SQL
PROJECT TITLE
SCHOOL MANAGEMENT SYSTEM

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Key Components of the System : Student Management:

Management Records:

Student records :

Store personal details, enrollment information, and academic performance.

Attendance Tracking:

Record daily attendance and generate attendance reports.

Grade Management:

Maintain records of student grades, transcripts, and academic progress.

Staff Management:

- **Teacher Information**: Store personal details, qualifications, and teaching schedules.
- **Payroll Management**: Handle salary details, payment schedules, and related financial records.
- **Applications Attendance and Leave** : Track staff attendance and manage leave .
- **Class Schedules**: Organize and manage class timetables, room allocations, teacher assignments.
- **Course Catalog**: Maintain a catalog of courses offered, including descriptions, prerequisites, and schedules.
- **Examination Management**: Schedule exams, manage exam venues, and store results.

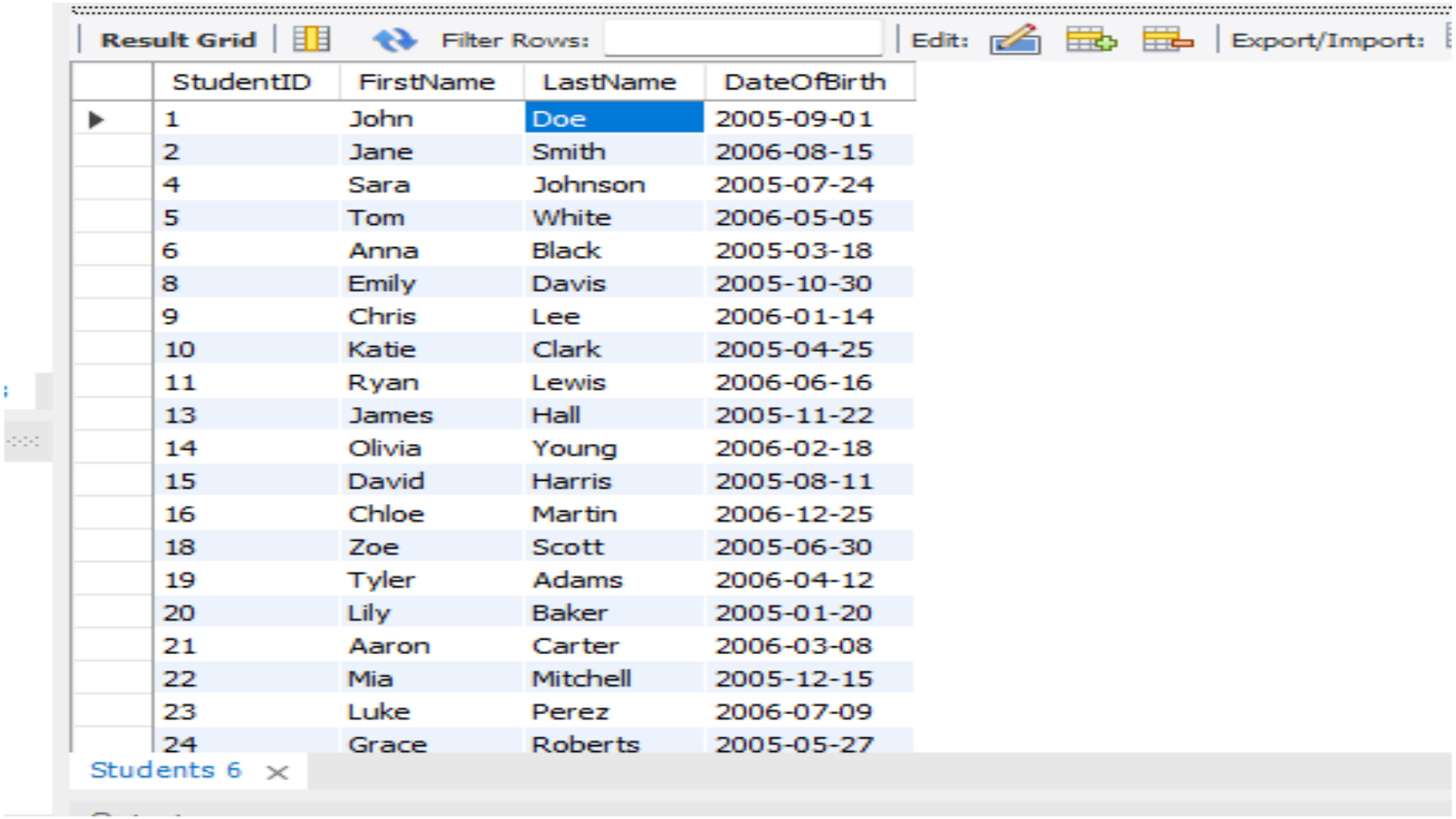
SQL Database Structure

- **Tables:**
  - Students: Stores student information.
  - Teachers: Stores teacher information.
  - Classes: Stores class schedules and details.
  - Courses: Stores course details.
  - Exams: Stores exam schedules and results.
  - Attendance: Tracks attendance records.
  - Fees: Manages fee payment records.
  - Library: Manages library inventory and transactions.

- **Relationships:**
  - One-to-many relationship between Teachers and Classes.
  - One-to-many relationship between Students and Classes.
  - Many-to-many relationship between Students and Courses, managed through a junction table.
  - One-to-many relationship between Students and Fees.

1.write a query to display to retrive the StudentID ,firstname,lastname,and dob for all students who were born after Jan 1,2005

```
SELECT StudentID, FirstName, LastName, DateOfBirth  FROM Students
WHERE DateOfBirth > '2005-01-01';
```



Result Grid | Filter Rows: | Edit: | Export/Import:

StudentID	FirstName	LastName	DateOfBirth
1	John	Doe	2005-09-01
2	Jane	Smith	2006-08-15
4	Sara	Johnson	2005-07-24
5	Tom	White	2006-05-05
6	Anna	Black	2005-03-18
8	Emily	Davis	2005-10-30
9	Chris	Lee	2006-01-14
10	Katie	Clark	2005-04-25
11	Ryan	Lewis	2006-06-16
13	James	Hall	2005-11-22
14	Olivia	Young	2006-02-18
15	David	Harris	2005-08-11
16	Chloe	Martin	2006-12-25
18	Zoe	Scott	2005-06-30
19	Tyler	Adams	2006-04-12
20	Lily	Baker	2005-01-20
21	Aaron	Carter	2006-03-08
22	Mia	Mitchell	2005-12-15
23	Luke	Perez	2006-07-09
24	Grace	Roberts	2005-05-27

