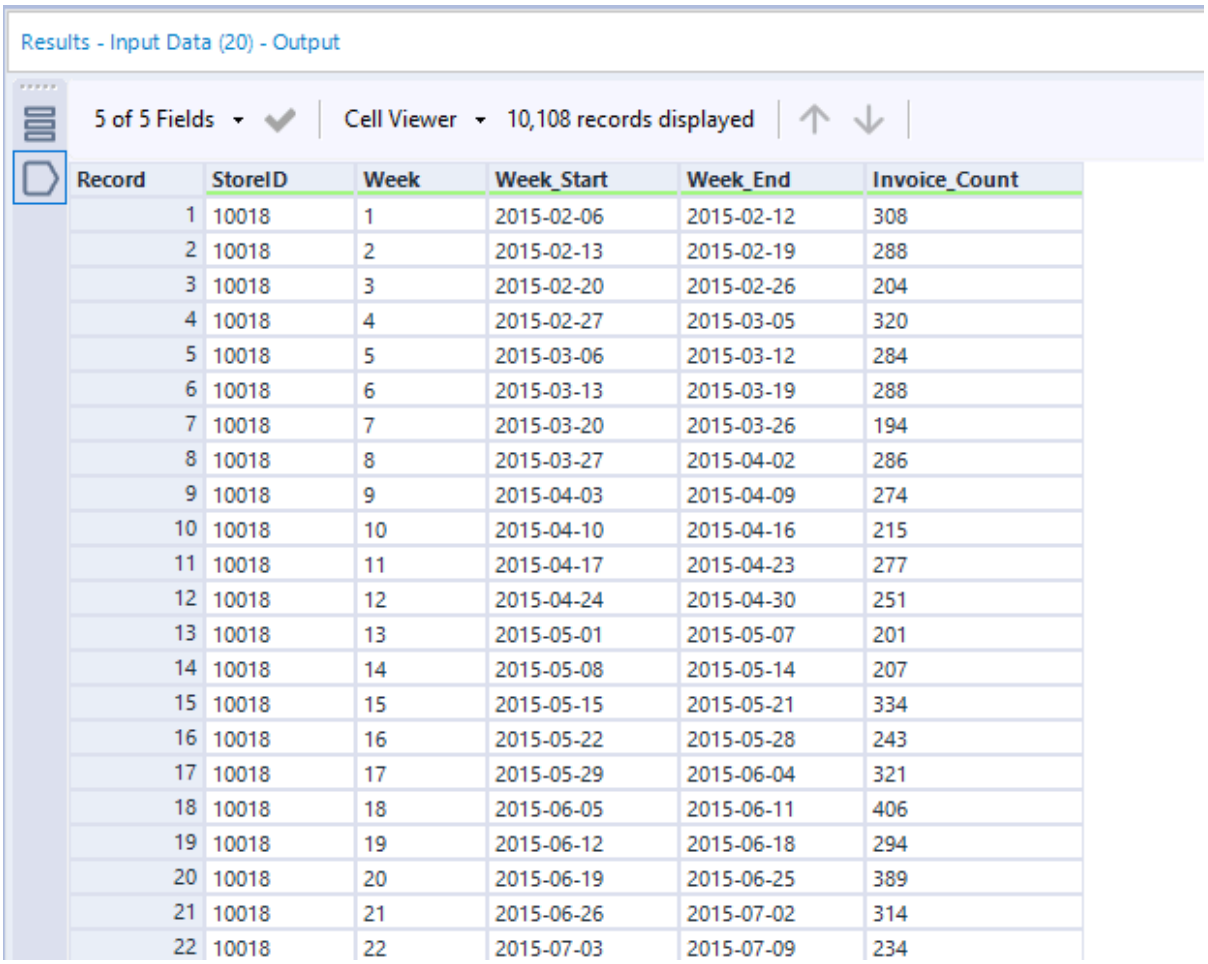
   We need total 76 weeks of data which includes 12 weeks of the test period + 12 weeks of the compared period + 52 weeks / 1 year of data prior to the test.

3. **At what level (day, week, month, etc.) should the data be aggregated?**
   Data should be aggregated by weeks.

   We have invoices daily dated, so there are possibilities to aggregate data by day, week, month. As we have a coffee chain, seems reasonable to take into account the underlying volatility of the performance measure, and consider a week like a full cycle for an overage customer's visit.

