

Heap File Implementation

PROJECT PHASE 1

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Instructions for Code Compilation and Unit Testing\

- Extract the zip file
- Execute the following:
 - make -Bf Makefile (-Bf is for cleaning and the executing the targets)
 - And then execute ./test.out
- Following three options will be prompted
 - Load (read a tpch file and write it out a heap DBFile)
 - Scan (read records from an existing heap DBFile)
 - Scan & filter (read records and filter using a CNF predicate)

Methods implemented in DBFile.cc

DBFile::Create

This function uses the Open method in File.cc to create a database file. If the file is successfully created then we return 1, otherwise 0 is returned.

DBFile::Load

The SuckNextRecord method of the Record class is used to extract each record from the specified file until the end of the file is reached. We're reading the file from the specified location. Then it runs "Add" record repeatedly to read each and every record and save it to the .bin file.

DBFile::Open

This function uses the Open method in File.cc to create to open the existing file. If the file is successfully opened then we return 1, otherwise 0 is returned.

DBFile::MoveFirst

This function makes the pointer to point to the first record pointer in the file by retrieving the first page from the file.

DBFile ::Close

This function will add the last page to the file and deletes the instance of page and file so that there will be no memory leaks

DBFile:: Add

This function consumes the record given in the parameter and adds to the page. If the page is full, the page is added to the file and this record is appended to a new page

DBFile :: GetNext

This function advances the pointer to the record in the page and if all records are read in a page, the pointer will now point to next page. It returns 0 if EOF is reached.

DBFile :: GetNext(&Record literal, CNF &cnf)

This function advances the pointer to the record in the page which satisfies the given literal. It returns 0 if there are no records which satisfies the literal predicate. 1 elsewhere

Test-case Results Snapshots

Query 1 - Region Table

```
lin114-00:~/P1> ./test.out

** IMPORTANT: MAKE SURE THE INFORMATION BELOW IS CORRECT **
catalog location:      catalog
tpch files dir:        /cise/homes/ssshivani/git/tpch-dbggen/
heap files dir:

select test:
  1. load file
  2. scan
  3. scan & filter
  3

select table:
  1. nation
  2. region
  3. customer
  4. part
  5. partsupp
  6. orders
  7. lineitem
  2
Filter with CNF for : region
Enter CNF predicate (when done press ctrl-D):
  (r_name = 'EUROPE')
r_regionkey: [3], r_name: [EUROPE], r_comment: [ly final courts cajole furiously final excuse]
selected 1 recs
lin114-00:~/P1> 
```

Query 2 - Region Table

```
lin114-00:~/P1> ./test.out

** IMPORTANT: MAKE SURE THE INFORMATION BELOW IS CORRECT **
catalog location:      catalog
tpch files dir:        /cise/homes/ssshivani/git/tpch-dbggen/
heap files dir:

select test:
  1. load file
  2. scan
  3. scan & filter
  3

select table:
  1. nation
  2. region
  3. customer
  4. part
  5. partsupp
  6. orders
  7. lineitem
  2
Filter with CNF for : region
Enter CNF predicate (when done press ctrl-D):
  (r_name < 'MIDDLE EAST') AND
  (r_regionkey > 1)
r_regionkey: [2], r_name: [ASIA], r_comment: [ges. thinly even pinto beans ca]
r_regionkey: [3], r_name: [EUROPE], r_comment: [ly final courts cajole furiously final excuse]
selected 2 recs
lin114-00:~/P1> 
```

Query 3 - Nation Table

```
lin114-00:~/Pi> ./test.out
** IMPORTANT: MAKE SURE THE INFORMATION BELOW IS CORRECT **
catalog location: catalog
tpch files dir: /cise/homes/sshivani/git/tpch-dbgem/
heap files dir:

select test:
  1. load file
  2. scan
  3. scan & filter
  3

select table:
  1. nation
  2. region
  3. customer
  4. part
  5. partsupp
  6. orders
  7. lineitem
  1
Filter with CNF for : nation
Enter CNF predicate (when done press ctrl-D):
  (n_regionkey = 3) AND
  (n_nationkey > 10) AND
  (n_name > 'JAPAN')
n_nationkey: [19], n_name: [ROMANIA], n_regionkey: [3], n_comment: [ular asymptotes are about the furious multipliers. express dependencies msg above the ironically ironic account]
n_nationkey: [22], n_name: [RUSSIA], n_regionkey: [3], n_comment: [ requests against the platelets use never according to the quickly regular pint]
n_nationkey: [23], n_name: [UNITED KINGDOM], n_regionkey: [3], n_comment: [eans boost carefully special requests. accounts are. carefull]
selected 3 recs
```

