Essentials Lab 9
Exercise 1

1) Download and unzip the files for this lab.
   https://www.snowflakeuniversity.com/EL9/downloads/Essentials_Lesson_9_Files.zip

2) Load the script named **Lesson_9_File_1.txt** into a new worksheet.

3) Run the statements one at a time or all together, based on your own preference.

NOTE: We've input the first two author records manually by assigning a 1 and 2 as the **AUTHOR_UID**s, but this is neither efficient nor practical, long term.

In the next step we create a "counter," called a SEQUENCE, to supply the unique numbers to each new author record.

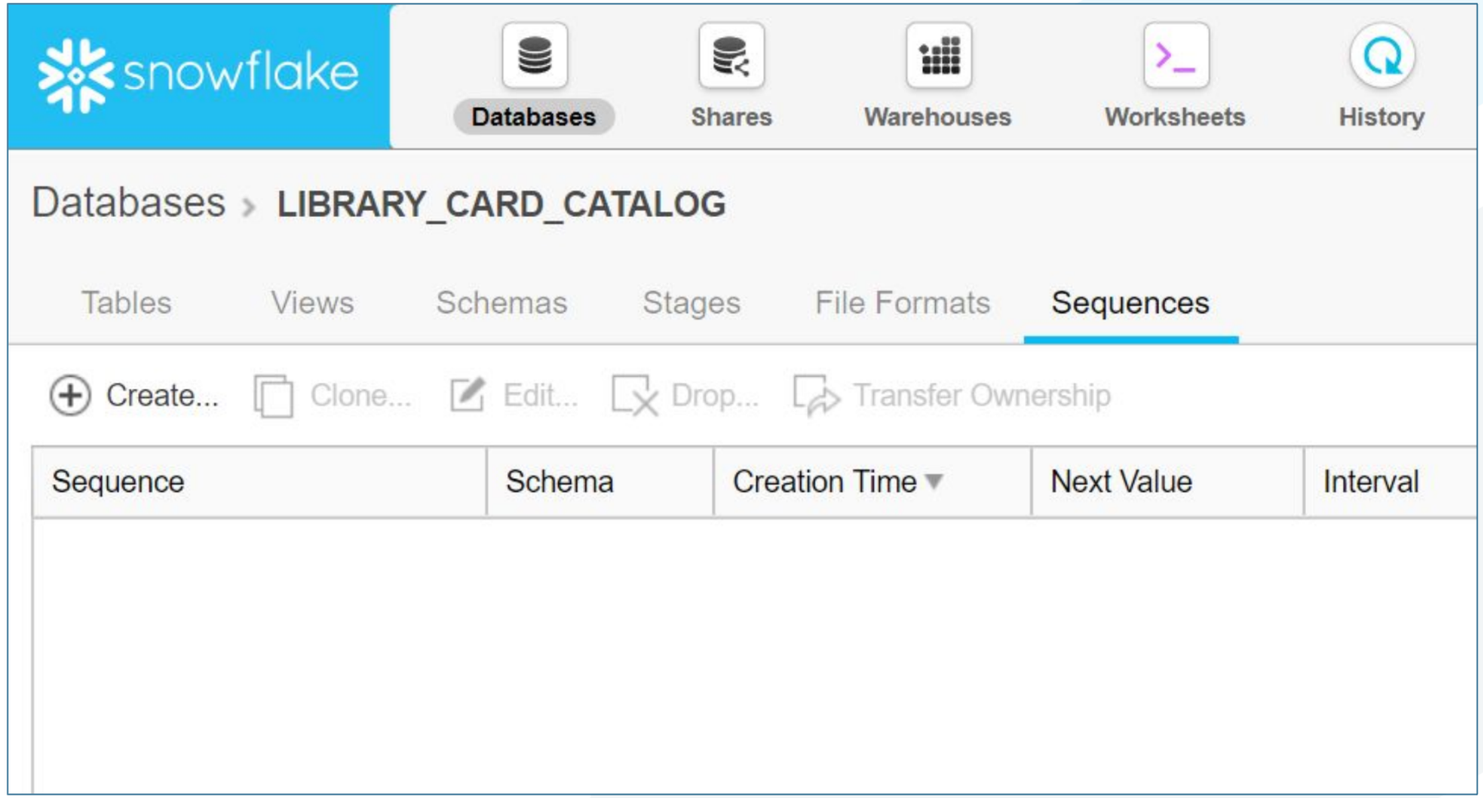
Essentials Lab 9
Exercise 2

1) Click **[Databases]** in the **Navigation Ribbon**.

