Homework 3

Question 3.a

```
SELECT name
FROM inode
WHERE type = "FILE"
  AND mtime = (
     SELECT max(mtime)
     FROM inode
     WHERE type = "FILE"
  );
```

```
mysql> SELECT name
    -> FROM inode
    -> WHERE type = "FILE"
    ->     AND mtime = (
    ->         SELECT max(mtime)
    ->         FROM inode
    ->         WHERE type = "FILE"
    ->     );
+---------------+
| name          |
+---------------+
| yarn-site.xml |
+---------------+
1 row in set (0.00 sec)
```

Question 3.b

```
SELECT name
FROM inode
WHERE permission LIKE "%6%";
```

```
mysql> SELECT name
    -> FROM inode
    -> WHERE permission LIKE "%6%";
+-----------------------+
| name                  |
+-----------------------+
| a.txt                 |
| b.txt                 |
| capacity-scheduler.xml |
| core-site.xml         |
| hadoop-policy.xml     |
| hdfs-site.xml         |
| httpfs-site.xml       |
| kms-acls.xml          |
| kms-site.xml          |
| mapred-site.xml       |
| yarn-site.xml         |
| capacity-scheduler.xml |
| core-site.xml         |
| hadoop-policy.xml     |
| hdfs-site.xml         |
| httpfs-site.xml       |
| kms-acls.xml          |
| kms-site.xml          |
| mapred-site.xml       |
| yarn-site.xml         |
| capacity-scheduler.xml |
| core-site.xml         |
| hadoop-policy.xml     |
| hdfs-site.xml         |
| httpfs-site.xml       |
| kms-acls.xml          |
| kms-site.xml          |
| mapred-site.xml       |
| yarn-site.xml         |
+-----------------------+
29 rows in set (0.00 sec)
```

Question 3.c

```
SELECT i.id,
    i.name,
    b.numBytes
from inode as i,
    blocks as b
where type = "FILE"
    and i.id = b.inumber;
```

```
mysql> SELECT i.id,
    ->      i.name,
    ->      b.numBytes
    -> from inode as i,
    ->      blocks as b
    -> where type = "FILE"
    ->      and i.id = b.inumber;
+-------+----------------------+----------+
| id    | name                 | numBytes |
+-------+----------------------+----------+
| 16389 | a.txt                |       19 |
| 16390 | b.txt                |       19 |
| 16392 | capacity-scheduler.xml |     8260 |
| 16393 | core-site.xml        |      874 |
| 16394 | hadoop-policy.xml    |    11392 |
| 16395 | hdfs-site.xml        |      853 |
| 16396 | httpfs-site.xml      |      620 |
| 16397 | kms-acls.xml         |     3518 |
| 16398 | kms-site.xml         |      682 |
| 16399 | mapred-site.xml      |      758 |
| 16400 | yarn-site.xml        |      690 |
| 16403 | capacity-scheduler.xml |     8260 |
| 16404 | core-site.xml        |      874 |
| 16405 | hadoop-policy.xml    |    11392 |
| 16406 | hdfs-site.xml        |      853 |
| 16407 | httpfs-site.xml      |      620 |
| 16408 | kms-acls.xml         |     3518 |
| 16409 | kms-site.xml         |      682 |
| 16410 | mapred-site.xml      |      758 |
| 16411 | yarn-site.xml        |      690 |
| 16414 | capacity-scheduler.xml |     8260 |
| 16415 | core-site.xml        |      874 |
| 16416 | hadoop-policy.xml    |    11392 |
| 16417 | hdfs-site.xml        |      853 |
| 16418 | httpfs-site.xml      |      620 |
| 16419 | kms-acls.xml         |     3518 |
| 16420 | kms-site.xml         |      682 |
| 16421 | mapred-site.xml      |      758 |
| 16422 | yarn-site.xml        |      690 |
+-------+----------------------+----------+
29 rows in set (0.00 sec)
```

Question 3.d

```
SELECT i.id,
    i.name,
    count(d.child) as num_obj
from inode as i
    JOIN directory d ON i.id = d.parent
GROUP BY i.id,
    i.name;
```

```
mysql> SELECT i.id,
    ->      i.name,
    ->      count(d.child) as num_obj
    -> from inode as i
    ->      JOIN directory d ON i.id = d.parent
    -> GROUP BY i.id,
    ->      i.name;
+-------+----------+---------+
| id    | name     | num_obj |
+-------+----------+---------+
| 16385 |          |       1 |
| 16386 | user     |       1 |
| 16387 | ec2-user |       5 |
| 16388 | input1   |       1 |
| 16391 | input    |       9 |
| 16401 | inf551   |       1 |
| 16402 | input    |       9 |
| 16412 | inf351   |       1 |
| 16413 | input    |       9 |
+-------+----------+---------+
9 rows in set (0.00 sec)
```

Question 3.e

```
SELECT i.name
FROM inode as i
  JOIN (
    SELECT parent,
      count(child) as num_files
    from (
        SELECT d.parent,
          d.child
        FROM directory as d
          JOIN inode i on i.id = d.child
        WHERE type = "FILE"
      ) as t
    GROUP BY parent
    HAVING num_files > 2
  ) as x ON i.id = x.parent;
```

```
mysql> SELECT i.name
    -> FROM inode as i
    ->     JOIN (
    ->         SELECT parent,
    ->             count(child) as num_files
    ->         from (
    ->                 SELECT d.parent,
    ->                     d.child
    ->             FROM directory as d
    ->                 JOIN inode i on i.id = d.child
    ->             WHERE type = "FILE"
    ->             ) as t
    ->         GROUP BY parent
    ->         HAVING num_files > 2
    ->     ) as x ON i.id = x.parent;
+-------+
| name  |
+-------+
| input |
| input |
| input |
+-------+
3 rows in set (0.00 sec)
```