Query 4 - Supplier Table

```
lin114-00:~/Pi> ./test.out
** IMPORTANT: MAKE SURE THE INFORMATION BELOW IS CORRECT **
catalog location: catalog
tpch files dir: /cise/homes/sshivani/git/tpch-dbgem/
heap files dir:

select test:
  1. load file
  2. scan
  3. scan & filter
  3

select table:
  1. nation
  2. region
  3. customer
  4. part
  5. partsupp
  6. orders
  7. lineitem
  8. supplier
  8
Filter with CNF for : supplier
Enter CNF predicate (when done press ctrl-D):
  (s_suppkey < 10)
s_suppkey: [1], s_name: [Supplier#0000000001], s_address: [ N KD4on9OM Ipw3,gf0JB0QDd7tgrzrddZ], s_nationkey: [17], s_phone: [27-918-335-1736], s_acctbal: [5755.94], s_comment: [each slyly above the
careful]
s_suppkey: [2], s_name: [Supplier#0000000002], s_address: [89eJ5ksX3ImxJBvxODC], s_nationkey: [5], s_phone: [15-679-861-2259], s_acctbal: [4032.68], s_comment: [ slyly bold instructions. idle depen
den]
s_suppkey: [3], s_name: [Supplier#0000000003], s_address: [q1,03Pj60;IuUYfuOh18BFTKP5aU9bEV3], s_nationkey: [1], s_phone: [11-383-516-1199], s_acctbal: [4192.4], s_comment: [blithely silent requests
after the express dependencies are sl]
s_suppkey: [4], s_name: [Supplier#0000000004], s_address: [8k7ah4CK8SYQTepmvMkgMwg], s_nationkey: [15], s_phone: [25-843-787-7479], s_acctbal: [4641.08], s_comment: [riously even requests above th
e exp
e suppkey: [5], s_name: [Supplier#0000000005], s_address: [Gcdm2rJrz15glVrc], s_nationkey: [11], s_phone: [21-151-690-3663], s_acctbal: [-283.84], s_comment: [. slyly regular pinto bee]
s_suppkey: [6], s_name: [Supplier#0000000006], s_address: [tQuvms7OnK], s_nationkey: [14], s_phone: [24-696-997-4969], s_acctbal: [1365.79], s_comment: [final accounts. regular dolphins use agains
t the furiously ironic decoys. ]
s_suppkey: [7], s_name: [Supplier#0000000007], s_address: [s,4TcnGB4u06PaSqNBU], s_nationkey: [23], s_phone: [33-999-965-2281], s_acctbal: [6820.35], s_comment: [s unwind silently furiously regul
r courts. final requests are deposits. requests wake quietly blit]
s_suppkey: [8], s_name: [Supplier#0000000008], s_address: [9s4ab8H2fQemafOocY45sR7x06yu0G], s_nationkey: [17], s_phone: [27-498-742-3860], s_acctbal: [7627.85], s_comment: [al pinto beans. asymptote
s hagg1]
s_suppkey: [9], s_name: [Supplier#0000000009], s_address: [1KhUgZegwM3ua7dsYmekYBsK], s_nationkey: [10], s_phone: [28-403-398-8662], s_acctbal: [5302.37], s_comment: [s. unusual, even requests along
the furiously regular pac]
selected 9 recs
lin114-00:~/Pi>
```