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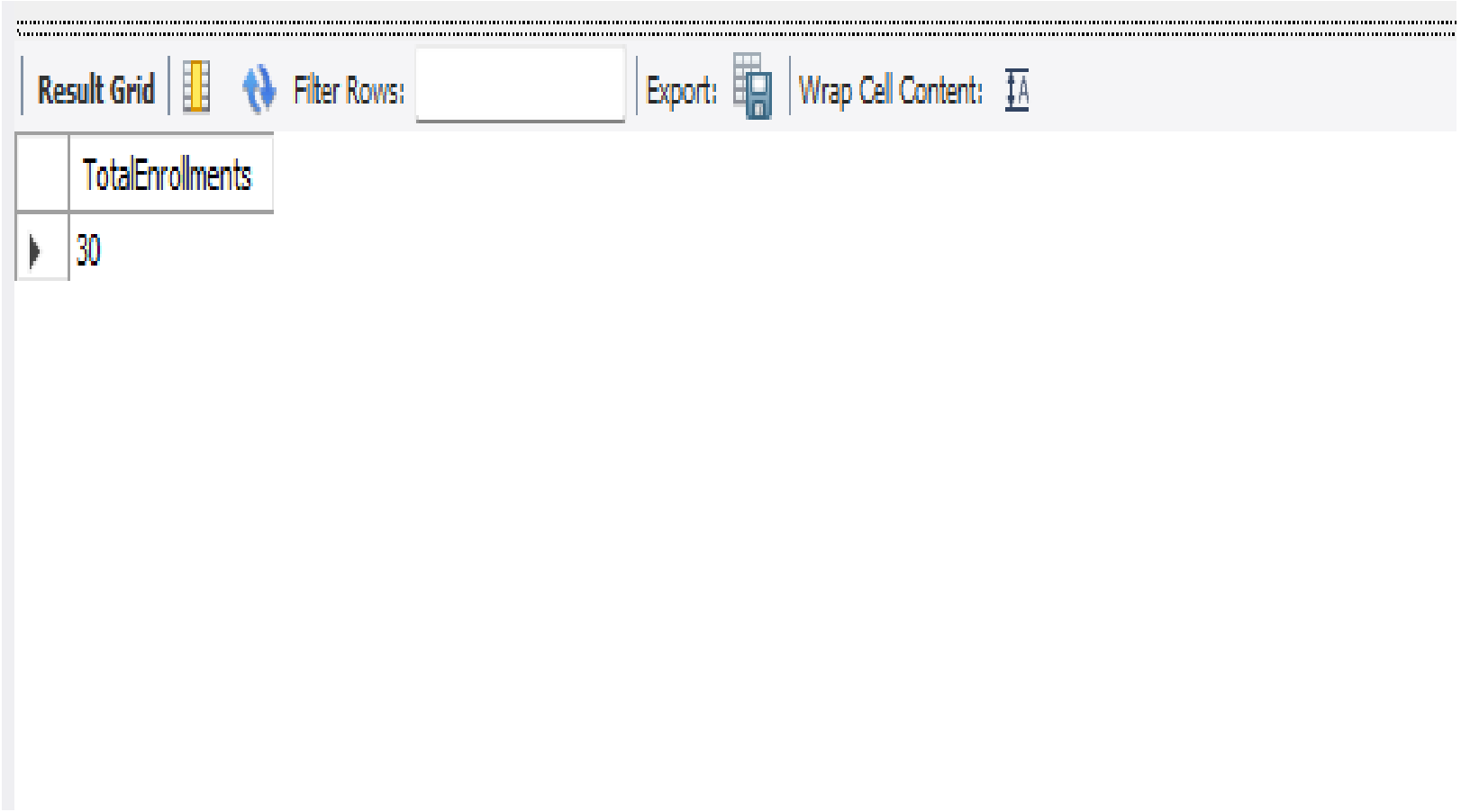
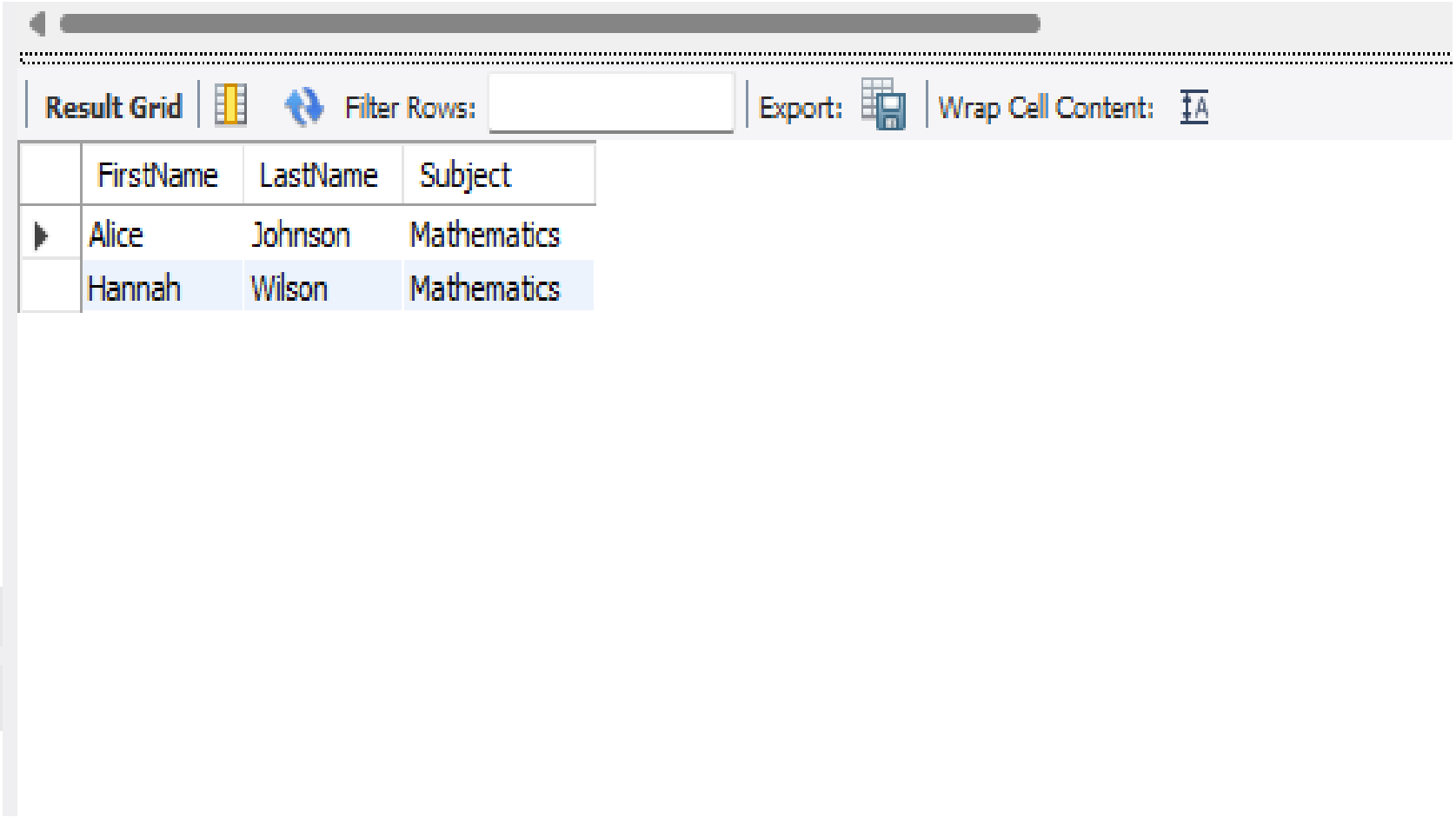
2.Write a query to display the total no of enrollments in the enrollment table

```
SELECT COUNT(*) AS TotalEnrollments
FROM Enrollments;
```



