CS 3754
Assignment 3
Matthew Bartlett
201437787

1.

```
Enter password: ******************
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 14
Server version: 5.7.19-log MySQL Community Server (GPL)

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> _
```
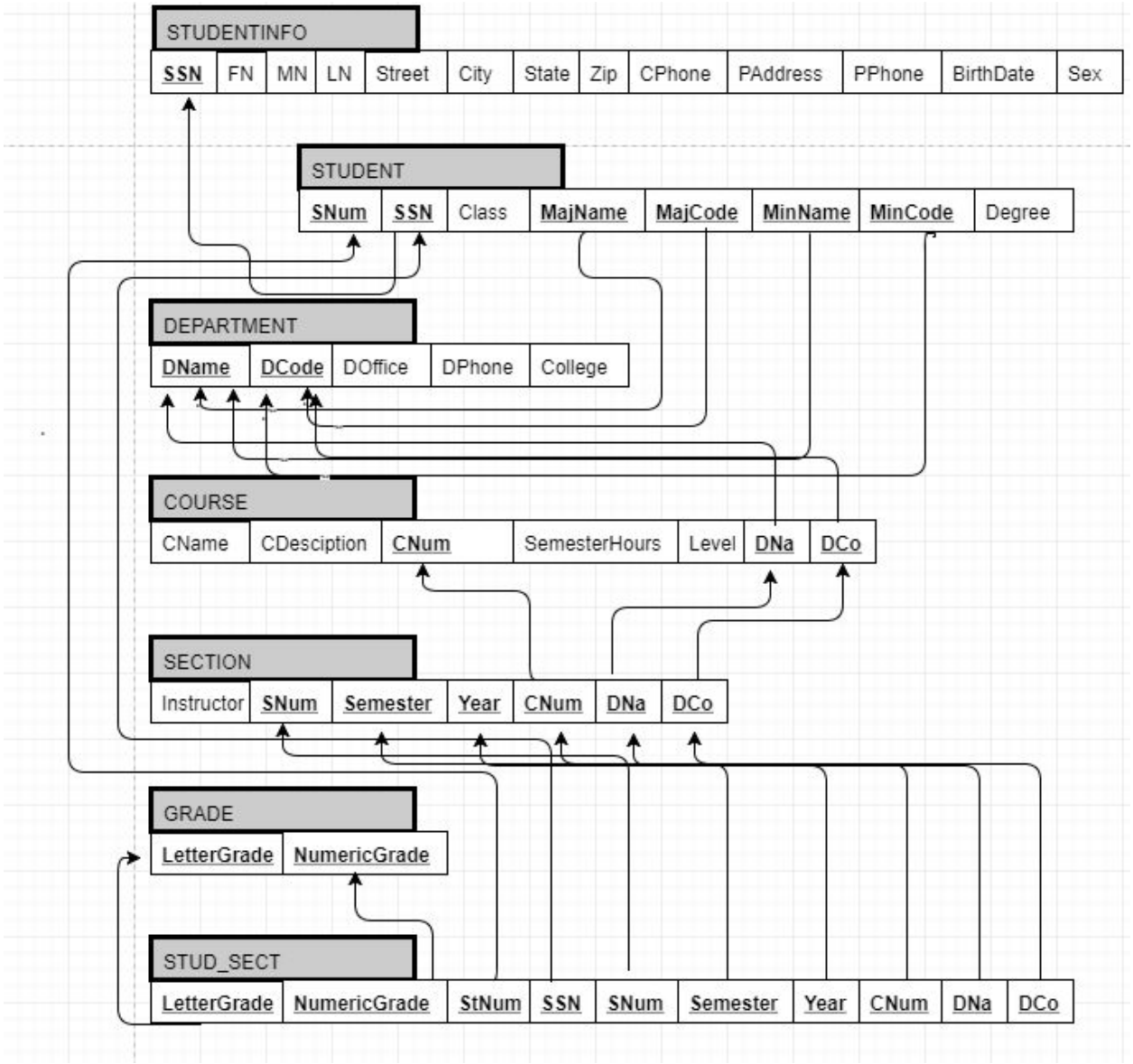

2.