Step 2: Clean Up Your Data

In this step, you should prepare the data for steps 3 and 4. You should aggregate the transaction data to the appropriate level and filter on the appropriate data ranges. You can assume that there is no missing, incomplete, duplicate, or dirty data. You're ready to move on to the next step when you have weekly transaction data for all stores.



Record	StoreID	Week	Week_Start	Week_End	Invoice_Count
1	10018	1	2015-02-06	2015-02-12	308
2	10018	2	2015-02-13	2015-02-19	288
3	10018	3	2015-02-20	2015-02-26	204
4	10018	4	2015-02-27	2015-03-05	320
5	10018	5	2015-03-06	2015-03-12	284
6	10018	6	2015-03-13	2015-03-19	288
7	10018	7	2015-03-20	2015-03-26	194
8	10018	8	2015-03-27	2015-04-02	286
9	10018	9	2015-04-03	2015-04-09	274
10	10018	10	2015-04-10	2015-04-16	215
11	10018	11	2015-04-17	2015-04-23	277
12	10018	12	2015-04-24	2015-04-30	251
13	10018	13	2015-05-01	2015-05-07	201
14	10018	14	2015-05-08	2015-05-14	207
15	10018	15	2015-05-15	2015-05-21	334
16	10018	16	2015-05-22	2015-05-28	243
17	10018	17	2015-05-29	2015-06-04	321
18	10018	18	2015-06-05	2015-06-11	406
19	10018	19	2015-06-12	2015-06-18	294
20	10018	20	2015-06-19	2015-06-25	389
21	10018	21	2015-06-26	2015-07-02	314
22	10018	22	2015-07-03	2015-07-09	234

Step 3: Match Treatment and Control Units

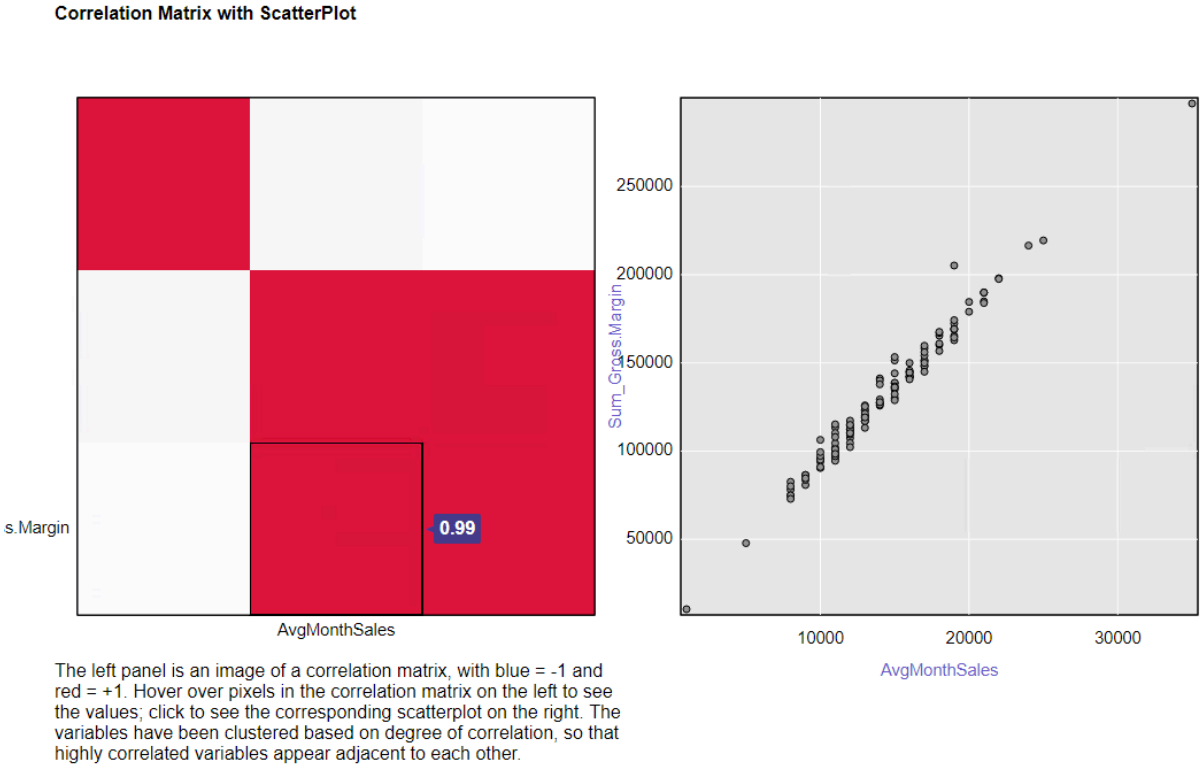
1. **What control variables should be considered? Note: Only consider variables in the RoundRoastersStore file.**

