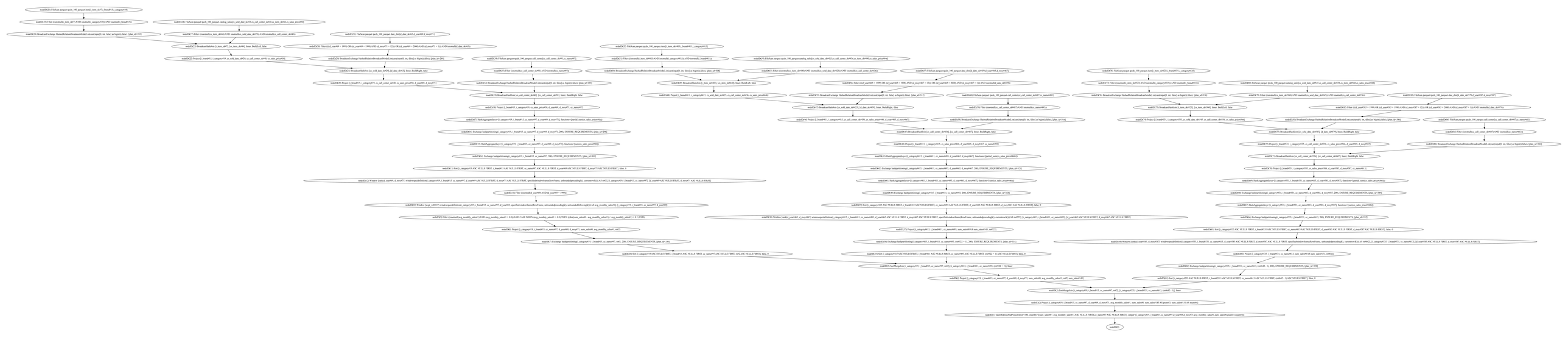

nodeID(0)
nodeID(1) TakeOrderedAndProject(limit=100, orderBy=[(sum_sales#0 - avg_monthly_sales#1) ASC NULLS FIRST,cc_name#97 ASC NULLS FIRST], output=[i_category#19,i_brand#15,cc_name#97,d_year#69,d_moy#71,avg_monthly_sales#1,sum_sales#0,psum#3,nsum#4])
nodeID(2) Project [i_category#19, i_brand#15, cc_name#97, d_year#69, d_moy#71, avg_monthly_sales#1, sum_sales#0, sum_sales#143 AS psum#3, sum_sales#151 AS nsum#4]
nodeID(3) SortMergeJoin [i_category#19, i_brand#15, cc_name#97, rn#2], [i_category#535, i_brand#531, cc_name#613, (rn#642 - 1)], Inner
nodeID(4) Project [i_category#19, i_brand#15, cc_name#97, d_year#69, d_moy#71, sum_sales#0, avg_monthly_sales#1, rn#2, sum_sales#143]
nodeID(5) SortMergeJoin [i_category#19, i_brand#15, cc_name#97, rn#2], [i_category#415, i_brand#411, cc_name#493, (rn#522 + 1)], Inner
nodeID(6) Sort [i_category#19 ASC NULLS FIRST, i_brand#15 ASC NULLS FIRST, cc_name#97 ASC NULLS FIRST, rn#2 ASC NULLS FIRST], false, 0
nodeID(7) Exchange hashpartitioning(i_category#19, i_brand#15, cc_name#97, rn#2, 200), ENSURE_REQUIREMENTS, [plan_id=330]
nodeID(8) Project [i_category#19, i_brand#15, cc_name#97, d_year#69, d_moy#71, sum_sales#0, avg_monthly_sales#1, rn#2]
nodeID(9) Filter ((isnotnull(avg_monthly_sales#1) AND (avg_monthly_sales#1 > 0.0)) AND CASE WHEN (avg_monthly_sales#1 > 0.0) THEN ((abs((sum_sales#0 - avg_monthly_sales#1)) / avg_monthly_sales#1) > 0.1) END)
nodeID(10) Window [avg(_w0#137) windowspecdefinition(i_category#19, i_brand#15, cc_name#97, d_year#69, specifiedwindowframe(RowFrame, unboundedpreceding$(), unboundedfollowing$())) AS avg_monthly_sales#1], [i_category#19, i_brand#15, cc_name#97, d_year#69]
nodeID(11) Filter (isnotnull(d_year#69) AND (d_year#69 = 1999))
nodeID(12) Window [rank(d_year#69, d_moy#71) windowspecdefinition(i_category#19, i_brand#15, cc_name#97, d_year#69 ASC NULLS FIRST, d_moy#71 ASC NULLS FIRST, specifiedwindowframe(RowFrame, unboundedpreceding$(), currentrow$())) AS rn#2], [i_category#19, i_brand#15, cc_name#97], [d_year#69 ASC NULLS FIRST, d_moy#71 ASC NULLS FIRST]
nodeID(13) Sort [i_category#19 ASC NULLS FIRST, i_brand#15 ASC NULLS FIRST, cc_name#97 ASC NULLS FIRST, d_year#69 ASC NULLS FIRST, d_moy#71 ASC NULLS FIRST], false, 0
nodeID(14) Exchange hashpartitioning(i_category#19, i_brand#15, cc_name#97, 200), ENSURE_REQUIREMENTS, [plan_id=301]
nodeID(15) HashAggregate(keys=[i_category#19, i_brand#15, cc_name#97, d_year#69, d_moy#71], functions=[sum(cs_sales_price#50)])
nodeID(16) Exchange hashpartitioning(i_category#19, i_brand#15, cc_name#97, d_year#69, d_moy#71, 200), ENSURE_REQUIREMENTS, [plan_id=298]
nodeID(17) HashAggregate(keys=[i_category#19, i_brand#15, cc_name#97, d_year#69, d_moy#71], functions=[partial_sum(cs_sales_price#50)])