3.Write an SQL query to retrieve the first name, last name, and subject of teachers who teach Mathematics.

```
SELECT FirstName, LastName, Subject FROM Teachers WHERE Subject =
'Mathematics';
```



FirstName	LastName	Subject
Alice	Johnson	Mathematics
Hannah	Wilson	Mathematics

4.Write an SQL query to retrieve the student ID, first name, last name, and date of birth of all students, and sort the results by date of birth in ascending order.

```
SELECT StudentID, FirstName, LastName, DateOfBirth FROM Students
ORDER BY DateOfBirth ASC;
```

Result Grid | Filter Rows: | Edit: | Export/Import:

StudentID	FirstName	LastName	DateOfBirth
12	Sophia	Walker	2004-09-02
17	Ben	King	2004-10-05
25	Henry	Turner	2004-11-11
7	Mike	Green	2004-11-21
3	Sam	Brown	2004-12-10
20	Lily	Baker	2005-01-20
27	Ethan	Campbell	2005-03-17
6	Anna	Black	2005-03-18
10	Katie	Clark	2005-04-25
24	Grace	Roberts	2005-05-27
18	Zoe	Scott	2005-06-30
4	Sara	Johnson	2005-07-24
15	David	Harris	2005-08-11
29	Logan	Evans	2005-08-23
1	John	Doe	2005-09-01
8	Emily	Davis	2005-10-30
13	James	Hall	2005-11-22
22	Mia	Mitchell	2005-12-15
9	Chris	Lee	2006-01-14
26	Ava	Phillips	2006-02-01

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Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

StudentID	FirstName	LastName	DateOfBirth
15	David	Harris	2005-08-11
29	Logan	Evans	2005-08-23
1	John	Doe	2005-09-01
8	Emily	Davis	2005-10-30
13	James	Hall	2005-11-22
22	Mia	Mitchell	2005-12-15
9	Chris	Lee	2006-01-14
26	Ava	Phillips	2006-02-01
14	Olivia	Young	2006-02-18
21	Aaron	Carter	2006-03-08
19	Tyler	Adams	2006-04-12
5	Tom	White	2006-05-05
11	Ryan	Lewis	2006-06-16
23	Luke	Perez	2006-07-09
2	Jane	Smith	2006-08-15
28	Isabella	Parker	2006-09-04
30	Ella	Edwards	2006-10-14
16	Chloe	Martin	2006-12-25
NULL	NULL	NULL	NULL

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5.Write an SQL query to retrieve the student ID, first name, last name, and date of birth of all students, and sort the results by date of birth in descending order.

SELECT StudentID, FirstName, LastName, DateOfBirth FROM Students ORDER BY DateOfBirth DESC;

Result Grid | Filter Rows: | Edit: | Export/Imp

StudentID	FirstName	LastName	DateOfBirth
16	Chloe	Martin	2006-12-25
30	Ella	Edwards	2006-10-14
28	Isabella	Parker	2006-09-04
2	Jane	Smith	2006-08-15
23	Luke	Perez	2006-07-09
11	Ryan	Lewis	2006-06-16
5	Tom	White	2006-05-05
19	Tyler	Adams	2006-04-12
21	Aaron	Carter	2006-03-08
14	Olivia	Young	2006-02-18
26	Ava	Phillips	2006-02-01
9	Chris	Lee	2006-01-14
22	Mia	Mitchell	2005-12-15
13	James	Hall	2005-11-22
8	Emily	Davis	2005-10-30
1	John	Doe	2005-09-01
29	Logan	Evans	2005-08-23
15	David	Harris	2005-08-11
4	Sara	Johnson	2005-07-24
18	Zoe	Scott	2005-06-30

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Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

StudentID	FirstName	LastName	DateOfBirth
22	Mia	Mitchell	2005-12-15
13	James	Hall	2005-11-22
8	Emily	Davis	2005-10-30
1	John	Doe	2005-09-01
29	Logan	Evans	2005-08-23
15	David	Harris	2005-08-11
4	Sara	Johnson	2005-07-24
18	Zoe	Scott	2005-06-30
24	Grace	Roberts	2005-05-27
10	Katie	Clark	2005-04-25
6	Anna	Black	2005-03-18
27	Ethan	Campbell	2005-03-17
20	Lily	Baker	2005-01-20
3	Sam	Brown	2004-12-10
7	Mike	Green	2004-11-21
25	Henry	Turner	2004-11-11
17	Ben	King	2004-10-05
12	Sophia	Walker	2004-09-02
NULL	NULL	NULL	NULL