As the AB controls tool uses **numeric measures** to match control to treatment unites, in the RoundRoastersStore file should be considered following variables:

- Square feet
- Average Monthly Sales

2. **What is the correlation between your each potential control variable and your performance metric?**

I calculated correlation between other numeric measures from RoundRoastersStore file and the performance metric (gross margin) with the Assosiation Analysis tool.



Pearson Correlation Analysis

Full Correlation Matrix

	Sq_Ft	AvgMonthSales	Sum_Gross.Margin
Sq_Ft	1.000000	-0.046967	-0.020353
AvgMonthSales	-0.046967	1.000000	0.988219
Sum_Gross.Margin	-0.020353	0.988219	1.000000

AvgMonthSales has highly positive correlation with Gross.Margin and should be used as numeric measure to match control and treatment units.

3. **What control variables will you use to match treatment and control stores?**

- Trend
- Seasonality
- AvgMonthSales

4. **Please fill out the table below with your treatment and control stores pairs:**

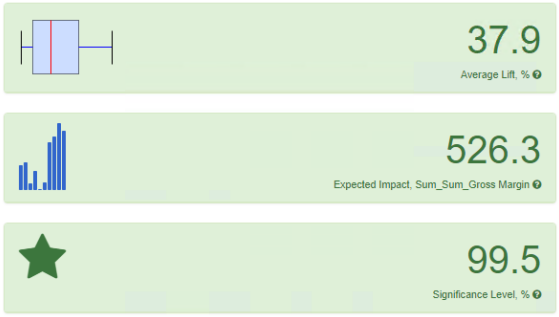
Treatment Store	Control Store 1	Control Store 2
2288	9081	2568
2293	12219	9524
2301	3102	9238
2322	2409	3235
2341	12536	2383
1664	7162	8112
1675	1580	1807
1696	1964	1863
1700	2014	1630
1712	8162	7434

Step 4: Analysis and Writeup

1. **What is your recommendation - Should the company roll out the updated menu to all stores?**

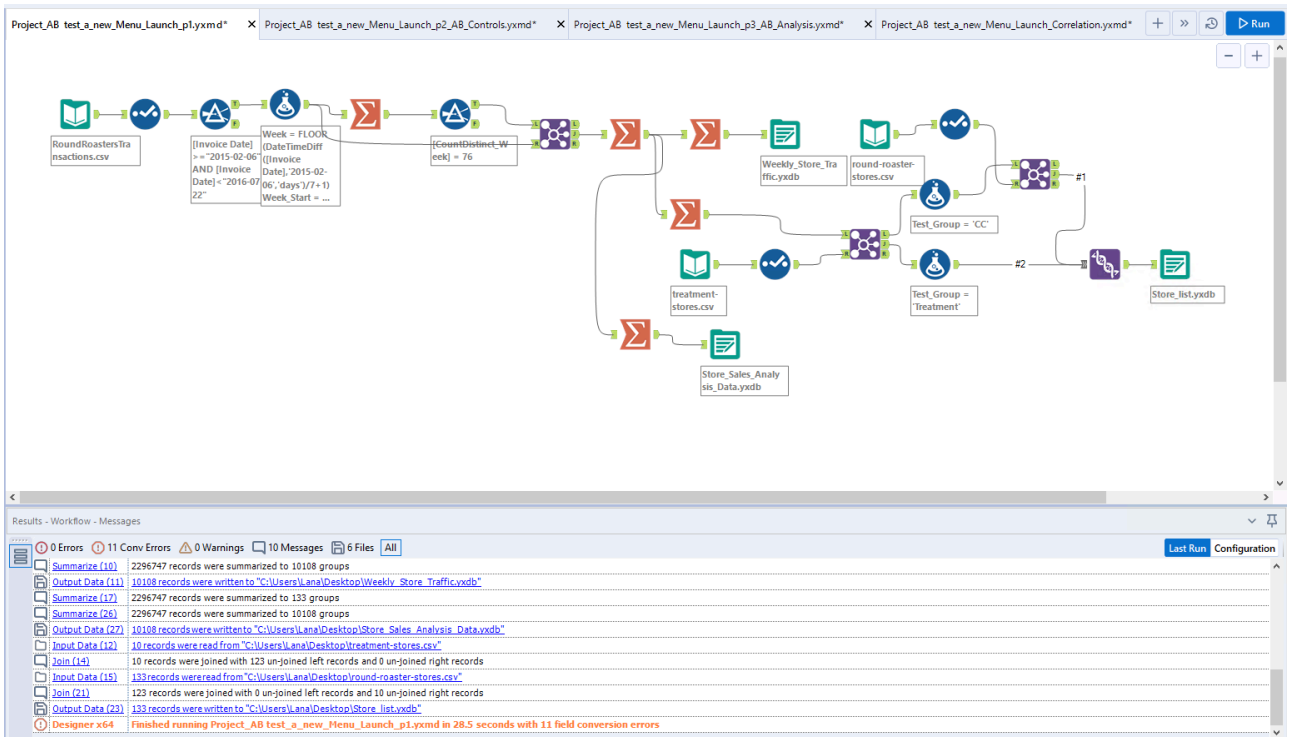
I recommend the company should roll out the updated menu to all stores as there is 37.5% increase in profit growth compared to the comparative period, which is 2, 1 times higher than targeted growth (18%) by the company.

