```
SQL> -- Question 1.a
SQL> -- Create a set of all students that have taken courses.
SQL> SELECT DISTINCT Student_Name FROM Course_Taken;

STUDENT_NAME
-----------------------
Robert
Tom
David
Hannah

SQL>
SQL> -- Question 1.b
SQL> -- Find and create set of all the student and the courses required to graduate.
SQL> SELECT * FROM (SELECT DISTINCT Student_Name FROM Course_Taken), Course_Required;

STUDENT_NAME          COURSE
--------------------- ---------------------------
Robert                Programming Languages
David                 Programming Languages
Robert                Databases
Hannah                Programming Languages
David                 Databases
Hannah                Databases
Tom                   Databases
Tom                   Programming Languages

8 rows selected.

SQL>
```

```
SQL> -- Question 1.c
SQL> -- Find and create all the students and the required courses they have not taken. (Join not allowed)
SQL> SELECT * FROM (SELECT DISTINCT Student_Name FROM Course_Taken), Course_Required
  2  MINUS
  3  SELECT * FROM Course_Taken;

STUDENT_NAME         COURSE
-------------------- ---------------------------
David                Programming Languages
Hannah               Databases
Tom                  Databases
Tom                  Programming Languages

SQL>
SQL> -- Question 1.d
SQL> -- Find and create all the students who cannot graduate. (Join not allowed)
SQL> SELECT DISTINCT Student_Name FROM (
  2      SELECT * FROM (SELECT DISTINCT Student_Name FROM Course_Taken), Course_Required
  3      MINUS
  4      SELECT * FROM Course_Taken
  5  );

STUDENT_NAME
--------------------
Tom
David
Hannah

SQL>
SQL> -- Question 1.e
```

```
SQL> -- Find and create all the students who can graduate. (Join not allowed)
SQL> SELECT DISTINCT Student_Name FROM Course_Taken
  2  MINUS
  3  SELECT DISTINCT Student_Name FROM (
  4      SELECT * FROM (SELECT DISTINCT Student_Name FROM Course_Taken), Course_Required
  5      MINUS
  6      SELECT * FROM Course_Taken
  7  );

STUDENT_NAME
----------------------
Robert

SQL>
SQL> -- Question 2
SQL> -- Write another three solutions for the query students who cannot graduate.
SQL>
SQL> -- Solution 2.1
SQL> SELECT DISTINCT ct1.Student_Name FROM Course_Taken ct1
  2  WHERE EXISTS(
  3      SELECT * FROM Course_Required cr
  4      WHERE NOT EXISTS(
  5          SELECT * FROM Course_Taken ct2
  6          WHERE ct2.Student_name = ct1.Student_name AND ct2.Course = cr.Course
  7      )
  8  );

STUDENT_NAME
----------------------
Tom
```

```
Hannah
David

SQL>
SQL> -- Solution 2.2
SQL> CREATE TABLE ct_distinct AS (SELECT * FROM Course_Taken GROUP BY Student_Name, Course);

Table created.

SQL> SELECT Student_Name FROM ct_distinct
  2  GROUP BY Student_Name
  3  HAVING (SELECT COUNT(*) FROM Course_Required) > COUNT(
  4      CASE WHEN Course IN (SELECT Course FROM Course_Required)
  5      THEN 1 END
  6  );

STUDENT_NAME
---------------------
Tom
David
Hannah

SQL>
SQL> -- Solution 2.3
SQL> SELECT DISTINCT Student_Name FROM (
  2      SELECT * FROM (SELECT DISTINCT Student_Name FROM Course_Taken), Course_Required
  3      MINUS
  4      SELECT * FROM Course_Taken
  5  );
```

```
STUDENT_NAME
--------------------
Tom
David
Hannah
```

```
SQL>
SQL> -- Question 3.a
SQL> -- Find the ACCOUNT_NAME having account in all banks.
SQL> SELECT DISTINCT Account_Name FROM Account_Holder
  2  MINUS
  3  SELECT DISTINCT Account_Name FROM (
  4      SELECT * FROM (SELECT DISTINCT Account_Name FROM Account_Holder),
  5      (SELECT DISTINCT Bank_name FROM Bank)
  6      MINUS
  7      SELECT Account_Name, Bank_name FROM Account_Holder
  8  );

ACCOUNT_NA
----------
ROBERT

SQL>
SQL> -- Question 3.b
SQL> -- Find the bank available in all the state.
SQL> SELECT DISTINCT Bank_name FROM Bank
  2  MINUS
  3  SELECT DISTINCT Bank_name FROM (
  4      SELECT * FROM (SELECT DISTINCT Bank_name FROM Bank),
  5      (SELECT DISTINCT State FROM Bank)
  6      MINUS
  7      SELECT Bank_name, State FROM Bank
  8  );

BANK_NAME
----------
```

```
SBI

SQL>
SQL> -- Question 3.c
SQL> -- Find the bank not available in all the state.
SQL> SELECT DISTINCT Bank_name FROM (
  2      SELECT * FROM (SELECT DISTINCT Bank_name FROM Bank),
  3      (SELECT DISTINCT State FROM Bank)
  4      MINUS
  5      SELECT Bank_name, State FROM Bank
  6  );

BANK_NAME
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ICICI

SQL>
SQL> -- Question 3.d
SQL> -- Find the ACCOUNT_NAME having account in all the state
SQL> SELECT DISTINCT Account_Name FROM Account_Holder
  2  MINUS
  3  SELECT DISTINCT Account_Name FROM (
  4      SELECT * FROM (SELECT DISTINCT Account_Name FROM Account_Holder),
  5      (SELECT DISTINCT State_Name FROM Account_Holder)
  6      MINUS
  7      SELECT Account_Name, State_Name FROM Account_Holder
  8  );

ACCOUNT_NA
----------
```

ROBERT

SQL>