2) Click ***LIBRARY_CARD_CATALOG*** to drill into that database.

3) Click the **[Sequences]** tab.

4) Click **[Create]**.



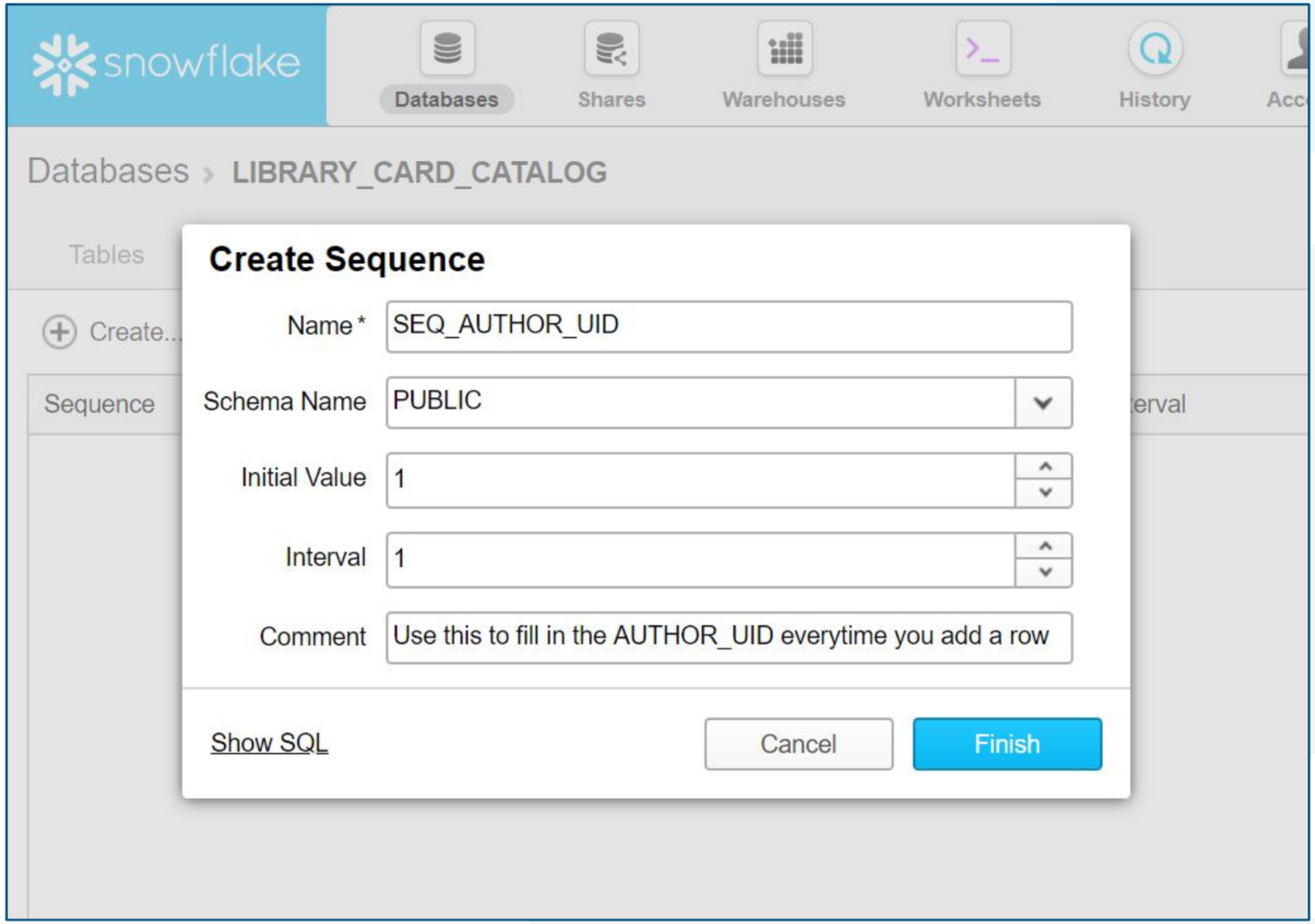
Essentials Lab 9
Exercise 3

1) Type in the name ***SEQ_AUTHOR_UID***.

2) Leave the defaults in **[Schema Name]**, **[Initial Value]** and **[Interval]** fields.

3) Add a **[Comment]** to remind yourself of how you will use this Sequence. (OPTIONAL).

4) Click **[Finish]**.