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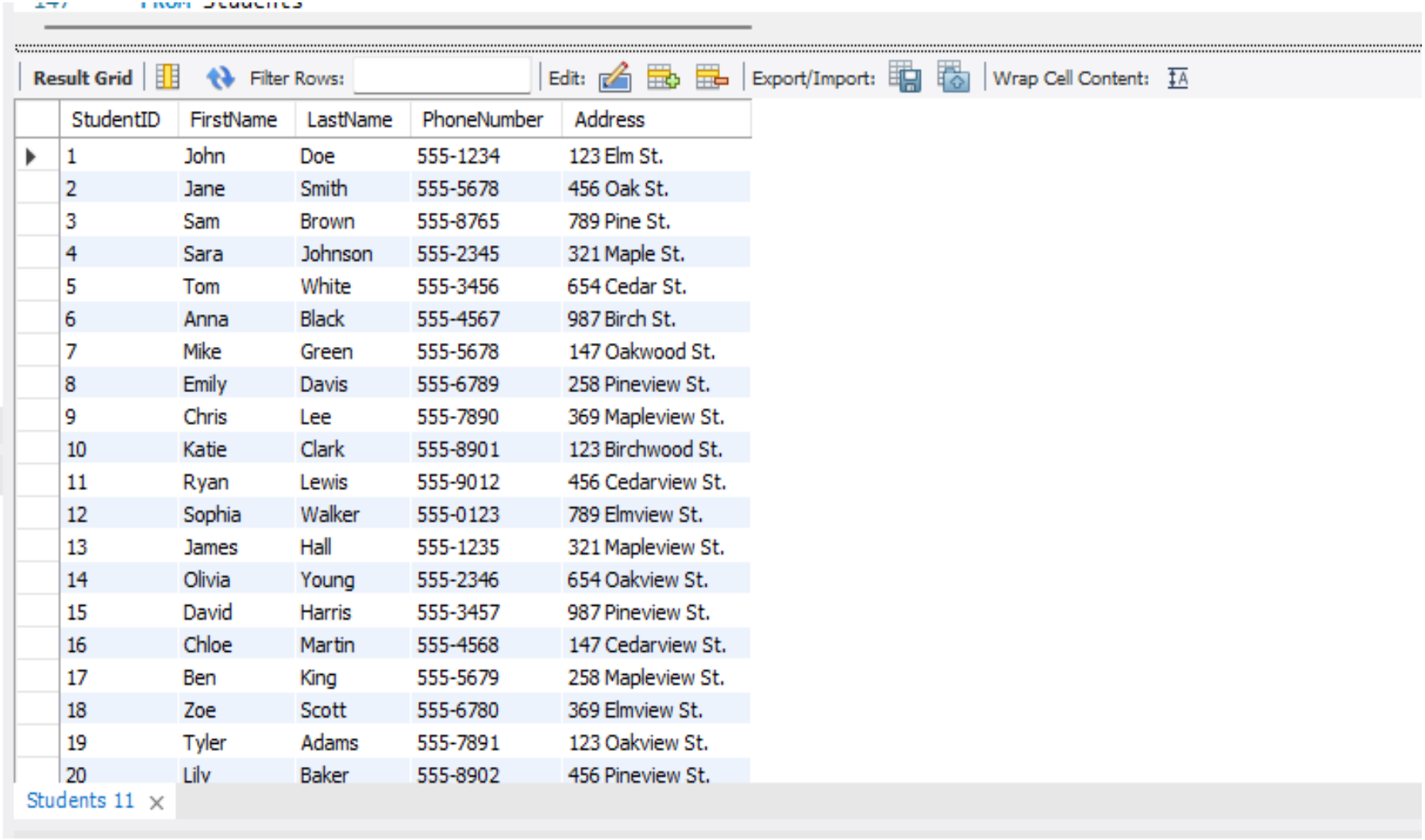
6. Write an SQL query to retrieve the student ID, first name, last name, phone number, and address of all students.

```
SELECT StudentID, FirstName, LastName, PhoneNumber, Address
FROM Students;
```



Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

StudentID	FirstName	LastName	PhoneNumber	Address
1	John	Doe	555-1234	123 Elm St.
2	Jane	Smith	555-5678	456 Oak St.
3	Sam	Brown	555-8765	789 Pine St.
4	Sara	Johnson	555-2345	321 Maple St.
5	Tom	White	555-3456	654 Cedar St.
6	Anna	Black	555-4567	987 Birch St.
7	Mike	Green	555-5678	147 Oakwood St.
8	Emily	Davis	555-6789	258 Pineview St.
9	Chris	Lee	555-7890	369 Mapleview St.
10	Katie	Clark	555-8901	123 Birchwood St.
11	Ryan	Lewis	555-9012	456 Cedarview St.
12	Sophia	Walker	555-0123	789 Elmview St.
13	James	Hall	555-1235	321 Mapleview St.
14	Olivia	Young	555-2346	654 Oakview St.
15	David	Harris	555-3457	987 Pineview St.
16	Chloe	Martin	555-4568	147 Cedarview St.
17	Ben	King	555-5679	258 Mapleview St.
18	Zoe	Scott	555-6780	369 Elmview St.
19	Tyler	Adams	555-7891	123 Oakview St.
20	Lily	Baker	555-8902	456 Pineview St.