Query 5 - Supplier Table

```

3
select table:
 1. nation
 2. region
 3. customer
 4. part
 5. partsupp
 6. orders
 7. linitem
 8. supplier
 8
Filter with CNT for : supplier
Enter EOF predicate (when done press ctrl-D):
  (s_nationkey = 18) AND
  s_acctbal > 10000.00 AND
  i_supplypk < 400
  i_supplypk: [11], s_name: [Supplier#0000000111], s_address: [JfwTs,LzrV, M,9C], s_nationkey: [18], s_phone: [28-613-996-1565], s_acctbal: [3393.08], s_comment: [y ironic packages. slyly ironic accou
  b affix furiously; ironically unusual excuses across the flu]
  s_supplypk: [27], s_name: [Supplier#000000027], s_address: [1CAjCjKwNHUr64xIpzOBKA1NhKfTq], s_nationkey: [18], s_phone: [28-708-999-2028], s_acctbal: [1887.62], s_comment: [s according to the quick
  regular hockey play]
  s_supplypk: [41], s_name: [Supplier#000000041], s_address: [G 1FKHR435 wMKFmyt], s_nationkey: [18], s_phone: [28-739-447-2525], s_acctbal: [6942.67], s_comment: [odolites boost across the furiously
  regular fo]
  s_supplypk: [72], s_name: [Supplier#000000072], s_address: [mKpAJojtawk2a1qV4 ZEBj3PH3wfYq AMBrGq1], s_nationkey: [18], s_phone: [28-113-898-6643], s_acctbal: [7014.5], s_comment: [the theodolites su
  ate furiously about the regularly e]
  s_supplypk: [100], s_name: [Supplier#000000099], s_address: [ASpKTh2BnZrtT0,MnVp9H], s_nationkey: [18], s_phone: [28-558-264-1202], s_acctbal: [2860.13], s_comment: [options: quickly f
  ul courts wake quietly foxes. packages hag]
  s_supplypk: [117], s_name: [Supplier#000000117], s_address: [ZnLNG,BYN1074j18eq5b3], s_nationkey: [18], s_phone: [28-470-879-3141], s_acctbal: [4689.18], s_comment: [ymptotes. blithely regular th
  dolites are slyly according to the ]
  s_supplypk: [119], s_name: [Supplier#000000119], s_address: [4cXb8xM004yt0LYFxIzYz89Nxf8LZN6KcYc], s_nationkey: [18], s_phone: [28-558-264-1202], s_acctbal: [2860.13], s_comment: [options: quickly f
  ul courts wake quietly foxes. packages hag]
  s_supplypk: [187], s_name: [Supplier#00000187], s_address: [oMtyTl6TyLQniBwrUua42xK0jfNobEq], s_nationkey: [18], s_phone: [28-127-320-9230], s_acctbal: [8517.04], s_comment: [ruiously along the ca
  fully silent instructions. ]
  s_supplypk: [191], s_name: [Supplier#00000191], s_address: [X dgZd6DtV17X7], s_nationkey: [18], s_phone: [28-437-699-1621], s_acctbal: [1445], s_comment: [en packages haggie blithely regular reques
  t. silently ironic packages n]
  s_supplypk: [196], s_name: [Supplier#00000196], s_address: [TQ4xfWB5tXoz4FiCEhALh16], s_nationkey: [18], s_phone: [28-436-406-1127], s_acctbal: [4710.62], s_comment: [ke fluffy regular request
  furiously final]
  s_supplypk: [201], s_name: [Supplier#00000201], s_address: [e3120 JYQ9pCvDc0HxrxQ85xUn0r1], s_nationkey: [18], s_phone: [28-782-585-7326], s_acctbal: [9537.73], s_comment: [kly above the special
  deals. even requests nag carefully. quickly pending t]
  s_supplypk: [213], s_name: [Supplier#00000213], s_address: [1s7 4odat2Bw10QjXR2 2snFhc,Rvr2Icxh1m7f], s_nationkey: [18], s_phone: [28-317-938-6979], s_acctbal: [2616.54], s_comment: [, regular pa
  ges. request]
  s_supplypk: [265], s_name: [Supplier#00000265], s_address: [qo1xKyCEUh90awbeQW0l01hAU52iHFPNKO], s_nationkey: [18], s_phone: [28-629-327-4139], s_acctbal: [4663.08], s_comment: [s post. ironic pi
  p beans along the slyly unusual foxes regular, final asymptotes. requie]
  s_supplypk: [294], s_name: [Supplier#00000294], s_address: [29vnacy,dtzMrskukhf], s_nationkey: [18], s_phone: [28-299-788-1836], s_acctbal: [6798.75], s_comment: [en accounts. silent. regular ins
  ictio]
  s_supplypk: [302], s_name: [Supplier#00000302], s_address: [owBi0JHKpNIAGCQyCWC], s_nationkey: [18], s_phone: [28-734-845-8630], s_acctbal: [4422.77], s_comment: [tructions after the foxes cajole
  gularly ironic tithe. ruthless forges across the slyly express ]
  s_supplypk: [319], s_name: [Supplier#00000319], s_address: [tCE58Ay3zcHQRerKdgKFwLDrvq nrBpl], s_nationkey: [18], s_phone: [28-288-466-7847], s_acctbal: [1578.18], s_comment: [ts are furiously ev
  pending pinto beans. fluffily idle courts b]
  s_supplypk: [324], s_name: [Supplier#00000324], s_address: [QD0sgOsogz jniYR2HzxLofLzyk0q0Dje], s_nationkey: [18], s_phone: [28-637-452-5085], s_acctbal: [8042.43], s_comment: [itely slyly special
  ters. ]
  s_supplypk: [386], s_name: [Supplier#00000386], s_address: [4RDwKCNC6 yBY], s_nationkey: [18], s_phone: [28-730-866-8837], s_acctbal: [5836.17], s_comment: [frays. requests sleep ironic theodoil
  e. causally overzealous requests doubt forums]
  s_supplypk: [388], s_name: [Supplier#00000388], s_address: [n27XQohXrXlJRLdsyXNoljPqs], s_nationkey: [18], s_phone: [28-306-827-7902], s_acctbal: [6540.34], s_comment: [rate around the regular acco
  ss. furiously special pinto beans use bli]
selected 19 recs
n114-a0--*/%1_

