

Lab 07: Database

BEFORE INDEXES

1. Explain Analyze Select name from customer where id < 400 order by id asc;

The screenshot shows a database IDE with a sidebar on the left containing 'Items', 'Queries', and 'History' tabs. Under 'Tables', the 'customer' table is listed. The main window displays the SQL query: `1 EXPLAIN ANALYZE SELECT name from customer where id < 400 order BY id asc;`. Below the query, the 'QUERY PLAN' is shown:

Step	Operation	Cost	Rows	Width	Actual Time	Actual Rows
1	Index Scan using customer_pkey on customer	0.28..31.48	400	18	0.416..0.940	...
2	Index Cond: (id < 400)					
3	Planning Time:	1.204 ms				
4	Execution Time:	1.112 ms				

At the bottom, there are buttons for 'No limit', 'Beautify %i', and 'Run Current'.

2. EXPLAIN ANALYZE SELECT name from customer where id%2 = 0;

The screenshot shows the same database IDE with the SQL query: `1 EXPLAIN ANALYZE SELECT name from customer where id%2 = 0;`. The 'QUERY PLAN' is shown:

Step	Operation	Cost	Rows	Width	Actual Time	Actual Rows
1	Seq Scan on customer	0.00..46.00	5	14	0.103..1.163	rows=500 loops=1
2	Filter: ((id % 2) = 0)					
3	Rows Removed by Filter:	500				
4	Planning Time:	0.507 ms				
5	Execution Time:	1.315 ms				

At the bottom, there are buttons for 'No limit', 'Beautify %i', and 'Run Current'.

3. EXPLAIN ANALYZE SELECT id, review from customer where name = 'Eric Wilson';

The screenshot shows a database IDE with a sidebar on the left containing 'Items', 'Queries', and 'History' tabs. The 'Items' tab is active, showing a search bar and a list of items including 'customer'. The main window is titled 'customer' and 'SQL Query'. It contains the following SQL query:

```
1 EXPLAIN ANALYZE SELECT id, review from customer where name = 'Eric Wilson';
```

Below the query, there is a status bar indicating 'line 1, column 76, location 75'. To the right of the status bar are three buttons: 'No limit', 'Beautify #!l', and 'Run Current'. Below the status bar is a 'QUERY PLAN' section with the following details:

QUERY PLAN	
1	Seq Scan on customer (cost=0.00..43.50 rows=1 width=152) (actual time=0.037..0.495 rows=1 loops=1)
2	Filter: (name = 'Eric Wilson'::text)
3	Rows Removed by Filter: 999
4	Planning Time: 0.208 ms
5	Execution Time: 0.575 ms

WITH INDEX

The screenshot shows a database IDE with a sidebar on the left containing 'Items', 'Queries', and 'History' tabs. The 'Items' tab is active, showing a search bar and a list of items including 'customer'. The main window is titled 'customer' and 'SQL Query'. It contains the following SQL queries:

```
1 CREATE INDEX pk_index On customer(id);  
2 CREATE INDEX name_index on customer(name);
```

1. Explain Analyze Select name from customer where id < 400 order by id asc;

The screenshot shows a database IDE with a sidebar on the left containing 'Items', 'Queries', and 'History' tabs. The 'Items' tab is active, showing a search bar and a list of items including 'customer'. The main window is titled 'customer' and 'SQL Query'. It contains the following SQL query:

```
1 Explain Analyze Select name from customer where id < 400 order by id asc;
```

Below the query, there is a status bar indicating 'line 1, column 74, location 73'. To the right of the status bar are three buttons: 'No limit', 'Beautify #!l', and 'Run Current'. Below the status bar is a 'QUERY PLAN' section with the following details:

QUERY PLAN	
1	Index Scan using pk_index on customer (cost=0.28..31.48 rows=400 width=18) (actual time=0.269..0.801 rows=400 loops=1)
2	Index Cond: (id < 400)
3	Planning Time: 4.944 ms
4	Execution Time: 1.045 ms

2. EXPLAIN ANALYZE SELECT name from customer where id%2 = 0;

customer

SQL Query

```
1 EXPLAIN ANALYZE SELECT name from customer where id%2 = 0;
```

Line 1, column 58, location 57

No limit Beautify %! Run Current

QUERY PLAN	
1	Seq Scan on customer (cost=0.00..46.00 rows=5 width=14) (actual time=0.107..0.960 rows=500 loops=1)
2	Filter: ((id % 2) = 0)
3	Rows Removed by Filter: 500
4	Planning Time: 0.526 ms
5	Execution Time: 1.075 ms

3. EXPLAIN ANALYZE SELECT id, review from customer where name = 'Eric Wilson';

customer

SQL Query

```
1 EXPLAIN ANALYZE SELECT id, review from customer where name = 'Eric Wilson';
```

Line 1, column 76, location 75

No limit Beautify %! Run Current

QUERY PLAN	
1	Index Scan using name_index on customer (cost=0.28..8.29 rows=1 width=152) (actual time=1.238..1.241 rows=1 loops=1)
2	Index Cond: (name = 'Eric Wilson'::text)
3	Planning Time: 1.191 ms
4	Execution Time: 1.504 ms