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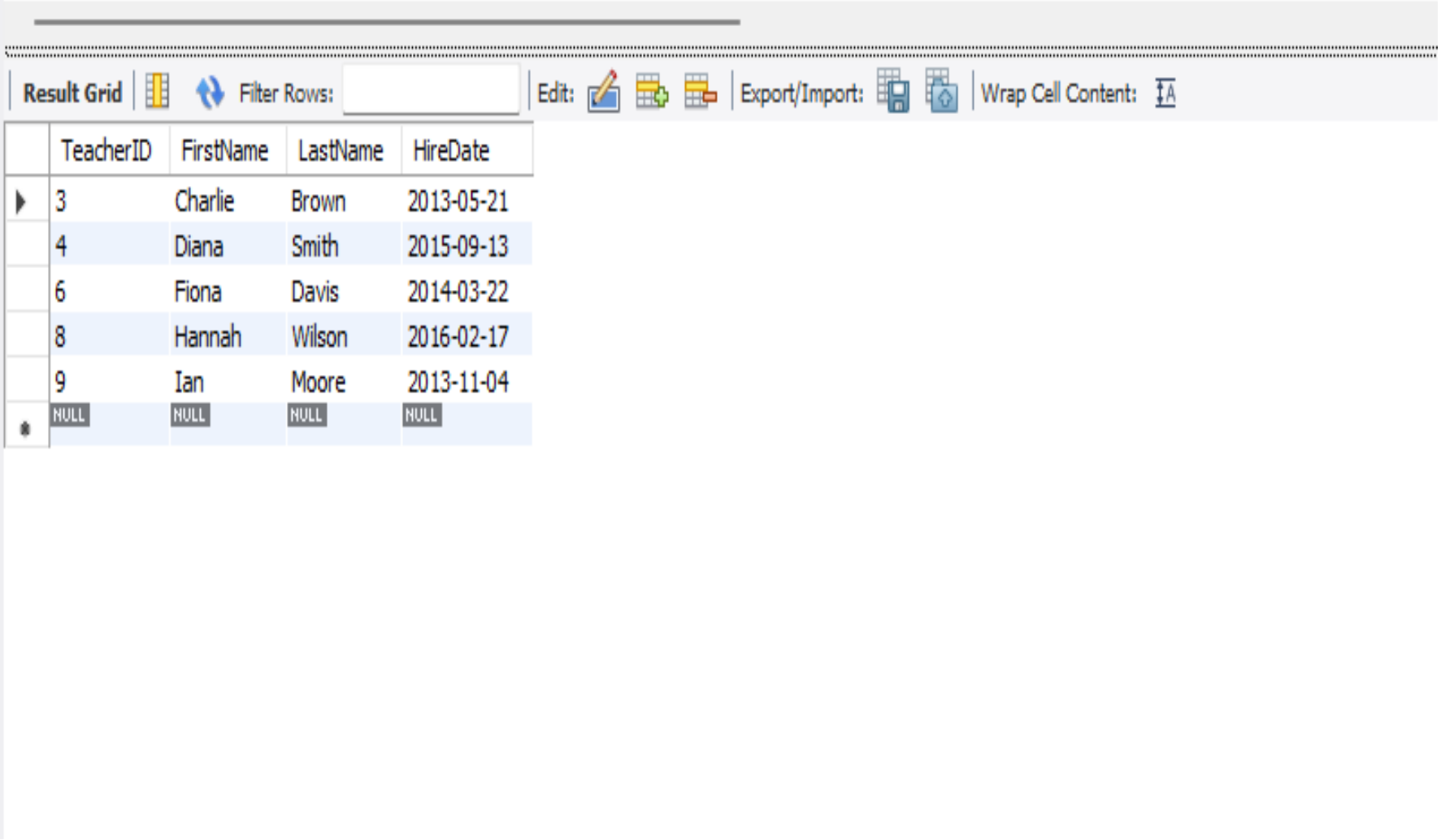
Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

StudentID	FirstName	LastName	PhoneNumber	Address
13	James	Hall	555-1235	321 Mapleview St.
14	Olivia	Young	555-2346	654 Oakview St.
15	David	Harris	555-3457	987 Pineview St.
16	Chloe	Martin	555-4568	147 Cedarview St.
17	Ben	King	555-5679	258 Mapleview St.
18	Zoe	Scott	555-6780	369 Elmview St.
19	Tyler	Adams	555-7891	123 Oakview St.
20	Lily	Baker	555-8902	456 Pineview St.
21	Aaron	Carter	555-9013	789 Cedarview St.
22	Mia	Mitchell	555-0124	321 Birchview St.
23	Luke	Perez	555-1236	654 Elmview St.
24	Grace	Roberts	555-2347	987 Oakview St.
25	Henry	Turner	555-3458	147 Mapleview St.
26	Ava	Phillips	555-4569	258 Cedarview St.
27	Ethan	Campbell	555-5670	369 Birchview St.
28	Isabella	Parker	555-6781	123 Elmview St.
29	Logan	Evans	555-7892	456 Oakview St.
30	Ella	Edwards	555-8903	789 Mapleview St.
NULL	NULL	NULL	NULL	NULL

7.SELECT TeacherID, FirstName, LastName, HireDateFROM Teachers WHERE HireDate > '2012-08-15';