```

Query 6 - Customer Table

```

lin114-0:~/Pi> ./test.out

** IMPORTANT: MAKE SURE THE INFORMATION BELOW IS CORRECT **
catalog location: catalog
tpch files dir: /cise/homes/sshivani/git/tpch-dbgenv/
heap files dir:

select test:
  1. load file
  2. scan
  3. scan & filter
  3

select table:
  1. nation
  2. region
  3. customer
  4. part
  5. partsupp
  6. orders
  7. lineitem
  3

Filter with CNF for : customer
Enter CNF predicates (when done press ctrl-D):
  (c_nationkey = 23) AND
(c_mktsegment = 'FURNITURE') AND
(c_acctbal > 7923.99) AND
(c_acctbal < 7110.83)
c_custkey: [30978], c_name: [Customer#000030978], c_address: [O,N4bwDhOsSdg64D8Ac60Uwxjn5r1P63sWAT], c_nationkey: [23], c_phone: [33-739-174-9854], c_acctbal: [7054.59], c_mktsegment: [FURNITURE], c_comment: [sly unusual platelets alongside of the express depos]
c_comment: [peculiar ideas, regular even pinto beans above]
c_comment: [peculiar ideas, regular even pinto beans above] and binding pine trees are blithely across]
c_custkey: [10800], c_name: [Customer#000030800], c_address: [B#FEHwF4MKMZQ,]NRTTVjS8qEnb7KENEVDEY], c_nationkey: [23], c_phone: [33-931-338-6655], c_acctbal: [7027.91], c_mktsegment: [FURNITURE], c_comment: [doliter are furiously clumsy final accounts, unusual dugouts furiously careful]
c_custkey: [61179], c_name: [Customer#000041179], c_address: [dndhiV4KFYz_x0T84qR95], c_nationkey: [23], c_phone: [33-893-935-9658], c_acctbal: [7079.41], c_mktsegment: [FURNITURE], c_comment: [uly final accounts, slyly special instructions above the quickly expr]
c_custkey: [72898], c_name: [Customer#000072898], c_address: [lzzRp4oWhnXCH,Lj3Iv], c_nationkey: [23], c_phone: [33-119-734-3569], c_acctbal: [7075.72], c_mktsegment: [FURNITURE], c_comment: [ unu
sual accounts haggle carefully final, fluffy excuses, regu]
c_custkey: [73441], c_name: [Customer#000073441], c_address: [7BHFD659A qMnOlO], c_nationkey: [23], c_phone: [33-868-482-1168], c_acctbal: [7038.25], c_mktsegment: [FURNITURE], c_comment: [jole ca
refully silent foxes, asymptotes snooze after the furiously final depende]
c_custkey: [10810], c_name: [Customer#000030810], c_address: [mglmPabab5P7Xk4kRqdun3m], c_nationkey: [23], c_phone: [33-688-221-5550], c_acctbal: [7073.67], c_mktsegment: [FURNITURE], c_comment: [t
heirish, the gags are blithely boundless, the ironic requests]
c_custkey: [98151], c_name: [Customer#000098151], c_address: [hEk1 FVkn9Pwer,1mmPgBPrrzGwVijkb0 ], c_nationkey: [23], c_phone: [33-870-939-7560], c_acctbal: [7045.3], c_mktsegment: [FURNITURE], c_c
omment: [ unusual ideas, unusual final accounts are carefully packages, furiously ironic excuses sleep never, regular ]
c_custkey: [125858], c_name: [Customer#000125858], c_address: [g#8770zQ6flffpcBi0Edzs1bDTzXH2Y], c_nationkey: [23], c_phone: [33-577-932-3852], c_acctbal: [7076.18], c_mktsegment: [FURNITURE], c_c
omment: [ g requests about the accounts sleep ]
c_custkey: [145598], c_name: [Customer#000145598], c_address: [Sn6xG#G8wImdX1i7h2AWfsoNVBCJ4oSa], c_nationkey: [23], c_phone: [33-685-336-6698], c_acctbal: [7064.61], c_mktsegment: [FURNITURE], c_c
omment: [ix fluftilly special, even deposits. slyly regular reques]
selected 10 recs
lin114-0:~/Pi>

