

## Exercise 1

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### Before Index Creation:

1. EXPLAIN SELECT \* FROM Customer;

#### QUERY PLAN

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Seq Scan on Customer (cost=0.00..458.00 rows=10000 width=244)

2. EXPLAIN SELECT \* FROM Customer WHERE id < 7000;

#### QUERY PLAN

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Seq Scan on Customer (cost=0.00..483.00 rows=7001 width=244)

Filter: (id < 7000)

3. EXPLAIN SELECT \* FROM Customer WHERE id < 100;

#### QUERY PLAN

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Bitmap Heap Scan on tenk1 (cost=5.07..229.20 rows=101 width=244)

Recheck Cond: (id < 100)

-> Bitmap Index Scan on Customer\_id (cost=0.00..5.04 rows=101 width=0)

Index Cond: (id < 100)

### After index creation:

4. EXPLAIN SELECT \* FROM Customer;

#### QUERY PLAN

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Seq Scan on Customer (cost=0.00..418.00 rows=10000 width=244)

5. EXPLAIN SELECT \* FROM Customer WHERE id < 7000;

#### QUERY PLAN

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Seq Scan on Customer (cost=0.00..483.00 rows=7001 width=244)

Filter: (id < 7000)

6. EXPLAIN SELECT \* FROM Customer WHERE id < 100;

#### QUERY PLAN

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Bitmap Heap Scan on tenk1 (cost=5.07..150.20 rows=101 width=244)

Recheck Cond: (id < 100)

-> Bitmap Index Scan on Customer\_id (cost=0.00..5.04 rows=101 width=0)

Index Cond: (id < 100)

→ After index creation it is faster, as indexing creates an easy search in database