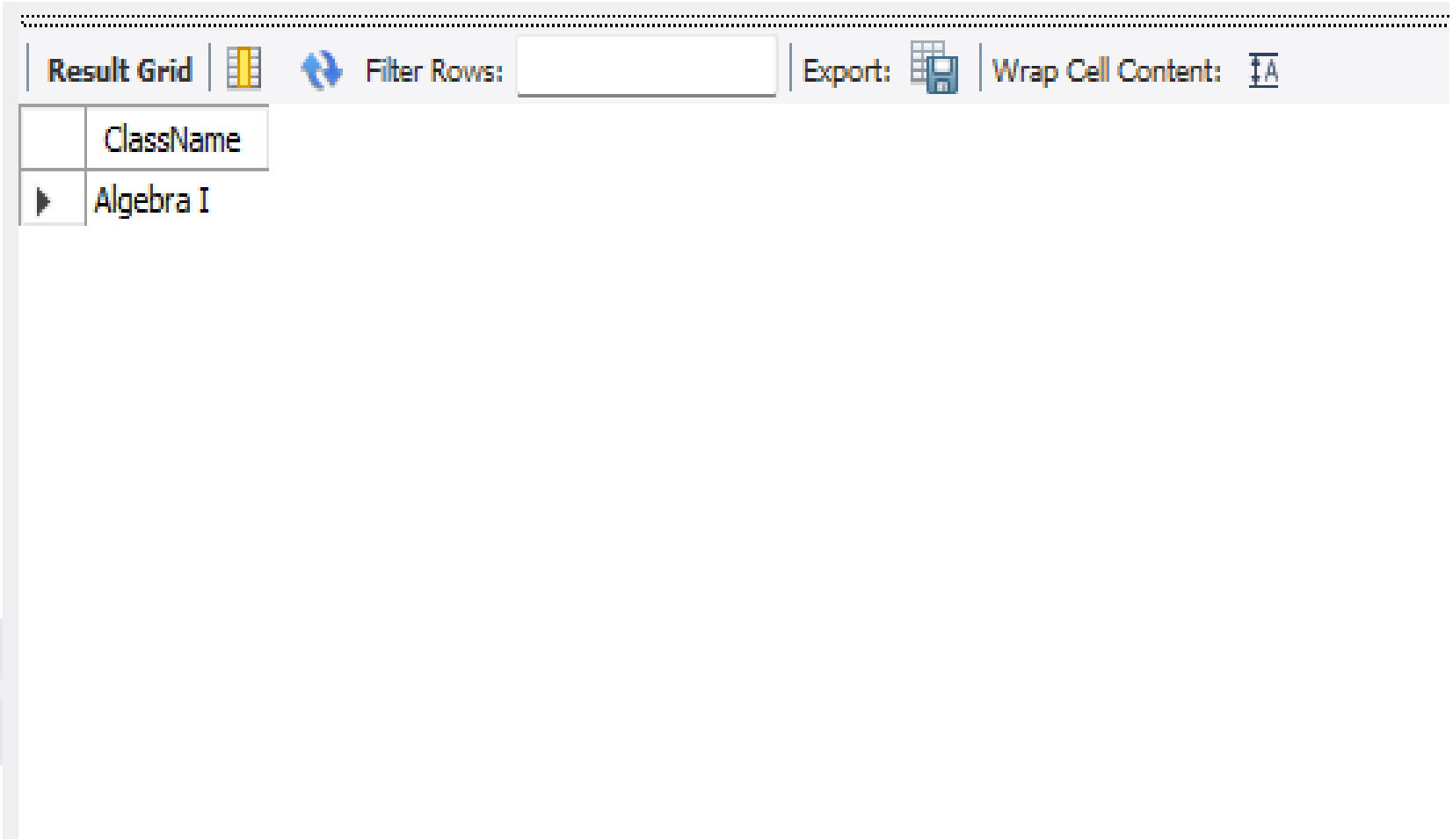


Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

TeacherID	FirstName	LastName	HireDate
3	Charlie	Brown	2013-05-21
4	Diana	Smith	2015-09-13
6	Fiona	Davis	2014-03-22
8	Hannah	Wilson	2016-02-17
9	Ian	Moore	2013-11-04
NULL	NULL	NULL	NULL

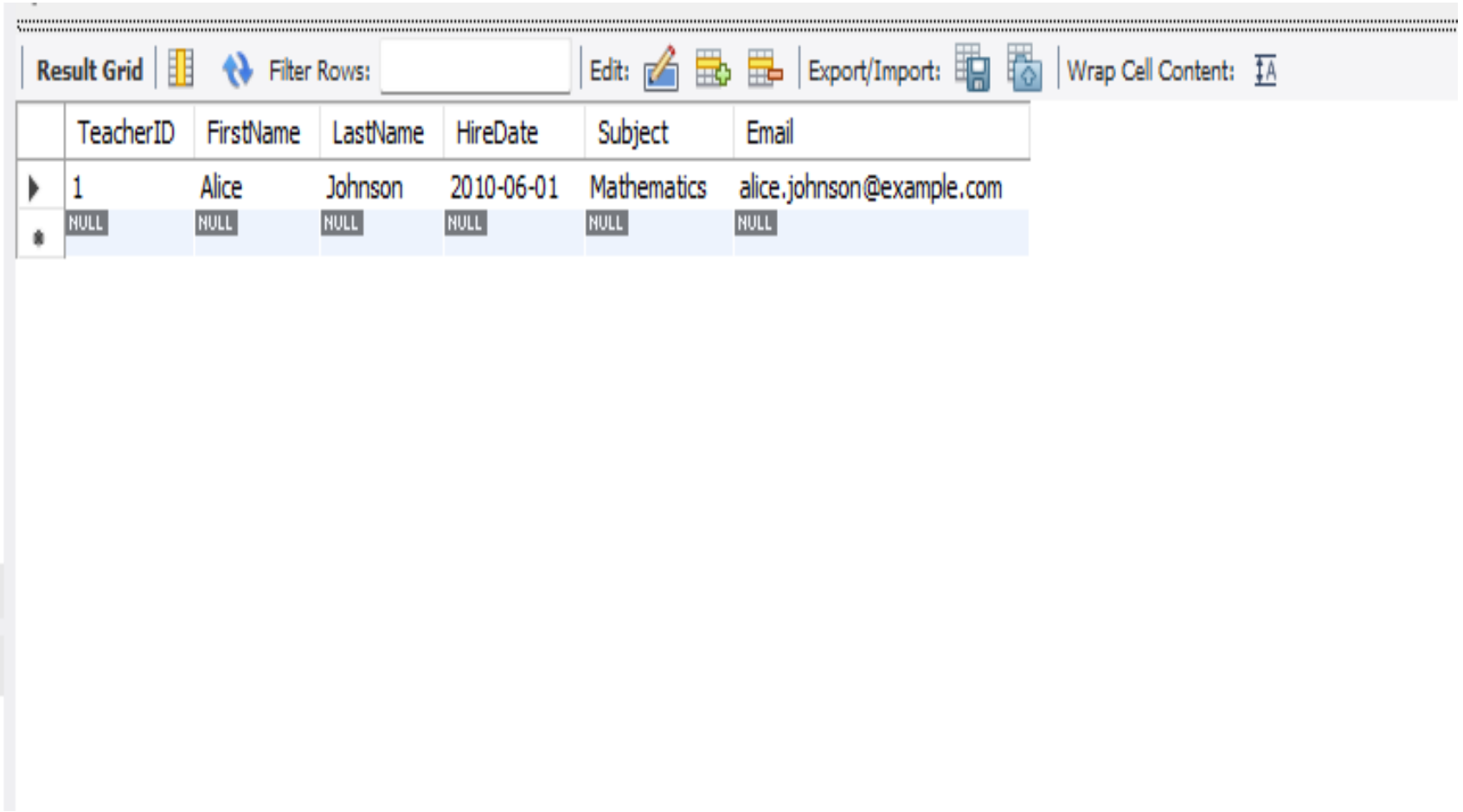
8.Write an SQL query to retrieve the class names of all classes taught by the teacher whose first name is Alice.