```

Query 7 - Part Table

```
linn14-00:~/Pi> ./test.out

** IMPORTANT: MAKE SURE THE INFORMATION BELOW IS CORRECT **
catalog location: catalog
tpch files dir: /cise/homes/sshivani/git/tpch-dbgcn/
heap files dir:

select test:
    1. load file
    2. scan
    3. scan & filter
    3

select table:
    1. nation
    2. region
    3. customer
    4. part
    5. partsupp
    6. orders
    7. lineitem
    4

Filter with CNF for : part
Enter CNF predicate (when done press ctrl-D):
    (p.brand = 'Brand#13') AND
(p.retailprice > 500.0) AND
(p.retailprice < 930.0) AND
(p.size > 28) AND
(p.size < 100000)
p.partkey: [1022], p.name: [slate mint plum drab khaki], p_mfgr: [Manufacturer#1], p_brand: [Brand#13], p_type: [SMALL BURNISHED COPPER], p_size: [33], p_container: [WRAP CAN], p_retailprice: [923.02], p_comment: [sly quickly]
p.partkey: [3801], p.name: [powder wheat blush gainsboro saddle], p_mfgr: [Manufacturer#1], p_brand: [Brand#13], p_type: [PROMO POLISHED TIN], p_size: [36], p_container: [MED CAN], p_retailprice: [984], p_comment: [filly, sly]
p.partkey: [1022], p.name: [chiffon orange plum violet saddle], p_mfgr: [Manufacturer#1], p_brand: [Brand#13], p_type: [LARGE BURNISHED BRASS], p_size: [41], p_container: [LG BAG], p_retailprice: [923.02], p_comment: [idiotic asymptotes sl]
p.partkey: [4085], p.name: [sienna sky steel green orchid], p_mfgr: [Manufacturer#1], p_brand: [Brand#13], p_type: [ECONOMY PLATED STEEL], p_size: [34], p_container: [SM JAR], p_retailprice: [909], p_comment: [al packages, pending,]
p.partkey: [8800], p.name: [plum chiffon yellow goldenrod pale], p_mfgr: [Manufacturer#1], p_brand: [Brand#13], p_type: [LARGE PLATED STEEL], p_size: [36], p_container: [LG PKG], p_retailprice: [988], p_comment: [ts-- carefully]
p.partkey: [1001], p.name: [spring lawn saddle drab cyan], p_mfgr: [Manufacturer#1], p_brand: [Brand#13], p_type: [PROMO ANODIZED NICKEL], p_size: [32], p_container: [JUMBO BAG], p_retailprice: [921.01], p_comment: [r instructions,]
p.partkey: [17008], p.name: [puff indian snow ghost grey], p_mfgr: [Manufacturer#1], p_brand: [Brand#13], p_type: [MEDIUM BRUSHED COPPER], p_size: [46], p_container: [MED BOX], p_retailprice: [925]
, p_comment: [le blithely]
p.partkey: [24065], p.name: [khaki ghost metallic navy yellow], p_mfgr: [Manufacturer#1], p_brand: [Brand#13], p_type: [ECONOMY ANODIZED BRASS], p_size: [38], p_container: [JUMBO PKG], p_retailprice: [929], p_comment: [ironic packages, caref]
selected 8 rows
```