Essentials Lab 9
Exercise 4

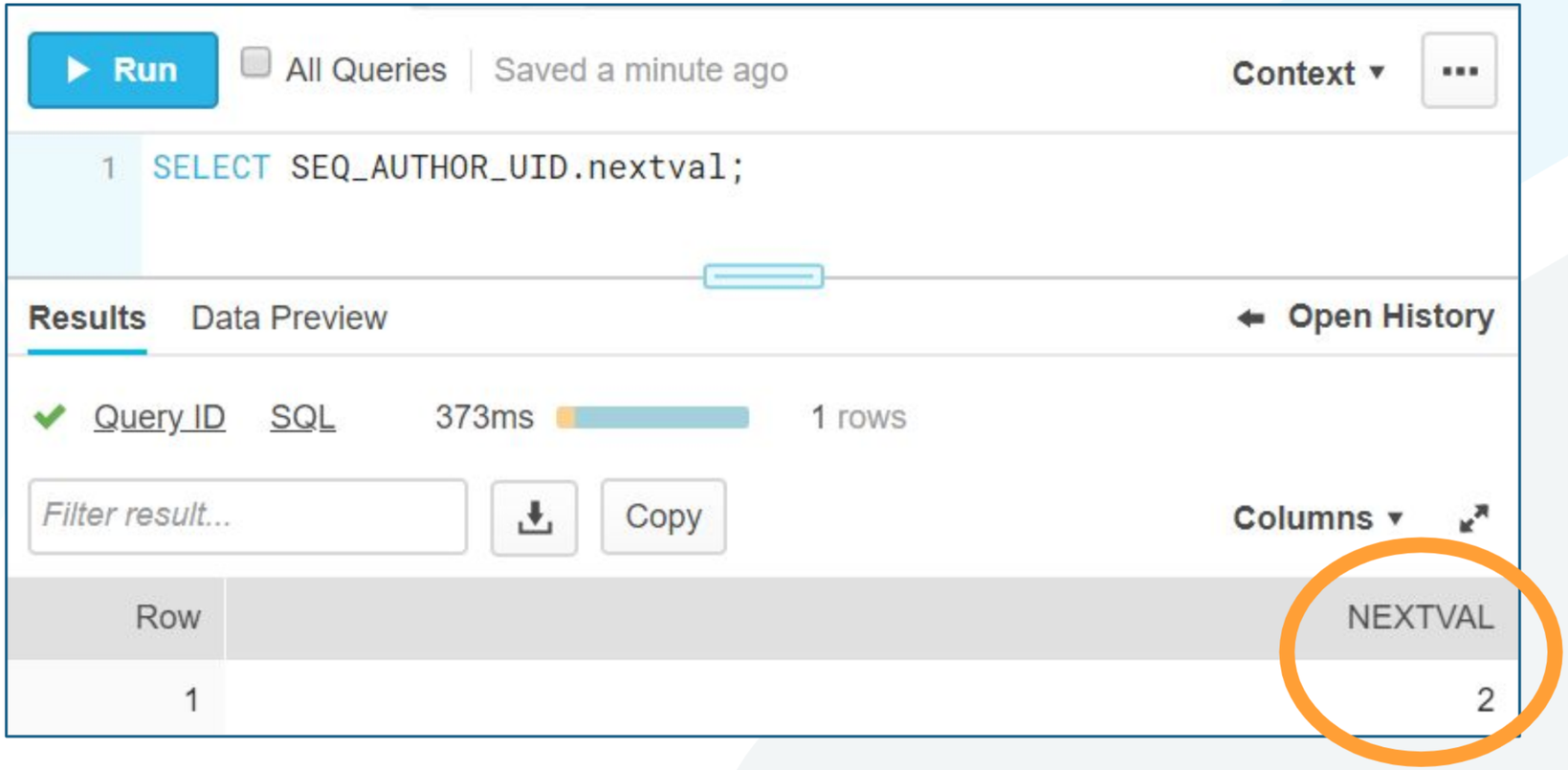
1) Click **[Worksheets]** in the **Navigation Ribbon**.

2) Make sure the **Worksheet Context** is set to use the new ***LIBARARY_CARD_CATALOG*** database.

3) Type a **`SELECT`** statement like the one shown here, into a worksheet.

4) Click **[Run]**.

5) Note the ***NEXTVAL*** column in the **Results Pane**, then click **[Run]** again.