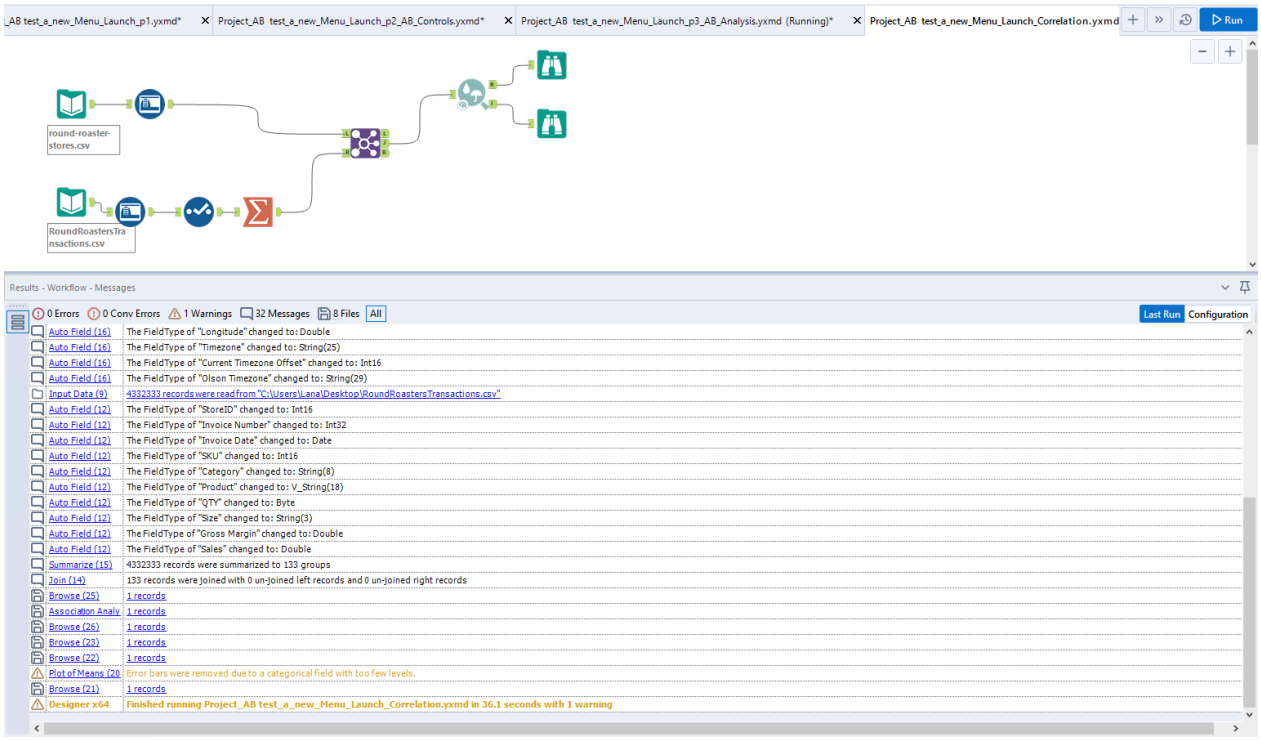
2. What is the lift from the new menu for West and Central regions (include statistical significance)?