Query 8 - Partsupp Table

```
linn14-00:~/Pi> ./test.out

** IMPORTANT: MAKE SURE THE INFORMATION BELOW IS CORRECT **
catalog location: catalog
tpch files dir: /cise/homes/sshivani/git/tpch-dbgcn/
heap files dir:

select test:
    1. load file
    2. scan
    3. scan & filter
    3

select table:
    1. nation
    2. region
    3. customer
    4. part
    5. partsupp
    6. orders
    7. lineitem
    5

Filter with CNF for : partsupp
Enter CNF predicate (when done press ctrl-D):
    (ps_supplycost > 999.98)
ps.partkey: [1213], ps_suppkey: [3714], ps_availqty: [5070], ps_supplycost: [999.99], ps_comment: [ ironic, special deposits. carefully final deposits haggle fluffily. furiously final foxes use furiously furiously ironic accounts. package]
ps.partkey: [1221], ps_suppkey: [3221], ps_availability: [9790], ps_supplycost: [999.99], ps_comment: [uriously regular requests haggle. slow foxes at the furiously final accounts hang slyly fluffily express instructions. permanent, final deposits are sometimes after the blithely unusual packages. fil]
ps.partkey: [19879], ps_suppkey: [1581], ps_availability: [4686], ps_supplycost: [999.99], ps_comment: [y final requests. final platelets cajole carefully. blithely ironic packages wake after the blithely bold requests. sl]
ps.partkey: [26924], ps_suppkey: [1929], ps_availability: [9218], ps_supplycost: [1000], ps_comment: [furiously regular requests. requests alongside of the pending, even courts cajole silent platelets. slyly bold instructions after the furiously unusual al]
ps.partkey: [30836], ps_suppkey: [5843], ps_availability: [6993], ps_supplycost: [999.99], ps_comment: [ong the slyly regular deposits. even asymptotes haggle against the slyly final Tiresias. blithely regular instructions maintain up the furiously sly requests. furiously special theor]
ps.partkey: [31554], ps_suppkey: [1555], ps_availability: [2409], ps_supplycost: [1000], ps_comment: [ans kindle along the blithely even excuses. slyly careful foxes are blithely. theodolites dazzle ironically ideas sleep among the asymptotes. packages above the instructions w]
ps.partkey: [52644], ps_suppkey: [5158], ps_availability: [8224], ps_supplycost: [999.99], ps_comment: [ the slyly even deposits. furiously regular foxes along the regular asymptotes sleep slyly unusuus deposit. carefully final dolphins abou]
ps.partkey: [99907], ps_suppkey: [7438], ps_availability: [7911], ps_supplycost: [1000], ps_comment: [ully about the furiously special deposits. slyly express asymptotes affix around the boldly express frays. car]
ps.partkey: [103943], ps_suppkey: [3944], ps_availability: [5065], ps_supplycost: [1000], ps_comment: [leep against the theodolites. quickly ironic ideas boost fluffily slyly bold dolphins. fluffil
ps.partkey: [105389], ps_suppkey: [410], ps_availability: [8531], ps_supplycost: [999.99], ps_comment: [y unusual requests. quickly bold accounts use quickly quickly regular packages. ironic packages s
leep carefully with the final theodolites. even, reg]
ps.partkey: [1030478], ps_suppkey: [2984], ps_availability: [2592], ps_supplycost: [999.99], ps_comment: [ites against the ironic, unusual instructions use fluffily despite the quickly final theodolites . stealthy theodolites nag]
ps.partkey: [142176], ps_suppkey: [7288], ps_availability: [9737], ps_supplycost: [1000], ps_comment: [cies boost slyly special requests. ironic accounts are quickly. ]
ps.partkey: [142176], ps_suppkey: [7666], ps_availability: [4963], ps_supplycost: [999.99], ps_comment: [of the slyly even requests haggle fluffily furiously ruthlessly platelets; furiously final package sleep until the final packages. blithely final theor]
ps.partkey: [1058580], ps_suppkey: [5061], ps_availability: [9994], ps_supplycost: [1000], ps_comment: [ng the bold ideas. slyly ironic packages mold enticing, special accounts. req
selected 14 rows
linn14-00:~/Pi> 
```