nodeID(18) Project [i_brand#15, i_category#19, cs_sales_price#50, d_year#69, d_moy#71, cc_name#97]
nodeID(19) BroadcastHashJoin [cs_call_center_sk#40], [cc_call_center_sk#91], Inner, BuildRight, false
nodeID(20) Project [i_brand#15, i_category#19, cs_call_center_sk#40, cs_sales_price#50, d_year#69, d_moy#71]
nodeID(21) BroadcastHashJoin [cs_sold_date_sk#29], [d_date_sk#63], Inner, BuildRight, false
nodeID(22) Project [i_brand#15, i_category#19, cs_sold_date_sk#29, cs_call_center_sk#40, cs_sales_price#50]
nodeID(23) BroadcastHashJoin [i_item_sk#7], [cs_item_sk#44], Inner, BuildLeft, false
nodeID(24) BroadcastExchange HashedRelationBroadcastMode(List(cast(input[0, int, false] as bigint)),false), [plan_id=285]
nodeID(25) Filter ((isnotnull(i_item_sk#7) AND isnotnull(i_category#19)) AND isnotnull(i_brand#15))
nodeID(26) FileScan parquet tpcds_100_parquet.item[i_item_sk#7,i_brand#15,i_category#19]
nodeID(27) Filter ((isnotnull(cs_item_sk#44) AND isnotnull(cs_sold_date_sk#29)) AND isnotnull(cs_call_center_sk#40))
nodeID(28) FileScan parquet tpcds_100_parquet.catalog_sales[cs_sold_date_sk#29,cs_call_center_sk#40,cs_item_sk#44,cs_sales_price#50]
nodeID(29) BroadcastExchange HashedRelationBroadcastMode(List(cast(input[0, int, false] as bigint)),false), [plan_id=289]
nodeID(30) Filter ((((d_year#69 = 1999) OR ((d_year#69 = 1998) AND (d_moy#71 = 12))) OR ((d_year#69 = 2000) AND (d_moy#71 = 1))) AND isnotnull(d_date_sk#63))
nodeID(31) FileScan parquet tpcds_100_parquet.date_dim[d_date_sk#63,d_year#69,d_moy#71]
nodeID(32) BroadcastExchange HashedRelationBroadcastMode(List(cast(input[0, int, false] as bigint)),false), [plan_id=293]
nodeID(33) Filter (isnotnull(cc_call_center_sk#91) AND isnotnull(cc_name#97))
nodeID(34) FileScan parquet tpcds_100_parquet.call_center[cc_call_center_sk#91,cc_name#97]
nodeID(35) Sort [i_category#415 ASC NULLS FIRST, i_brand#411 ASC NULLS FIRST, cc_name#493 ASC NULLS FIRST, (rn#522 + 1) ASC NULLS FIRST], false, 0
nodeID(36) Exchange hashpartitioning(i_category#415, i_brand#411, cc_name#493, (rn#522 + 1), 200), ENSURE_REQUIREMENTS, [plan_id=331]
nodeID(37) Project [i_category#415, i_brand#411, cc_name#493, sum_sales#0 AS sum_sales#143, rn#522]
nodeID(38) Window [rank(d_year#465, d_moy#467) windowspecdefinition(i_category#415, i_brand#411, cc_name#493, d_year#465 ASC NULLS FIRST, d_moy#467 ASC NULLS FIRST, specifiedwindowframe(RowFrame, unboundedpreceding$(), currentrow$())) AS rn#522], [i_category#415, i_brand#411, cc_name#493], [d_year#465 ASC NULLS FIRST, d_moy#467 ASC NULLS FIRST]
nodeID(39) Sort [i_category#415 ASC NULLS FIRST, i_brand#411 ASC NULLS FIRST, cc_name#493 ASC NULLS FIRST, d_year#465 ASC NULLS FIRST, d_moy#467 ASC NULLS FIRST], false, 0
nodeID(40) Exchange hashpartitioning(i_category#415, i_brand#411, cc_name#493, 200), ENSURE_REQUIREMENTS, [plan_id=324]