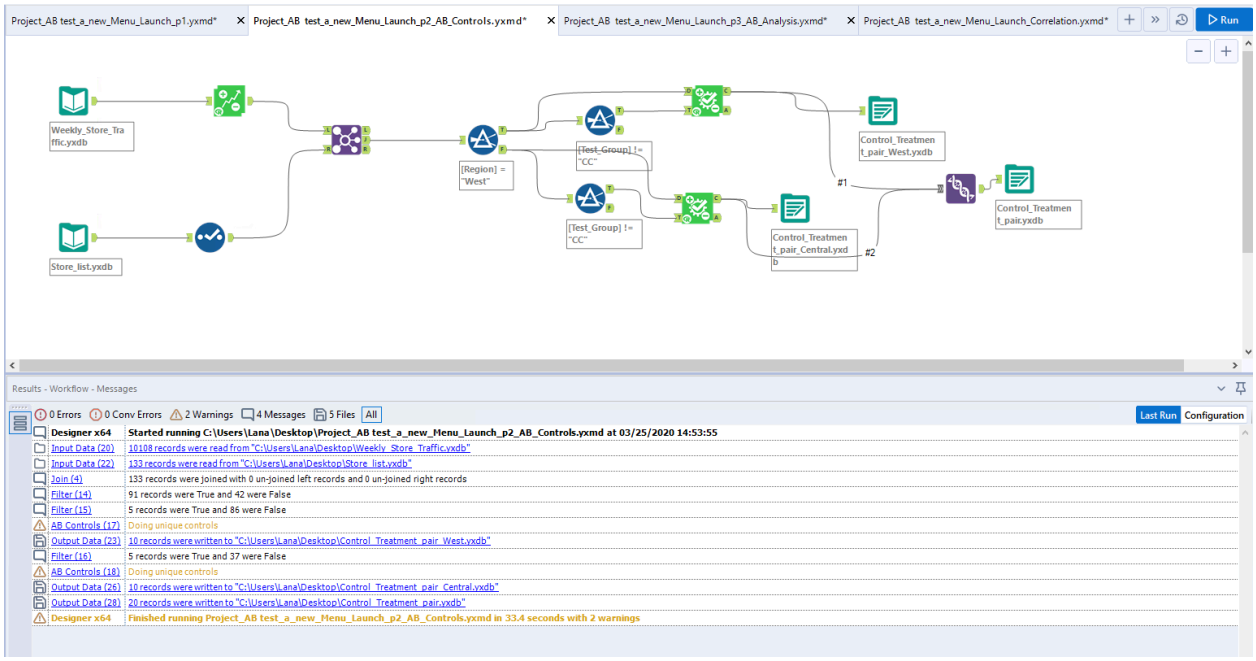
West regions:	Central region:
	