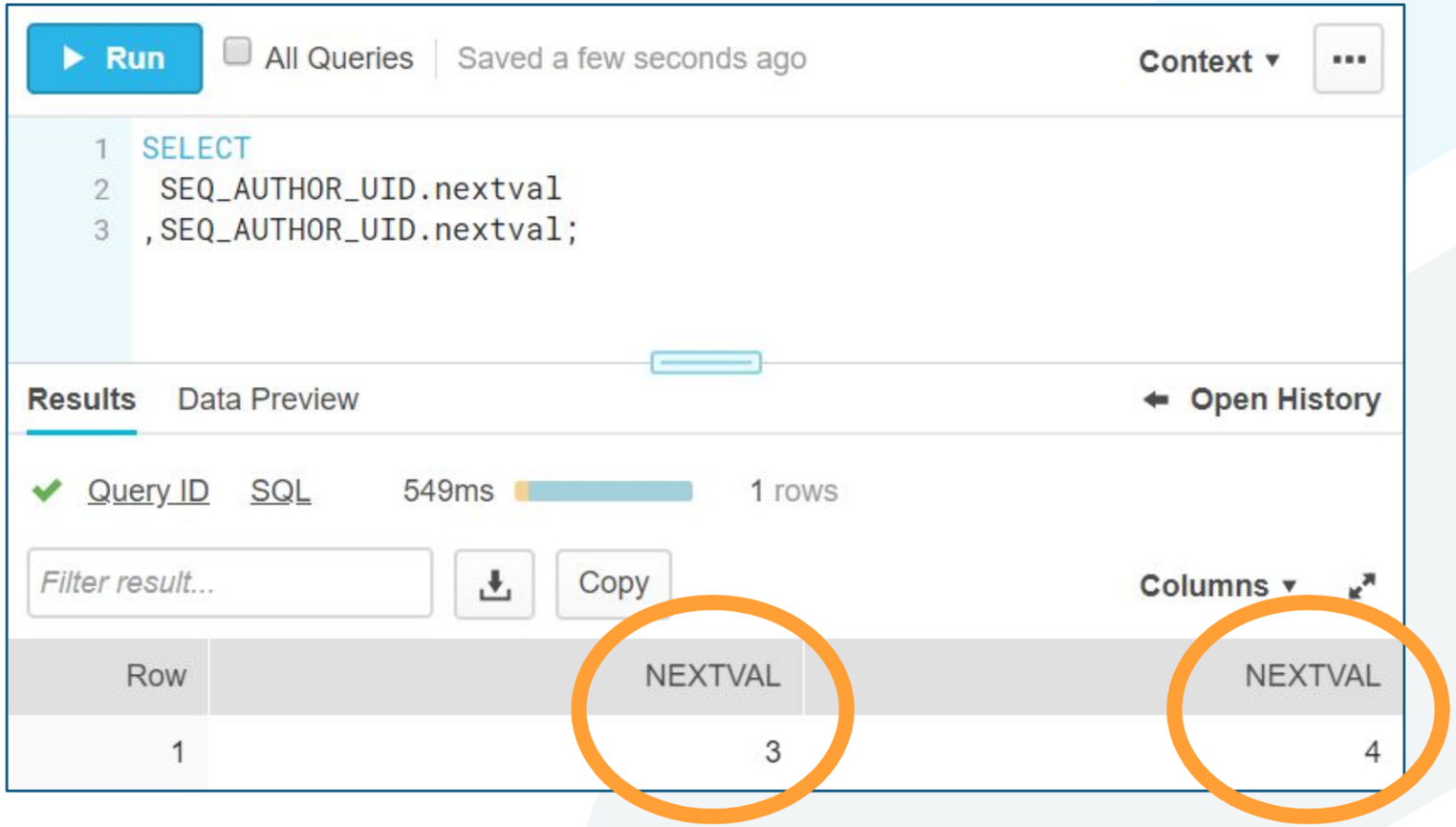
NOTE: Every time you refer to the **Sequence's Next Value** in a select statement, it will increment. You can run this statement as many times as you'd like. We will reset the counter before we use the value in a table.

Essentials Lab 9
Exercise 5

1) Change the select statement so that you refer to the **Sequence's Next Value** twice in the same select statement.

2) Click **[Run]**.

3) Click **[Run]** as many times as you'd like, in order to understand the effect of using the **Sequence's Next Value** in this way.



NOTE: Two **Sequence Next Values** used in the same query may skip over some values and leave them unused. This is a safety feature to make sure no value is used more than once. When used one at a time, gaps almost never occur but are NOT guaranteed not to occur.

