

Index Declarations

```
sales.pid  
CREATE INDEX sales_product_id ON sales(pid);
```

Settings of data generator

```
int Num_users      =    100000;  
int Num_categories =    200;  
int Num_products   =   10000;  
int Num_sales      =  1000000;
```

Response time after Run Query request

Using the System.nanoTime() function starting from the start of the first query to finishing executing the the last query, the average running time is around 15000000

Index Potential Choice (But not chosen) Log:

These numbers represent the number System.nanoTime() from the end of the last sql query minus the System.nanoTime() from immediately before the first sql query is run. (endTime-startTime)

No Indices:	sales.uid:	users.name	users.state	products.name
704621240	710710466	719721844	732678306	715508681
714662083	717543516	716994881	720283081	711014663
715719038	712153337	710782441	714634780	714480864
710839427	723320088	713360064	725704503	708021699
706676250	717290978	715491982	721714111	720911530

Other Query Potential Log:

Considered using three different queries to get the products (query 1) users/states (query 2) and the 2D matrix of the two (query 3) to get the data that we needed, but instead figured that just doing 2 queries where we combine the users/states query with the 2D matrix query would result in a faster time.