Query 9 - Partsupp Table

```
lin114-00:~/P1> ./test.out
** IMPORTANT: MAKE SURE THE INFORMATION BELOW IS CORRECT **
catalog location: catalog
tpch files dir: /cise/homes/sshivani/git/tpch-dbgenv
heap files dir:

select test:
  1. load file
  2. scan
  3. scan & filter
  3

select table:
  1. nation
  2. region
  3. customer
  4. part
  5. partsupp
  6. orders
  7. lineitem
  5

Filter with CNF for : partsupp
Enter CNF predicate (when done press ctrl-D):
  (ps_availability < 10) AND
  (ps_supplycost > 100.0) AND
  (ps_suppkey < 300)

ps_partkey: [7696], ps_suppkey: [197], ps_availability: [6], ps_supplycost: [268.55], ps_comment: [pecial, regular theodolites haggle fluffily according t]
ps_partkey: [19245], ps_suppkey: [244], ps_availability: [7], ps_supplycost: [722.6], ps_comment: [ove the even requests. special deposits sleep. epitaphs boost slowly. final ac]
ps_partkey: [25097], ps_suppkey: [102], ps_availability: [1], ps_supplycost: [167.93], ps_comment: [s. carefully express frays sleep slyly. pending, regular deposits]
ps_partkey: [27573], ps_suppkey: [76], ps_availability: [2], ps_supplycost: [624.24], ps_comment: [ackages. slyly pending accounts are furiously blithe instructions. express, ]
ps_partkey: [42762], ps_suppkey: [275], ps_availability: [5], ps_supplycost: [276.99], ps_comment: [ use blithely after the furiously final depths. furiously slow pinto beans boost quickly along the fu
riously even pinto beans. slyly express requests wake. furiously ]
ps_partkey: [50080], ps_suppkey: [51], ps_availability: [6], ps_supplycost: [467.83], ps_comment: [cies integrate blithely regular deposits. slyly silent deposits are blithely silent, special theodolit
es. silent deposits follow after the carefully blithe instructions wake in place of the]
ps_partkey: [59225], ps_suppkey: [224], ps_availability: [7], ps_supplycost: [396.96], ps_comment: [ silent packages maintain. regular deposits use carefully according to the unusual foxes. packages ar
e blithely bold decays detect furiously ironic dependencies. even, regular t]
ps_partkey: [77622], ps_suppkey: [138], ps_availability: [6], ps_supplycost: [352.93], ps_comment: [st furiously: sometimes bold pinto beans around the busily pending instructions wake slyly furiously
regular deposits. bold asym]
ps_partkey: [85011], ps_suppkey: [28], ps_availability: [4], ps_supplycost: [628.75], ps_comment: [uriously regular Tiresias. slyly ironic pinto beans impress blithely. fluffily regular Tiresias integr
ate furiously even foxes. ironic excuse around the furiously even waters are quickly]
ps_partkey: [112746], ps_suppkey: [280], ps_availability: [7], ps_supplycost: [460.99], ps_comment: [y bold foxes cajole of the furiously even ideas. quickly close theodolites along the express, fur]
ps_partkey: [137572], ps_suppkey: [86], ps_availability: [8], ps_supplycost: [186.55], ps_comment: [n ideas nag slyly after the blithely bold deposits. entic]
ps_partkey: [172728], ps_suppkey: [272], ps_availability: [5], ps_supplycost: [437.41], ps_comment: [ regular accounts boost. regular, express pinto beans sl]
ps_partkey: [1857487], ps_suppkey: [6], ps_availability: [7], ps_supplycost: [447.8], ps_comment: [y doggedly regular excuses. slyly bold deposits according to the instructions sleep carefully even inst
ructions. ful]
ps.partkey: [192666], ps_suppkey: [224], ps_availability: [1], ps_supplycost: [374.58], ps_comment: [esias integrate carefully. regular accounts alongside of the requests haggle slyly fluffily ironic d
eposits. slyly special packages doze carefully. slowly regu]

selected 14 recs
lin114-00:~/P1>
```