nodeID(41) HashAggregate(keys=[i_category#415, i_brand#411, cc_name#493, d_year#465, d_moy#467], functions=[sum(cs_sales_price#446)])
nodeID(42) Exchange hashpartitioning(i_category#415, i_brand#411, cc_name#493, d_year#465, d_moy#467, 200), ENSURE_REQUIREMENTS, [plan_id=321]
nodeID(43) HashAggregate(keys=[i_category#415, i_brand#411, cc_name#493, d_year#465, d_moy#467], functions=[partial_sum(cs_sales_price#446)])
nodeID(44) Project [i_brand#411, i_category#415, cs_sales_price#446, d_year#465, d_moy#467, cc_name#493]
nodeID(45) BroadcastHashJoin [cs_call_center_sk#436], [cc_call_center_sk#487], Inner, BuildRight, false
nodeID(46) Project [i_brand#411, i_category#415, cs_call_center_sk#436, cs_sales_price#446, d_year#465, d_moy#467]
nodeID(47) BroadcastHashJoin [cs_sold_date_sk#425], [d_date_sk#459], Inner, BuildRight, false
nodeID(48) Project [i_brand#411, i_category#415, cs_sold_date_sk#425, cs_call_center_sk#436, cs_sales_price#446]
nodeID(49) BroadcastHashJoin [i_item_sk#403], [cs_item_sk#440], Inner, BuildLeft, false
nodeID(50) BroadcastExchange HashedRelationBroadcastMode(List(cast(input[0, int, false] as bigint)),false), [plan_id=308]
nodeID(51) Filter ((isnotnull(i_item_sk#403) AND isnotnull(i_category#415)) AND isnotnull(i_brand#411))
nodeID(52) FileScan parquet tpcds_100_parquet.item[i_item_sk#403,i_brand#411,i_category#415]
nodeID(53) Filter ((isnotnull(cs_item_sk#440) AND isnotnull(cs_sold_date_sk#425)) AND isnotnull(cs_call_center_sk#436))
nodeID(54) FileScan parquet tpcds_100_parquet.catalog_sales[cs_sold_date_sk#425,cs_call_center_sk#436,cs_item_sk#440,cs_sales_price#446]
nodeID(55) BroadcastExchange HashedRelationBroadcastMode(List(cast(input[0, int, false] as bigint)),false), [plan_id=312]
nodeID(56) Filter ((((d_year#465 = 1999) OR ((d_year#465 = 1998) AND (d_moy#467 = 12))) OR ((d_year#465 = 2000) AND (d_moy#467 = 1))) AND isnotnull(d_date_sk#459))
nodeID(57) FileScan parquet tpcds_100_parquet.date_dim[d_date_sk#459,d_year#465,d_moy#467]
nodeID(58) BroadcastExchange HashedRelationBroadcastMode(List(cast(input[0, int, false] as bigint)),false), [plan_id=316]
nodeID(59) Filter (isnotnull(cc_call_center_sk#487) AND isnotnull(cc_name#493))
nodeID(60) FileScan parquet tpcds_100_parquet.call_center[cc_call_center_sk#487,cc_name#493]
nodeID(61) Sort [i_category#535 ASC NULLS FIRST, i_brand#531 ASC NULLS FIRST, cc_name#613 ASC NULLS FIRST, (rn#642 - 1) ASC NULLS FIRST], false, 0
nodeID(62) Exchange hashpartitioning(i_category#535, i_brand#531, cc_name#613, (rn#642 - 1), 200), ENSURE_REQUIREMENTS, [plan_id=358]
nodeID(63) Project [i_category#535, i_brand#531, cc_name#613, sum_sales#0 AS sum_sales#151, rn#642]