a/b. **Relational Schema:**

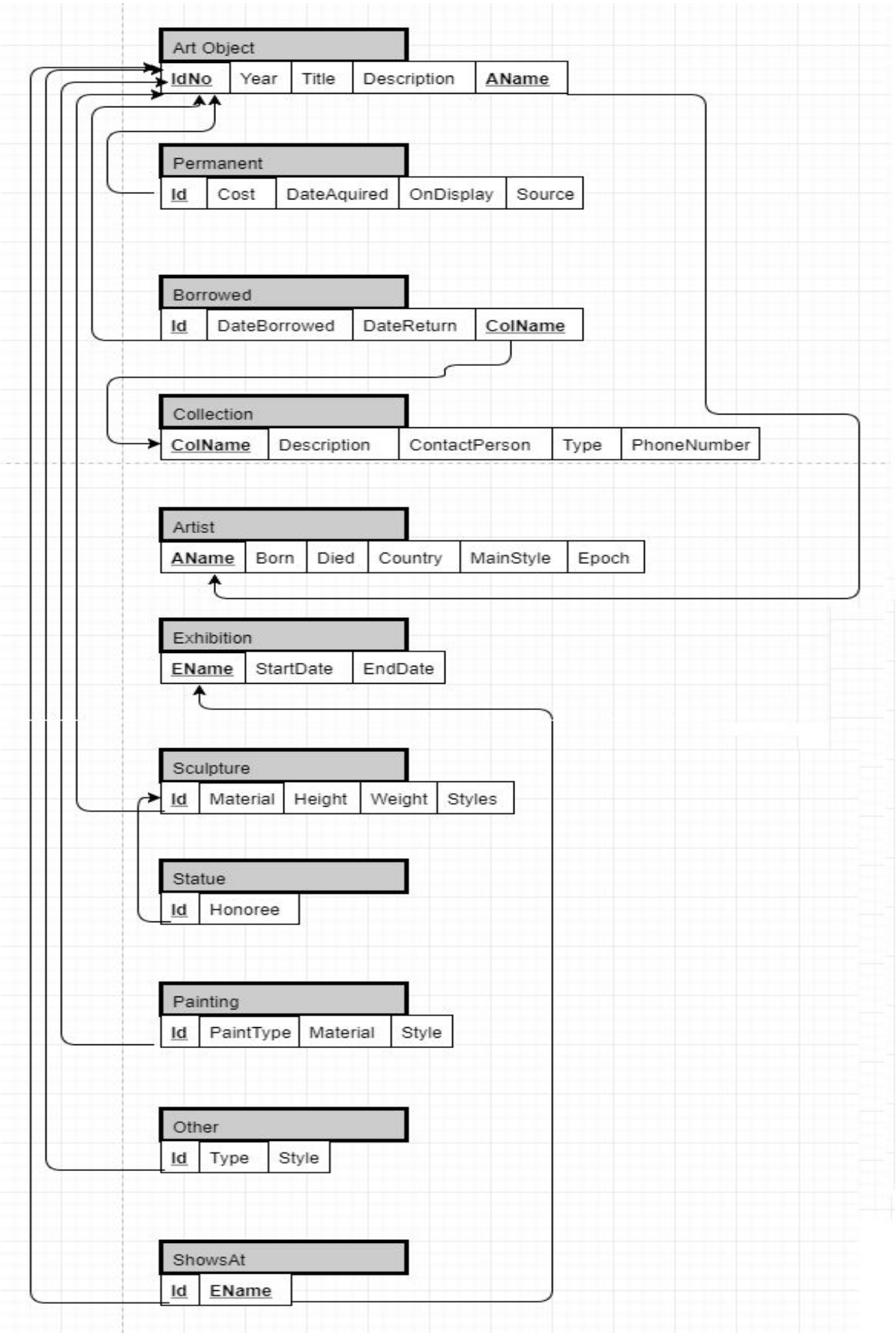


C. **Database tables in MySQL:**

```
mysql> desc studentinfo;
+-----------+-------------+------+-----+---------+-------+
| Field     | Type        | Null | Key | Default | Extra |
+-----------+-------------+------+-----+---------+-------+
| SSN       | int(11)     | NO   | PRI | NULL    |       |
| FN        | varchar(16) | YES  |     | NULL    |       |
| MN        | varchar(16) | YES  |     | NULL    |       |
| LN        | varchar(16) | YES  |     | NULL    |       |
| Street    | varchar(16) | YES  |     | NULL    |       |
| city      | varchar(16) | YES  |     | NULL    |       |
| State     | varchar(16) | YES  |     | NULL    |       |
| Zip       | varchar(6)  | YES  |     | NULL    |       |
| CPhone    | varchar(16) | YES  |     | NULL    |       |
| PAddress  | varchar(48) | YES  |     | NULL    |       |
| PPhone    | varchar(16) | YES  |     | NULL    |       |
| BirthDate | date        | YES  |     | NULL    |       |
| Sex       | varchar(16) | YES  |     | NULL    |       |
+-----------+-------------+------+-----+---------+-------+
13 rows in set (0.01 sec)

mysql> desc student;
+----------+-------------+------+-----+---------+-------+
| Field    | Type        | Null | Key | Default | Extra |
+----------+-------------+------+-----+---------+-------+
| SNum     | int(11)     | NO   | PRI | NULL    |       |
| SSN      | int(11)     | YES  | MUL | NULL    |       |
| class    | varchar(16) | YES  |     | NULL    |       |
| MajName  | varchar(16) | YES  | MUL | NULL    |       |
| MajCode  | varchar(16) | YES  | MUL | NULL    |       |
| MinName  | varchar(16) | YES  | MUL | NULL    |       |
| MinCode  | varchar(16) | YES  | MUL | NULL    |       |
| Degree   | varchar(16) | YES  |     | NULL    |       |
+----------+-------------+------+-----+---------+-------+
8 rows in set (0.00 sec)

mysql> desc department;
+--------+-------------+------+-----+---------+-------+
| Field  | Type        | Null | Key | Default | Extra |
+--------+-------------+------+-----+---------+-------+
| DName  | varchar(16) | NO   | PRI | NULL    |       |
| DCode  | varchar(16) | YES  | MUL | NULL    |       |
+--------+-------------+------+-----+---------+-------+
2 rows in set (0.01 sec)

mysql> desc deparmentinfo;
ERROR 1146 (42S02): Table 'university.deparmentinfo' doesn't exist
mysql> desc departmentinfo;
+----------+-------------+------+-----+---------+-------+
| Field    | Type        | Null | Key | Default | Extra |
+----------+-------------+------+-----+---------+-------+
| DCode    | varchar(16) | NO   | PRI | NULL    |       |
| DOffice  | varchar(16) | YES  |     | NULL    |       |
| DPhone   | varchar(16) | YES  |     | NULL    |       |
| College  | varchar(16) | YES  |     | NULL    |       |