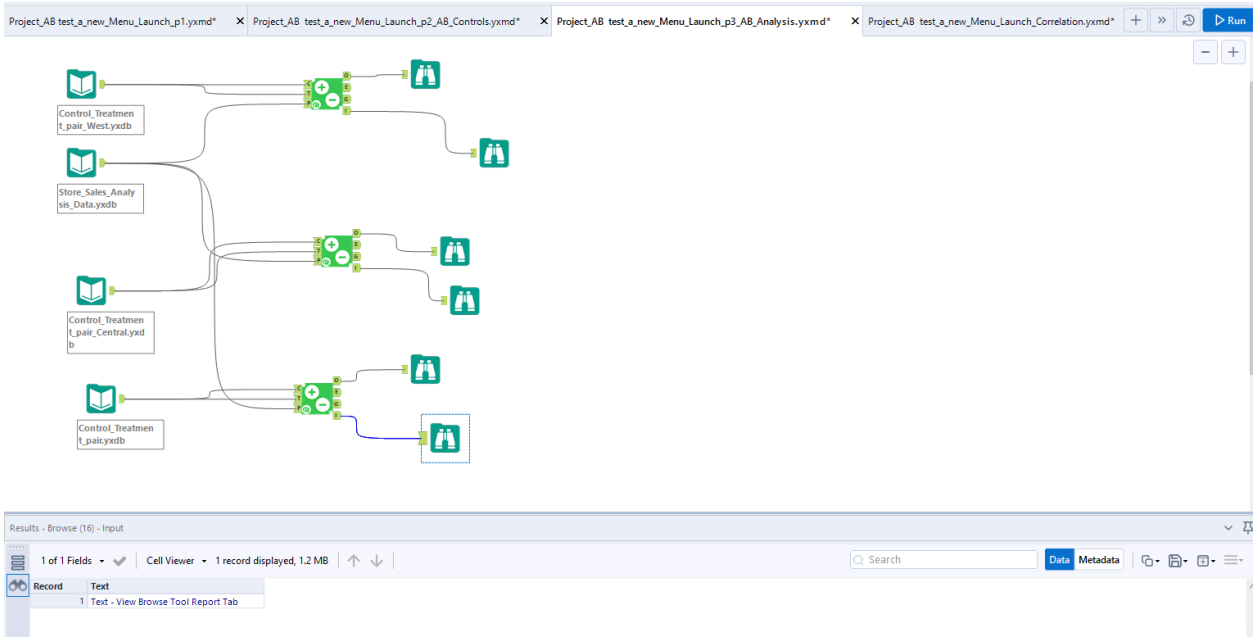
3. What is the lift from the new menu overall?

My Workflows






Project_AB test_a_new_Menu_Launch_p1.yxmd*
Project_AB test_a_new_Menu_Launch_p2_AB_Controls.yxmd*
Project_AB test_a_new_Menu_Launch_p3_AB_Analysis.yxmd*
Project_AB test_a_new_Menu_Launch_Correlation.yxmd*
Run
Weekly_Store_Traffic.yxdb
Store_list.yxdb
[Region] = "West"
[Test_Group] != "CC"
[Test_Group] != "CC"
Control_Treatment_pair_West.yxdb
Control_Treatment_pair_Central.yxdb
Control_Treatment_pair.yxdb
#1
#2
Results - Workflow - Messages
0 Errors
0 Conv Errors
2 Warnings
4 Messages
5 Files
All
Last Run
Configuration
Designer x64
Started running C:\Users\Lana\Desktop\Project_AB test_a_new_Menu_Launch_p2_AB_Controls.yxmd at 03/25/2020 14:53:55
Input Data (20)
10108 records were read from "C:\Users\Lana\Desktop\Weekly_Store_Traffic.yxdb"
Input Data (22)
133 records were read from "C:\Users\Lana\Desktop\Store_list.yxdb"
Join (4)
133 records were joined with 0 un-joined left records and 0 un-joined right records
Filter (14)
91 records were True and 42 were False
Filter (15)
5 records were True and 86 were False
AB Controls (17)
Doing unique controls
Output Data (23)
10 records were written to "C:\Users\Lana\Desktop\Control_Treatment_pair_West.yxdb"
Filter (16)
5 records were True and 37 were False
AB Controls (18)
Doing unique controls
Output Data (26)
10 records were written to "C:\Users\Lana\Desktop\Control_Treatment_pair_Central.yxdb"
Output Data (28)
20 records were written to "C:\Users\Lana\Desktop\Control_Treatment_pair.yxdb"
Designer x64
Finished running Project_AB test_a_new_Menu_Launch_p2_AB_Controls.yxmd in 33.4 seconds with 2 warnings


Project_AB test_a_new_Menu_Launch_p1.yxmd*
Project_AB test_a_new_Menu_Launch_p2_AB_Controls.yxmd*
Project_AB test_a_new_Menu_Launch_p3_AB_Analysis.yxmd*
Project_AB test_a_new_Menu_Launch_Correlation.yxmd*
Run
Control_Treatment_pair_West.yxdb
Store_Sales_Analysis_Data.yxdb
Control_Treatment_pair_Central.yxdb
Control_Treatment_pair.yxdb
Results - Browse (16) - Input
1 of 1 Fields
Cell Viewer
1 record displayed, 1.2 MB
Search
Data
Metadata
Record
Text
1
Text - View Browse Tool Report Tab