```
nodeID(24) Filter ((isnotnull(i_item_sk#7) AND isnotnull(i_category#19)) AND isnotnull(i_brand#15)) nodeID(27) FileScan parquet tpcds_500_parquet.catalog_sales[cs_sold_date_sk#29,cs_call_center_sk#40,cs_item_sk#44,cs_sales_price#50
nodeID(23) BroadcastExchange HashedRelationBroadcastMode(List(cast(input[0, int, false] as bigint)),false), [plan_id=285] nodeID(26) Filter ((isnotnull(cs_item_sk#44) AND isnotnull(cs_sold_date_sk#29)) AND isnotnull(cs_call_center_sk#40))
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   nodeID(30) FileScan parquet tpcds_500_parquet.date_dim[d_date_sk#63,d_year#69,d_moy#71
                                                                                                                                                                                                                                                                   nodeID(22) BroadcastHashJoin [i_item_sk#7], [cs_item_sk#44], Inner, BuildLeft, false nodeID(29) Filter ((((d_year#69 = 1998) AND (d_moy#71 = 12))) OR ((d_year#69 = 2000) AND (d_year#69 = 2000) 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           nodeID(51) FileScan parquet tpcds_500_parquet.item[i_item_sk#403,i_brand#411,i_category#415
                                                                                                                                                                                                                                     nodeID(21) Project [i_brand#15, i_category#19, cs_sold_date_sk#29, cs_call_center_sk#403) AND isnotnull(i_brand#411)) nodeID(53) FileScan parquet tpcds_500_parquet.catalog_sales[cs_sold_date_sk#25,cs_call_center_sk#403) AND isnotnull(i_brand#411)) nodeID(53) FileScan parquet tpcds_500_parquet.catalog_sales[cs_sold_date_sk#425,cs_call_center_sk#403) AND isnotnull(i_brand#411)) nodeID(53) FileScan parquet tpcds_500_parquet.catalog_sales[cs_sold_date_sk#425,cs_call_center_sk#403) AND isnotnull(i_brand#411)) nodeID(53) FileScan parquet tpcds_500_parquet.catalog_sales[cs_sold_date_sk#425,cs_call_center_sk#403) AND isnotnull(i_brand#411)) nodeID(53) FileScan parquet tpcds_500_parquet.catalog_sales[cs_sold_date_sk#425,cs_call_center_sk#403,cs_sales_price#404] nodeID(50) Files(can parquet tpcds_500_parquet.catalog_sales[cs_sold_date_sk#425,cs_call_center_sk#403,cs_sales_price#404] nodeID(50) Files(can parquet tpcds_500_parquet.catalog_sales[cs_sold_date_sk#425,cs_call_center_sk#403,cs_sales_price#404] nodeID(50) Files(can parquet tpcds_500_parquet.catalog_sales[cs_sold_date_sk#403,cs_sales_price#404] nodeID(50) Files(can parquet tpcds_500_parquet.catalog_sales[cs_sold_date_sk#403,cs_sales_price#404] nodeID(50) Files(can parquet tpcds_500_parquet.catalog_sales[cs_sold_date_sk#403,cs_sales_price#404] nodeID(50) Files(can parquet tpcds_500_parquet.catalog_sales[cs_sold_date_sk#403,cs_sales_price#404] nodeID(50) Files(can parquet.catalog_sales[cs_sold_date_sk#403,cs_sales_price#404] nodeID(50) Files(can parquet.catalog_sales[cs_sold_d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  nodeID(20) BroadcastHashJoin [cs_sold_date_sk#29], [d_date_sk#63], Inner, BuildRight, false
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       nodeID(77) FileScan parquet tpcds_500_parquet.item[i_item_sk#523,i_brand#531,i_category#535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           nodeID(19) Project [i_brand#15, i_category#19, cs_call_center_sk#40, cs_sales_price#50, d_year#69, d_moy#71] nodeID(31) BroadcastExchange HashedRelationBroadcastMode(List(cast(input[0, int, false] as bigint)),false), [plan_id=293]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     nodeID(48) BroadcastHashJoin [i_item_sk#403], [cs_item_sk#440], Inner, BuildLeft, false
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       nodeID(76) Filter ((isnotnull(i_item_sk#523) AND isnotnull(i_category#535)) AND isnotnull(i_brand#531)) — nodeID(79) FileScan parquet tpcds_500_parquet.catalog_sales[cs_sold_date_sk#545,cs_call_center_sk#556,cs_item_sk#560,cs_sales_price#566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         nodeID(55) 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(18) BroadcastHashJoin [cs_call_center_sk#40], [cc_call_center_sk#91], Inner, BuildRight, false
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       nodeID(79) FileScan parquet tpcds_500_parquet.call_center_sk#487,cc_name#493 nodeID(79) FileScan parquet tpcds_500_parquet.call_center_sk#487,cc_name#493 nodeID(79) FileScan parquet tpcds_500_parquet.call_center_sk#487,cc_name#493 nodeID(79) FileScan parquet tpcds_500_parquet.call_center_sk#560) AND isnotnull(cs_item_sk#560) And isnot
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                nodeID(17) Project [i_brand#15, i_category#19, cs_sales_price#50, d_year#69, d_moy#71, cc_name#97]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              nodeID(58) Filter (isnotnull(cc_call_center_sk#487) AND isnotnull(cc_name#493))
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      nodeID(81) 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(46) BroadcastHashJoin [cs_sold_date_sk#425], [d_date_sk#459], Inner, BuildRight, false
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     nodeID(74) BroadcastHashJoin [i_item_sk#523], [cs_item_sk#560], Inner, BuildLeft, false
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  nodeID(45) Project [i_brand#411, i_category#415, cs_call_center_sk#436, cs_sales_price#446, d_year#465, d_moy#467] nodeID(57) BroadcastExchange HashedRelationBroadcastMode(List(cast(input[0, int, false] as bigint)),false), [plan_id=316]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   nodeID(73) Project [i_brand#531, i_category#535, cs_sold_date_sk#545, cs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   nodeID(16) 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(72) BroadcastHashJoin [cs_sold_date_sk#545], [d_date_sk#579], Inner, BuildRight, false