+----------+-------------+------+-----+---------+-------+
```

```
mysql> desc course;
+---------------+-------------+------+-----+---------+-------+
| Field         | Type        | Null | Key | Default | Extra |
+---------------+-------------+------+-----+---------+-------+
| CNum          | int(11)     | NO   | PRI | NULL    |       |
| CName         | varchar(16) | YES  |     | NULL    |       |
| CDescription  | varchar(16) | YES  |     | NULL    |       |
| SemesterHours | int(11)     | YES  |     | NULL    |       |
| Level         | int(11)     | YES  |     | NULL    |       |
| DName         | varchar(16) | YES  | MUL | NULL    |       |
| DCode         | varchar(16) | YES  | MUL | NULL    |       |
+---------------+-------------+------+-----+---------+-------+
7 rows in set (0.00 sec)

mysql> desc section;
+------------+-------------+------+-----+---------+-------+
| Field      | Type        | Null | Key | Default | Extra |
+------------+-------------+------+-----+---------+-------+
| SNum       | int(11)     | NO   | PRI | NULL    |       |
| Semester   | varchar(16) | YES  |     | NULL    |       |
| Year       | int(11)     | YES  |     | NULL    |       |
| CNum       | int(11)     | YES  | MUL | NULL    |       |
| DNa        | varchar(16) | YES  | MUL | NULL    |       |
| DCo        | varchar(16) | YES  | MUL | NULL    |       |
| Instructor | varchar(16) | YES  |     | NULL    |       |
+------------+-------------+------+-----+---------+-------+
7 rows in set (0.00 sec)

mysql> desc grade;
+--------------+-------------+------+-----+---------+-------+
| Field        | Type        | Null | Key | Default | Extra |
+--------------+-------------+------+-----+---------+-------+
| LetterGrade  | varchar(1)  | YES  |     | NULL    |       |
| NumericGrade | int(11)     | NO   | PRI | NULL    |       |
+--------------+-------------+------+-----+---------+-------+
2 rows in set (0.00 sec)

mysql> desc stud_sect;
+--------------+-------------+------+-----+---------+-------+
| Field        | Type        | Null | Key | Default | Extra |
+--------------+-------------+------+-----+---------+-------+
| NumericGrade | int(11)     | YES  | MUL | NULL    |       |
| StNum        | int(11)     | YES  | MUL | NULL    |       |
| SSN          | int(11)     | YES  | MUL | NULL    |       |
| SNum         | int(11)     | YES  | MUL | NULL    |       |
| Semester     | varchar(16) | YES  |     | NULL    |       |
| Year         | int(11)     | YES  |     | NULL    |       |
| CNum         | int(11)     | YES  |     | NULL    |       |
| DNa          | varchar(16) | YES  | MUL | NULL    |       |
| DCo          | varchar(16) | YES  | MUL | NULL    |       |
+--------------+-------------+------+-----+---------+-------+
9 rows in set (0.01 sec)
```

