

**Size of the database:**

Users : 1000

Categories: 5000

Products : 100,000

Sales : 1,000,000

**Generate\_report\_customers:**

Without any index and any sales filters : 1157 ms

hash index on sales.uid : 1140 ms

plus hash index on sales pid : 391 ms

With sales filters:

Category	without 984 ms	with above two indexes 94 ms	plus hash index on product.cid 32 ms	
Age	without 1126 ms	with above two indexes 453 ms	plus btree index on users.age 390 ms	
State	without 565 ms	with above two indexes 407 ms	plus hash index on users.state 279 ms	
Category and Age	without 1094 ms	with the above two indexes 109 ms	+users.age 94 ms	+products.cid 30 ms

**Generate\_report\_states:**

Without any index and filters: 1657 ms

hash index on sales.uid : 1600 ms

plus hash index on sales pid : 1579 ms

With sales filters:

Category	without 5344 ms	with above two indexes 5107 ms	plus hash index on product.cid 5062 ms	
State	without 1969 ms	with above two indexes 1813 ms	plus hash index on users.state 1504 ms	