Query 10 - Order Table

```
lin114-00:~/P1> ./test.out
** IMPORTANT: MAKE SURE THE INFORMATION BELOW IS CORRECT **
catalog location: catalog
tpch files dir: /cise/homes/sshivani/git/tpch-dbgenv
heap files dir:

select test:
  1. load file
  2. scan
  3. scan & filter
  3

select table:
  1. nation
  2. region
  3. customer
  4. part
  5. partsupp
  6. orders
  7. lineitem
  6

Filter with CNF for : orders
Enter CNF predicate (when done press ctrl-D):
  (o_orderpriority = '1-URGENT') AND
  (o_orderstatus = 'O') AND
  (o_totalprice > 1015.68) AND
  (o_totalprice < 1051.89)

o.orderkey: [298468], o_custkey: [72782], o_orderstatus: [O], o_totalprice: [1035.34], o_orderdate: [1996-02-08], o_orderpriority: [1-URGENT], o_clerk: [Clerk#000000305], o_shipppriority: [0], o_co
mment: [ites are slyly above the furiously regu]
o.orderkey: [1636866], o_custkey: [123397], o_orderstatus: [O], o_totalprice: [1030.26], o_orderdate: [1997-01-09], o_orderpriority: [1-URGENT], o_clerk: [Clerk#000000268], o_shipppriority: [0], o_c
omment: [tive, blithely blithely fluffily unusual]
o.orderkey: [1864274], o_custkey: [43048], o_orderstatus: [O], o_totalprice: [1040.95], o_orderdate: [1998-05-29], o_orderpriority: [1-URGENT], o_clerk: [Clerk#000000353], o_shipppriority: [0], o_co
mment: [slyly special accounts doze blithely ironic]
o.orderkey: [2270022], o_custkey: [34795], o_orderstatus: [O], o_totalprice: [1020.97], o_orderdate: [1995-07-19], o_orderpriority: [1-URGENT], o_clerk: [Clerk#000000592], o_shipppriority: [0], o_co
mment: [furiously unusual excuses believe]
o.orderkey: [2364615], o_custkey: [101876], o_orderstatus: [O], o_totalprice: [1051.24], o_orderdate: [1996-06-03], o_orderpriority: [1-URGENT], o_clerk: [Clerk#000000468], o_shipppriority: [0], o_c
omment: [he ironic, ironic requests sleep above the express]
o.orderkey: [2383998], o_custkey: [105200], o_orderstatus: [O], o_totalprice: [1044.37], o_orderdate: [1998-03-12], o_orderpriority: [1-URGENT], o_clerk: [Clerk#000000824], o_shipppriority: [0], o_c
omment: [pecial, unusual requests integrate]
o.orderkey: [2460431], o_custkey: [15633], o_orderstatus: [O], o_totalprice: [1019.65], o_orderdate: [1995-11-15], o_orderpriority: [1-URGENT], o_clerk: [Clerk#000000137], o_shipppriority: [0], o_co
mment: [busily, blithely, carefully regular pinto beans cajole slyly. b]
o.orderkey: [2488028], o_custkey: [1093686], o_orderstatus: [O], o_totalprice: [1024.26], o_orderdate: [1997-09-23], o_orderpriority: [1-URGENT], o_clerk: [Clerk#000000273], o_shipppriority: [0], o_c
omment: [ly pending accounts sleep]
o.orderkey: [4442532], o_custkey: [62389], o_orderstatus: [O], o_totalprice: [1038.36], o_orderdate: [1998-02-02], o_orderpriority: [1-URGENT], o_clerk: [Clerk#000000811], o_shipppriority: [0], o_co
mment: [ requests believe against the requests. ful]
o.orderkey: [5859840], o_custkey: [7696], o_orderstatus: [O], o_totalprice: [1039.61], o_orderdate: [1996-01-02], o_orderpriority: [1-URGENT], o_clerk: [Clerk#000000737], o_shipppriority: [0], o_co
mment: [arefully final foxes. express accounts play carefully. fluffily special reques]
selected 10 recs
lin114-00:~/P1>
```

Query 11 - Lineitem Table

Query 12 - Lineitem Table

```
lin114-00:~/P1> ./test.out

** IMPORTANT: MAKE SURE THE INFORMATION BELOW IS CORRECT **
catalog location: catalog
tpch files dir:      /cise/homes/sshivani/git/tpch-dbggen/
heap files dir:

select test:
  1. load file
  2. scan
  3. scan & filter
  3

select table:
  1. nation
  2. region
  3. customer
  4. part
  5. partsupp
  6. orders
  7. lineitem
  7

Filter with CNF for :
Enter CNF predicate (when done press ctrl-D):
  (l_orderkey > 100) AND
  (l_orderkey < 1000) AND
  (l_partkey > 100) AND
  (l_partkey < 5000) AND
  (l_shipmode = 'AIR') AND
  (l_linenstatus = 'F') AND
  (l_tax < 0.01)

  l_orderkey: [100], l_partkey: [1739], l_suppkey: [4248], l_linenumber: [2], l_quantity: [48], l_extendedprice: [78756], l_discount: [0.09], l_tax: [0.02], l_returnflag: [R], l_linenstatus: [F], l_sh
update: [1992-07-01], l_commitdate: [1992-07-12], l_receiptdate: [1992-07-24], l_shipinstruct: [NONE], l_shipmode: [AIR], l_comment: [likely alongside of the requ]
  l_orderkey: [194], l_partkey: [2594], l_suppkey: [5895], l_linenumber: [1], l_quantity: [17], l_extendedprice: [26442], l_discount: [0.05], l_tax: [0.04], l_returnflag: [R], l_linenstatus: [F], l_sh
update: [1992-05-24], l_commitdate: [1992-05-22], l_receiptdate: [1992-05-30], l_shipinstruct: [COLLECT COD], l_shipmode: [AIR], l_comment: [ regular deposi]
selected 2 recs
lin114-00:~/P1>
```