SELECT ClassName FROM Classes where TeacherID=(SELECT TeacherID FROM Teachers where Firstname='Alice');



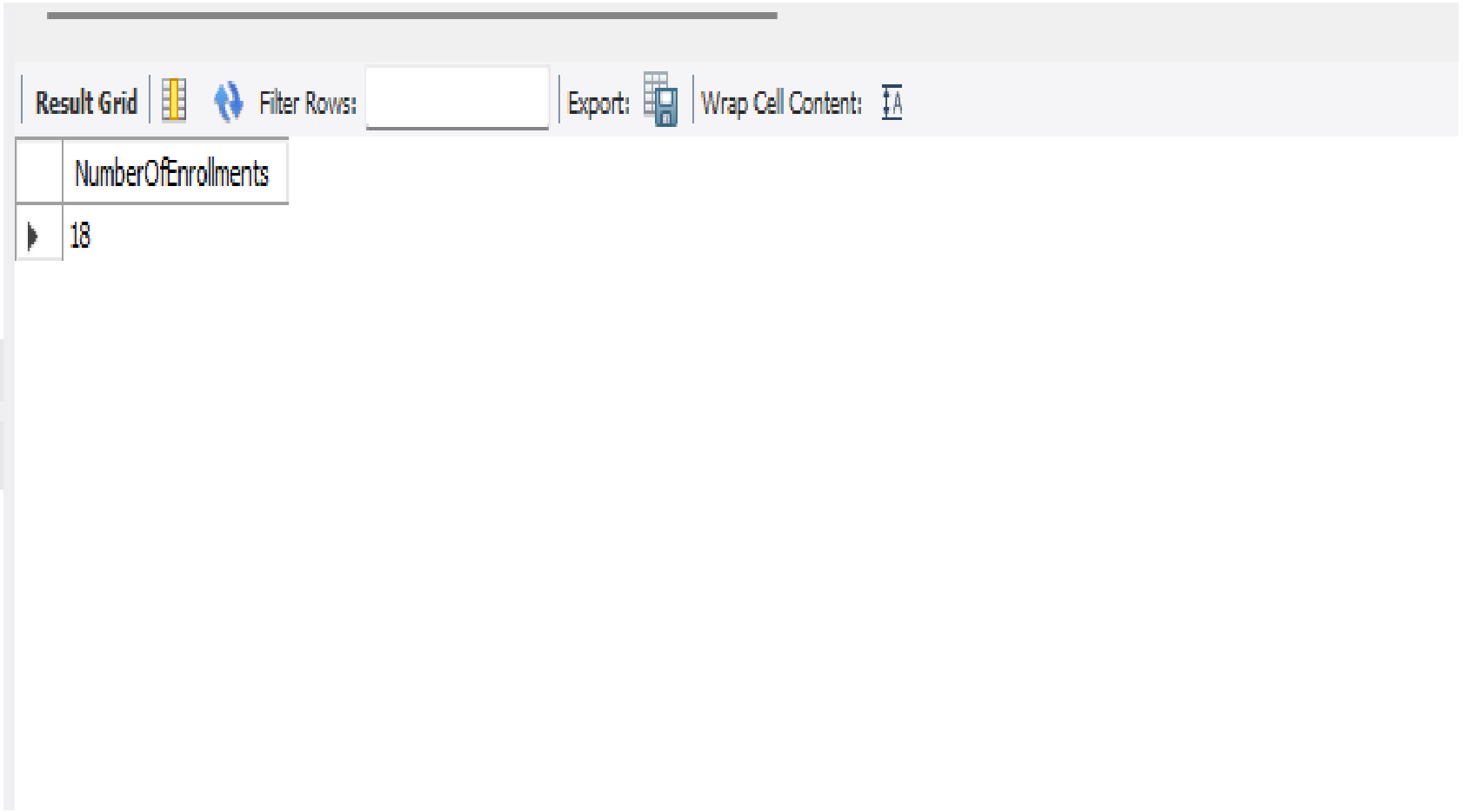
9.Write an SQL query to retrieve all columns from the Students table for students, whose first name starts with the letter 'A'.

SELECT *FROM Teachers WHERE FirstName LIKE 'A%';



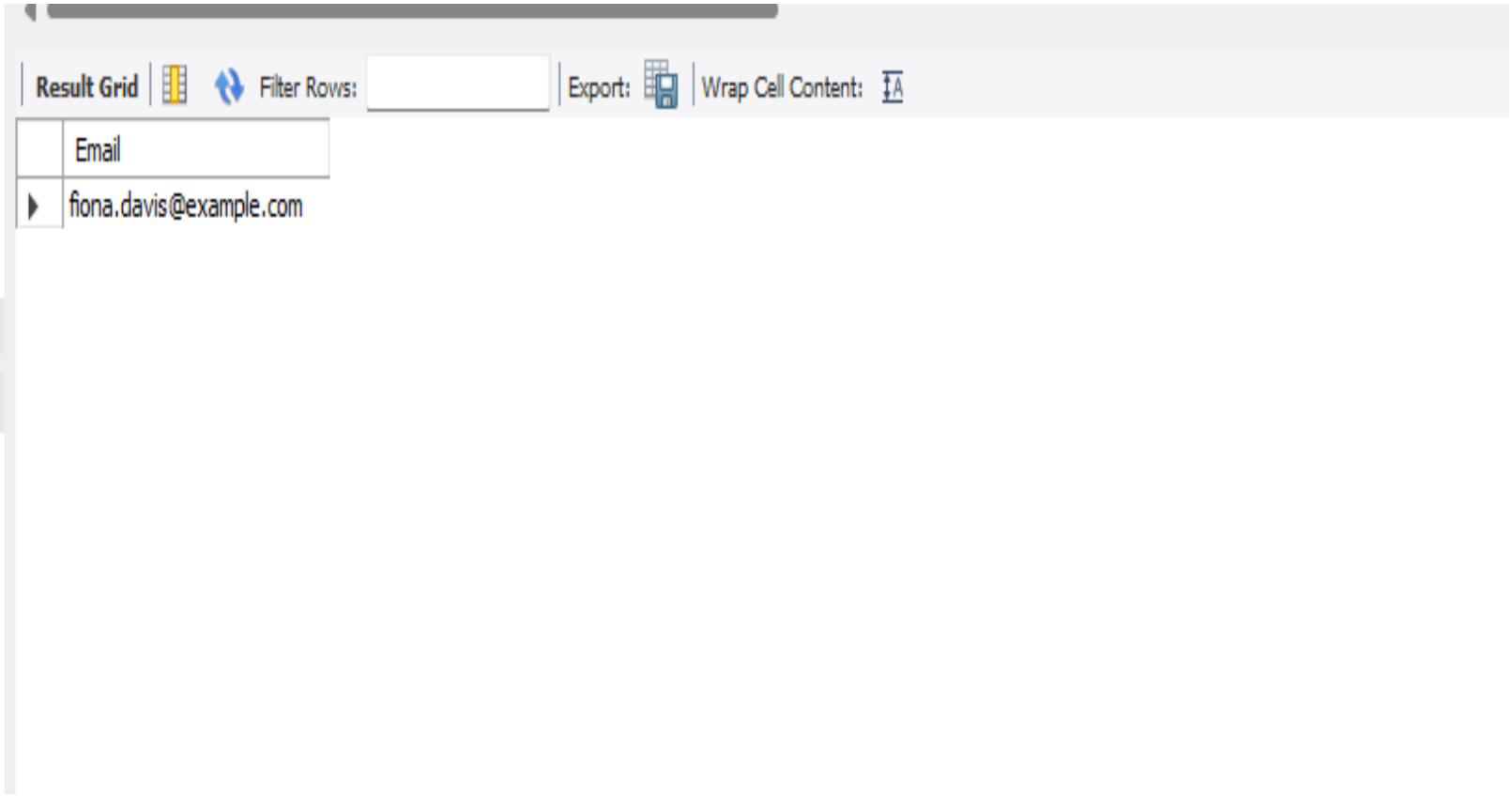
10.Write an SQL query to count the number of enrollments where the grade is not 'A'.

```
SELECT COUNT(*) AS NumberOfEnrollments FROM Enrollments
WHERE Grade not in  'A';
```