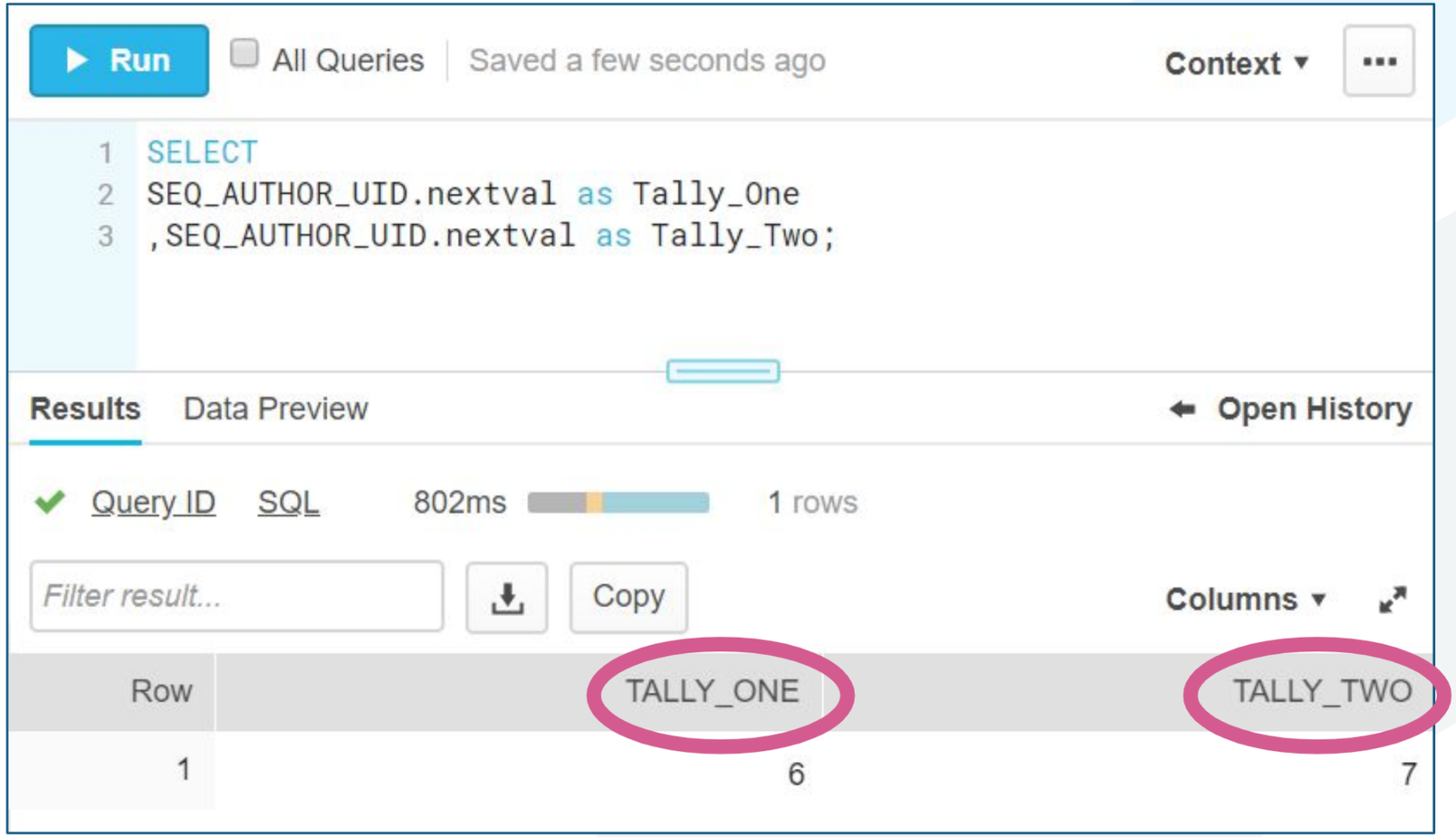
Essentials Lab 9
Exercise 6

1) Add the keyword **`AS`** to each column and assign names to the output values such as **`Tally_One`** and **`Tally_Two`** shown here.

2) Click **[Run]**.

3) Notice the assigned names are used as column headings in the **Results Pane**.

4) Click **[Run]** again. Repeat as many times as you'd like in order to understand the effect of using the **Sequence's Next Value** in this way.