3.a/b.**Relational Schema: (Next page)**


Art Object
IdNo
Year
Title
Description
AName
Permanent
Id
Cost
DateAquired
OnDisplay
Source
Borrowed
Id
DateBorrowed
DateReturn
ColName
Collection
ColName
Description
ContactPerson
Type
PhoneNumber
Artist
AName
Born
Died
Country
MainStyle
Epoch
Exhibition
EName
StartDate
EndDate
Sculpture
Id
Material
Height
Weight
Styles
Statue
Id
Honoree
Painting
Id
PaintType
Material
Style
Other
Id
Type
Style
ShowsAt
Id
EName

c/d. **Database with Data Inserted:**

```
mysql> select * from Art_object;
+------+------+---------+-----------------------------+----------+
| IdNo | Year | Title   | Description                 | AName    |
+------+------+---------+-----------------------------+----------+
|    1 | 1902 | Piece 1 | A landscape painting        | James    |
|    2 | 1880 | Piece 2 | An impressionist shoreline | Brendan  |
|    3 | 1821 | Piece 3 | Sculpture of a tree         | Jane     |
|    4 | 1799 | Piece 4 | Abstract storm painting     | Paul     |
+------+------+---------+-----------------------------+----------+
4 rows in set (0.00 sec)

mysql> select * from permanent;
+------+------+--------------+-----------+--------------------+
| Id   | Cost | DateAquired  | OnDisplay | Source             |
+------+------+--------------+-----------+--------------------+
|    1 | 1550 | 2011-10-05   | Y         | Private Collector  |
|    3 | 5000 | 2008-07-14   | N         | Auction            |
|    4 | 2400 | 2009-02-23   | Y         | Donated            |
+------+------+--------------+-----------+--------------------+
3 rows in set (0.00 sec)

mysql> select * from borrowed;
+------+--------------+-------------+--------------------+
| ID   | DateBorrowed | DateReturn  | ColName            |
+------+--------------+-------------+--------------------+
|    2 | 2013-11-10   | 2013-12-20  | Museum of Quebec   |
+------+--------------+-------------+--------------------+
1 row in set (0.00 sec)

mysql> select * from collection;
+-----------------+-------------+---------------+---------+-------------+
| ColName         | Description | ContactPerson | Type    | PhoneNumber |
+-----------------+-------------+---------------+---------+-------------+
| Museum of Quebec | Paintings  | Steve         | Private | 8887777     |
+-----------------+-------------+---------------+---------+-------------+
1 row in set (0.00 sec)

mysql> select * from artist;
+---------+------------+------------+-----------+---------------+-----------+
| AName   | Born       | Died       | Country   | MainStyle     | Epoch     |
+---------+------------+------------+-----------+---------------+-----------+
| Brendan | 1840-02-19 | 1899-12-15 | Canada    | Impressionism | Bell      |
| James   | 1860-01-22 | 1921-11-03 | Australia | Water color   | Bell      |
| Jane    | 1755-08-13 | 1833-10-19 | USA       | Sculpture     | Victorian |
| Paul    | 1780-07-01 | 1840-09-05 | Ukraine   | Abstract      | Victorian |
+---------+------------+------------+-----------+---------------+-----------+
4 rows in set (0.00 sec)

mysql> select * from exhibition;
+-----------------+-------------+-------------+
| EName           | StartDate   | EndDate     |
+-----------------+-------------+-------------+
| Annual Art Week | 2013-12-01  | 2013-12-08  |
+-----------------+-------------+-------------+
1 row in set (0.00 sec)
mysql> select * from sculpture;
+------+----------+--------+--------+-------------+
| Id   | Material | Height | Weight | Style       |
+------+----------+--------+--------+-------------+
|    3 | Marble   |    170 |   3450 | Neoclassical |
+------+----------+--------+--------+-------------+
1 row in set (0.00 sec)

mysql> select * from Painting;
+------+-----------+-----------+-------------+
| Id   | PaintType | Material  | Style       |
+------+-----------+-----------+-------------+
|    1 | Acrylic   | Nylon     | Water Color |
|    2 | Acrylic   | Polyester | Impressionist |
|    4 | Acrylic   | Polyester | Abstract    |
+------+-----------+-----------+-------------+
3 rows in set (0.00 sec)

mysql> select * from Shows_At;
+------+-----------------+
| Id   | EName           |
+------+-----------------+
|    1 | Annual Art Week |
|    2 | Annual Art Week |
|    3 | Annual Art Week |
+------+-----------------+
3 rows in set (0.00 sec)
```