nodeID(64) Window [rank(d_year#585, d_moy#587) windowspecdefinition(i_category#535, i_brand#531, cc_name#613, d_year#585 ASC NULLS FIRST, d_moy#587 ASC NULLS FIRST, specifiedwindowframe(RowFrame, unboundedpreceding$(), currentrow$())) AS rn#642], [i_category#535, i_brand#531, cc_name#613], [d_year#585 ASC NULLS FIRST, d_moy#587 ASC NULLS FIRST]
nodeID(65) Sort [i_category#535 ASC NULLS FIRST, i_brand#531 ASC NULLS FIRST, cc_name#613 ASC NULLS FIRST, d_year#585 ASC NULLS FIRST, d_moy#587 ASC NULLS FIRST], false, 0
nodeID(66) Exchange hashpartitioning(i_category#535, i_brand#531, cc_name#613, 200), ENSURE_REQUIREMENTS, [plan_id=352]
nodeID(67) HashAggregate(keys=[i_category#535, i_brand#531, cc_name#613, d_year#585, d_moy#587], functions=[sum(cs_sales_price#566)])
nodeID(68) Exchange hashpartitioning(i_category#535, i_brand#531, cc_name#613, d_year#585, d_moy#587, 200), ENSURE_REQUIREMENTS, [plan_id=349]
nodeID(69) HashAggregate(keys=[i_category#535, i_brand#531, cc_name#613, d_year#585, d_moy#587], functions=[partial_sum(cs_sales_price#566)])
nodeID(70) Project [i_brand#531, i_category#535, cs_sales_price#566, d_year#585, d_moy#587, cc_name#613]
nodeID(71) BroadcastHashJoin [cs_call_center_sk#556], [cc_call_center_sk#607], Inner, BuildRight, false
nodeID(72) Project [i_brand#531, i_category#535, cs_call_center_sk#556, cs_sales_price#566, d_year#585, d_moy#587]
nodeID(73) BroadcastHashJoin [cs_sold_date_sk#545], [d_date_sk#579], Inner, BuildRight, false
nodeID(74) Project [i_brand#531, i_category#535, cs_sold_date_sk#545, cs_call_center_sk#556, cs_sales_price#566]
nodeID(75) BroadcastHashJoin [i_item_sk#523], [cs_item_sk#560], Inner, BuildLeft, false
nodeID(76) BroadcastExchange HashedRelationBroadcastMode(List(cast(input[0, int, false] as bigint)),false), [plan_id=336]
nodeID(77) Filter ((isnotnull(i_item_sk#523) AND isnotnull(i_category#535)) AND isnotnull(i_brand#531))
nodeID(78) FileScan parquet tpcds_100_parquet.item[i_item_sk#523,i_brand#531,i_category#535]
nodeID(79) Filter ((isnotnull(cs_item_sk#560) AND isnotnull(cs_sold_date_sk#545)) AND isnotnull(cs_call_center_sk#556))
nodeID(80) FileScan parquet tpcds_100_parquet.catalog_sales[cs_sold_date_sk#545,cs_call_center_sk#556,cs_item_sk#560,cs_sales_price#566]
nodeID(81) BroadcastExchange HashedRelationBroadcastMode(List(cast(input[0, int, false] as bigint)),false), [plan_id=340]
nodeID(82) Filter ((((d_year#585 = 1999) OR ((d_year#585 = 1998) AND (d_moy#587 = 12))) OR ((d_year#585 = 2000) AND (d_moy#587 = 1))) AND isnotnull(d_date_sk#579))
nodeID(83) FileScan parquet tpcds_100_parquet.date_dim[d_date_sk#579,d_year#585,d_moy#587]
nodeID(84) BroadcastExchange HashedRelationBroadcastMode(List(cast(input[0, int, false] as bigint)),false), [plan_id=344]
nodeID(85) Filter (isnotnull(cc_call_center_sk#607) AND isnotnull(cc_name#613))
nodeID(86) FileScan parquet tpcds_100_parquet.call_center[cc_call_center_sk#607,cc_name#613]