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QUERY PLAN
-----
Merge Join (cost=0.62..1351.74 rows=8893 width=302) (actual time=0.130..45.729 rows=8897 loops=1)
  Merge Cond: (c.customerid = o.customerid)
    -> Index Scan using customers_pkey on customers c (cost=0.29..845.29 rows=20000 width=268) (actual time=0.032..10.950 rows=19997 loops=1)
    -> Index Scan using ix_order_custid on orders o (cost=0.29..345.29 rows=8893 width=30) (actual time=0.070..19.943 rows=8897 loops=1)
      Filter: (netamount > '100'::numeric)
      Rows Removed by Filter: 3103
Planning Time: 3.843 ms
Execution Time: 52.293 ms

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Listing 1: merge join

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QUERY PLAN
-----
Sort (cost=7224521.31..7224543.54 rows=8893 width=302) (actual time=111918.890..111919.623 rows=8897 loops=1)
  Sort Key: c.customerid
  Sort Method: quicksort Memory: 2817kB
  -> Nested Loop (cost=0.00..7223938.00 rows=8893 width=302) (actual time=205.686..111816.823 rows=8897 loops=1)
    Join Filter: (c.customerid = o.customerid)
    Rows Removed by Join Filter: 177931103
    -> Seq Scan on customers c (cost=0.00..688.00 rows=20000 width=268) (actual time=8.168..31.380 rows=20000 loops=1)
    -> Seq Scan on orders o (cost=0.00..250.00 rows=8893 width=30) (actual time=0.006..4.604 rows=8897 loops=20000)
      Filter: (netamount > '100'::numeric)
      Rows Removed by Filter: 3103
Planning Time: 0.777 ms
Execution Time: 111925.339 ms

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Listing 2: nested loop + sort

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QUERY PLAN
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Sort (cost=1575.48..1590.32 rows=5934 width=304) (actual time=33.584..34.200 rows=5936 loops=1)
  Sort Key: o.netamount
  Sort Method: quicksort Memory: 1816kB
  -> Hash Join (cost=938.00..1203.58 rows=5934 width=304) (actual time=12.335..23.709 rows=5936 loops=1)
    Hash Cond: (o.customerid = c.customerid)
    -> Seq Scan on orders o (cost=0.00..250.00 rows=5934 width=30) (actual time=0.034..5.769 rows=5936 loops=1)
      Filter: (netamount > '200'::numeric)
      Rows Removed by Filter: 6064
    -> Hash (cost=688.00..688.00 rows=20000 width=268) (actual time=12.254..12.254 rows=20000 loops=1)
      Buckets: 32768 Batches: 1 Memory Usage: 4108kB
      -> Seq Scan on customers c (cost=0.00..688.00 rows=20000 width=268) (actual time=0.012..5.910 rows=20000 loops=1)
Planning Time: 1.154 ms
Execution Time: 40.343 ms

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Listing 3: hash join

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QUERY PLAN
-----
Seq Scan on customers c (cost=0.00..788.00 rows=769 width=268) (actual time=0.101..10.838 rows=776 loops=1)
  Filter: ((age < 20) OR (age = 22))
  Rows Removed by Filter: 19224
Planning Time: 0.233 ms
Execution Time: 11.107 ms

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Listing 4: multiple conditions in filter

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QUERY PLAN
-----
Limit (cost=0.00..0.18 rows=10 width=30) (actual time=0.033..0.041 rows=10 loops=1)
  -> Seq Scan on orders (cost=0.00..220.00 rows=12000 width=30) (actual time=0.030..0.034 rows=10 loops=1)
Planning Time: 0.154 ms
Execution Time: 0.414 ms

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Listing 5: limit

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QUERY PLAN
-----
Hash Right Join (cost=938.00..1189.51 rows=20000 width=298) (actual time=10.990..29.612 rows=23004 loops=1)
  Hash Cond: (o.customerid = c.customerid)
  -> Seq Scan on orders o (cost=0.00..220.00 rows=12000 width=30) (actual time=0.010..1.664 rows=12000 loops=1)
  -> Hash (cost=688.00..688.00 rows=20000 width=268) (actual time=10.940..10.940 rows=20000 loops=1)
      Buckets: 32768 Batches: 1 Memory Usage: 4108kB
      -> Seq Scan on customers c (cost=0.00..688.00 rows=20000 width=268) (actual time=0.016..4.918 rows=20000 loops=1)
Planning Time: 0.707 ms
Execution Time: 32.227 ms

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Listing 6: hash right join

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QUERY PLAN
-----
Index Scan using orders_pkey on orders (cost=0.29..2.30 rows=1 width=30) (actual time=1.361..1.366 rows=1 loops=1)
  Index Cond: (orderid = 3)
Planning Time: 0.191 ms
Execution Time: 1.673 ms

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Listing 7: index cond

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QUERY PLAN
-----
Hash Join (cost=22.91..127.58 rows=974 width=500) (actual time=2.509..21.365 rows=2922 loops=1)
  Hash Cond: (a.attrelid = c.oid)
  Join Filter: has_column_privilege(c.oid, a.attnum, 'select'::text)
  -> Seq Scan on pg_attribute a (cost=0.00..96.61 rows=3061 width=238) (actual time=0.022..1.327 rows=2922 loops=1)
  -> Hash (cost=17.96..17.96 rows=396 width=266) (actual time=2.444..2.445 rows=396 loops=1)
      Buckets: 1024 Batches: 1 Memory Usage: 89kB
      -> Seq Scan on pg_class c (cost=0.00..17.96 rows=396 width=266) (actual time=0.024..1.064 rows=396 loops=1)
Planning Time: 0.896 ms
Execution Time: 24.740 ms

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Listing 8: non parenthesized join filter