```
                                                            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
```

Listing 1: merge join

```
                                                            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
```

Listing 2: nested loop + sort

```
                                                            QUERY PLAN
----------------------------------------------------------------------------------------------------------------------
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
```

Listing 3: hash join

```
                                                            QUERY PLAN
-------------------------------------------------------------------------------------------------------------------
Hash Join  (cost=797.61..1070.96 rows=342 width=298) (actual time=23.955..40.346 rows=348 loops=1)
  Hash Cond: (o.customerid = c.customerid)
  -> Seq Scan on orders o  (cost=0.00..250.00 rows=8893 width=30) (actual time=0.032..12.290 rows=8897 loops=1)
        Filter: (netamount > '100'::numeric)
        Rows Removed by Filter: 3103
  -> Hash  (cost=788.00..788.00 rows=769 width=268) (actual time=23.830..23.830 rows=776 loops=1)
        Buckets: 1024  Batches: 1  Memory Usage: 158kB
        -> Seq Scan on customers c  (cost=0.00..788.00 rows=769 width=268) (actual time=0.083..23.204 rows=776 loops=1)
              Filter: ((age < 20) OR (age = 22))
              Rows Removed by Filter: 19224
Planning Time: 1.171 ms
Execution Time: 44.070 ms
```

Listing 4: multiple conditions in filter