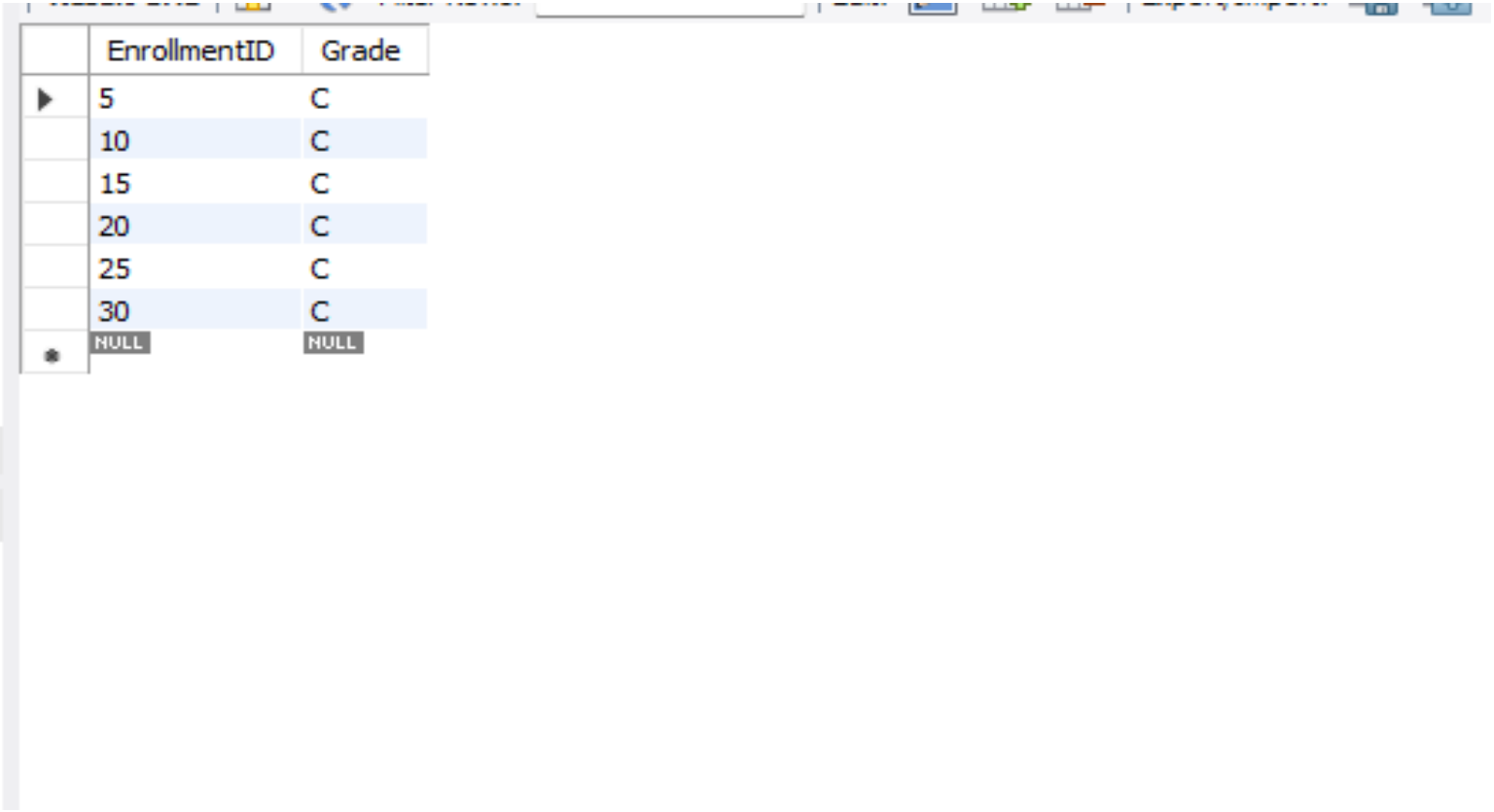
11.Write an SQL query to retrieve the email addresses of teachers whose first name is Fiona.

```
SELECT Email FROM Teachers WHERE FirstName = 'Fiona';
```



12.Write an SQL query to retrieve the enrollment ID and grade of enrollments where the grade is higher than all grades that are 'B' or lower in the Enrollments table.

SELECT EnrollmentID, Grade FROM EnrollmentsWHERE Grade > SELECT MAX(Grade) FROM Enrollments WHERE Grade <= 'B');



EnrollmentID	Grade
5	C
10	C
15	C
20	C
25	C
30	C
NULL	NULL

THANK YOU