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       nodeID(84) Filter (isnotnull(cc_call_center_sk#607) AND isnotnull(cc_name#613))
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    nodeID(15) Exchange hashpartitioning(i_category#19, i_brand#15, cc_name#97, d_year#69, d_moy#71, 200), ENSURE_REQUIREMENTS, [plan_id=298]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               nodeID(44) BroadcastHashJoin [cs_call_center_sk#436], [cc_call_center_sk#487], Inner, BuildRight, false
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       nodeID(43) Project [i_brand#411, i_category#415, cs_sales_price#446, d_year#465, d_moy#467, cc_name#493]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       nodeID(83) BroadcastExchange HashedRelationBroadcastMode(List(cast(input[0, int, false] as bigint)),false), [plan_id=344]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            nodeID(14) HashAggregate(keys=[i_category#19, i_brand#15, cc_name#97, d_year#69, d_moy#71], functions=[sum(cs_sales_price#50)])
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       nodeID(71) Project [i_brand#531, i_category#535, cs_call_center_sk#556, cs_sales_price#566, d_year#585, d_moy#587]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    nodeID(70) BroadcastHashJoin [cs_call_center_sk#556], [cc_call_center_sk#607], Inner, BuildRight, false
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                nodeID(42) 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(13) Exchange hashpartitioning(i_category#19, i_brand#15, cc_name#97, 200), ENSURE_REQUIREMENTS, [plan_id=301]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         nodeID(69) Project [i_brand#531, i_category#535, cs_sales_price#566, d_year#585, d_moy#587, cc_name#613]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     nodeID(41) Exchange hashpartitioning(i_category#415, i_brand#411, cc_name#493, d_year#465, d_moy#467, 200), ENSURE_REQUIREMENTS, [plan_id=321]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 nodeID(12) 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(68) 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(40) HashAggregate(keys=[i_category#415, i_brand#411, cc_name#493, d_year#465, d_moy#467], functions=[sum(cs_sales_price#446)])
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            nodeID(11) 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 NUL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            nodeID(10) Filter (isnotnull(d_year#69) AND (d_year#69 = 1999))
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           nodeID(67) Exchange hashpartitioning(i_category#535, i_brand#531, cc_name#613, d_year#585, d_moy#587, 200), ENSURE_REQUIREMENTS, [plan_id=349]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    nodeID(39) Exchange hashpartitioning(i_category#415, i_brand#411, cc_name#493, 200), ENSURE_REQUIREMENTS, [plan_id=324]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           nodeID(38) 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(66) HashAggregate(keys=[i_category#535, i_brand#531, cc_name#613, d_year#585, d_moy#587], functions=[sum(cs_sales_price#566)])
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          nodeID(9) Window [avg(_w0#137) windowspecdefinition(i_category#19, i_brand#15, cc_name#97, d_year#69, specifiedwindowframe(RowFrame, unboundedfollowing$())) AS avg_monthly_sales#1], [i_category#19, i_brand#15, cc_name#97, d_year#69]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           nodeID(65) Exchange hashpartitioning(i_category#535, i_brand#531, cc_name#613, 200), ENSURE_REQUIREMENTS, [plan_id=352]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     nodeID(8) 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(37) 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 NULL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      nodeID(36) Project [i_category#415, i_brand#411, cc_name#493, sum_sales#0 AS sum_sales#143, rn#522]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     nodeID(7) 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(64) 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(6) Exchange hashpartitioning(i_category#19, i_brand#15, cc_name#97, rn#2, 200), ENSURE_REQUIREMENTS, [plan_id=330]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           nodeID(35) Exchange hashpartitioning(i_category#415, i_brand#411, cc_name#493, (rn#522 + 1), 200), ENSURE_REQUIREMENTS, [plan_id=331]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             nodeID(63) 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 NULL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              nodeID(62) Project [i_category#535, i_brand#531, cc_name#613, sum_sales#0 AS sum_sales#151, rn#642]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 nodeID(5) 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(34) 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(4) 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(61) Exchange hashpartitioning(i_category#535, i_brand#531, cc_name#613, (rn#642 - 1), 200), ENSURE_REQUIREMENTS, [plan_id=358]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  nodeID(3) 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(60) 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(2) 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(1) 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]
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nodeID(25) FileScan parquet tpcds\_500\_parquet.item[i\_item\_sk#7,i\_brand#15,i\_category#19