e. **Select and Update Statements:**

```
mysql>   select * from Collection;
+-------------------+--------------+---------------+---------+--------------+
| ColName           | Description | ContactPerson | Type    | PhoneNumber |
+-------------------+--------------+---------------+---------+--------------+
| Museum of Quebec | Paintings    | Steve         | Private | 8887777      |
+-------------------+--------------+---------------+---------+--------------+
1 row in set (0.00 sec)

mysql> SELECT IdNo, Year FROM Art_Object;
+------+------+
| IdNo | Year |
+------+------+
|    1 | 1902 |
|    2 | 1880 |
|    3 | 1821 |
|    4 | 1799 |
+------+------+
4 rows in set (0.00 sec)

mysql> SELECT EName, StartDate FROM Exhibition;
+-----------------+-------------+
| EName           | StartDate   |
+-----------------+-------------+
| Annual Art Week | 2013-12-01 |
+-----------------+-------------+
1 row in set (0.00 sec)

mysql> SELECT AName FROM Artist;
+---------+
| AName   |
+---------+
| Brendan |
| James   |
| Jane    |
| Paul    |
+---------+
4 rows in set (0.00 sec)

mysql> SELECT COUNT(DISTINCT IdNo) FROM Art_Object;
+-----------------------+
| COUNT(DISTINCT IdNo) |
+-----------------------+
|                     4 |
+-----------------------+
1 row in set (0.00 sec)

mysql> SELECT * FROM Painting
    -> WHERE Material='Polyester' AND (PaintType='Acrylic');
+------+-----------+----------+----------------+
| Id   | PaintType | Material | Style          |
+------+-----------+----------+----------------+
|    2 | Acrylic   | Polyester | Impressionist |
|    4 | Acrylic   | Polyester | Abstract      |
+------+-----------+----------+----------------+
2 rows in set (0.00 sec)
mysql> SELECT * FROM Permanent
    -> WHERE OnDisplay='Y' AND (Cost='2400' or '1550');
+------+------+--------------+-----------+--------------------+
| Id   | Cost | DateAquired | OnDisplay | Source             |
+------+------+--------------+-----------+--------------------+
|    1 | 1550 | 2011-10-05   | Y         | Private Collector |
|    4 | 2400 | 2009-02-23   | Y         | Donated            |
+------+------+--------------+-----------+--------------------+
2 rows in set (0.00 sec)

mysql> SELECT * FROM Artist
    -> WHERE AName='James' or ( Not country='USA');
+---------+------------+------------+-----------+-----------+-----------+
| AName   | Born       | Died       | Country   | MainStyle | Epoch     |
+---------+------------+------------+-----------+-----------+-----------+
| Brendan | 1840-02-19 | 1899-12-15 | Canada    | Impressionism | Bell      |
| James   | 1860-01-22 | 1921-11-03 | Australia | Water color   | Bell      |
| Paul    | 1780-07-01 | 1840-09-05 | Ukraine   | Abstract      | Victorian |
+---------+------------+------------+-----------+-----------+-----------+
3 rows in set (0.00 sec)

mysql> UPDATE Permanent
    -> SET Cost='3900'
    -> WHERE Id = '4';
Query OK, 1 row affected (0.07 sec)
Rows matched: 1  Changed: 1  Warnings: 0
mysql> UPDATE Painting
    -> SET PaintType = 'Oil'
    -> WHERE Id = '1';
Query OK, 1 row affected (0.04 sec)
Rows matched: 1  Changed: 1  Warnings: 0
```