Essentials Lab 9
Exercise 7

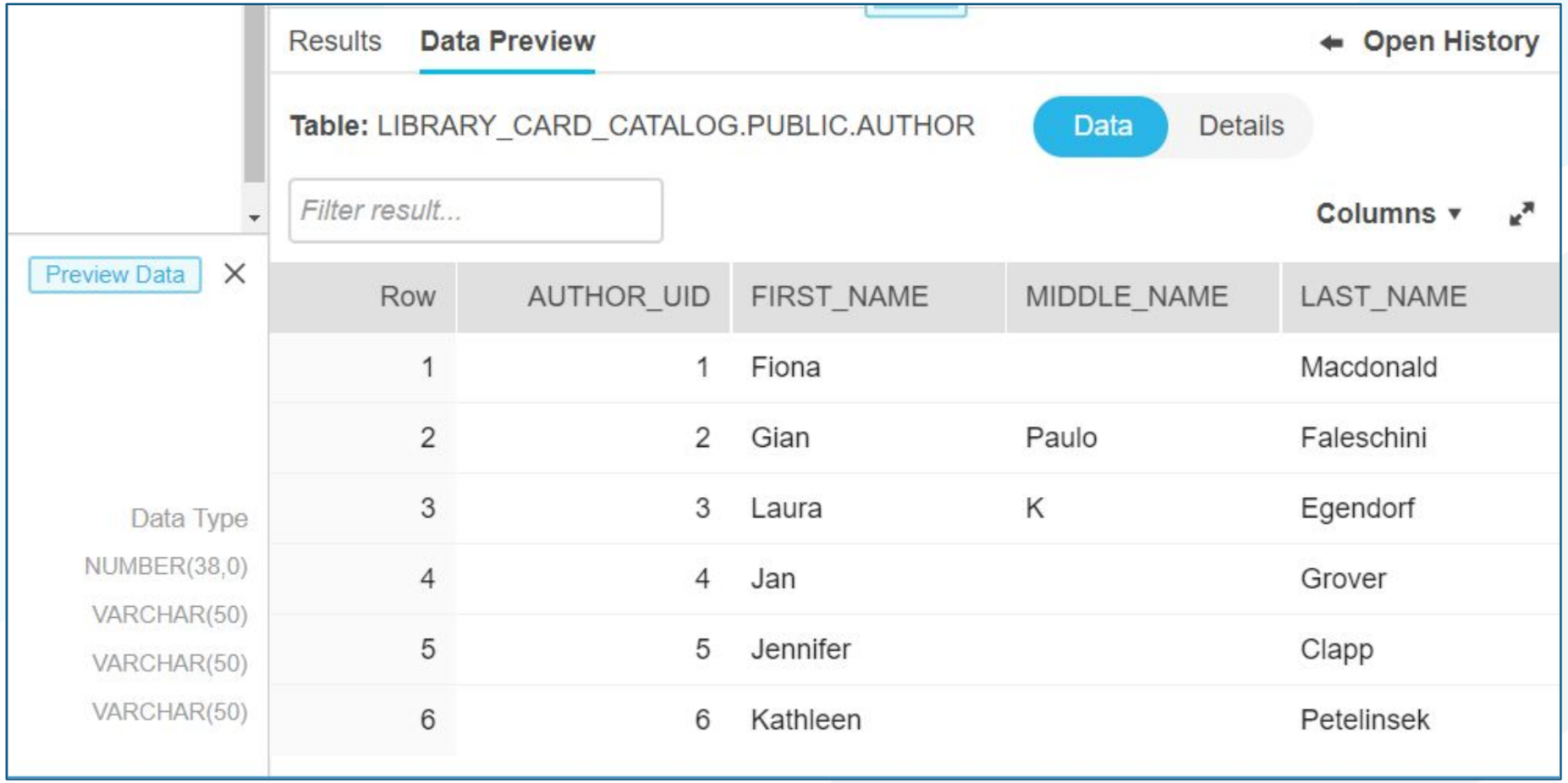
1) Load the file **Lesson_9_File_2.txt** into a new worksheet.

2) Run each statement separately or as a group, according to your preference.

Run | All Queries | Saved a few seconds ago

```
1  USE DATABASE LIBRARY_CARD_CATALOG;
2
3  //Drop and recreate the counter so that it starts at 3 (so we can add the
4  //other author records)
5  CREATE OR REPLACE SEQUENCE "LIBRARY_CARD_CATALOG"."PUBLIC"."SEQ_AUTHOR_UID"
6  START 3
7  INCREMENT 1
8  COMMENT = 'Use this to fill in the AUTHOR_UID everytime you add a row';
9
10 //Add the remaining author records and use the nextval function instead
11 //of putting in the numbers
12 INSERT INTO AUTHOR(AUTHOR_UID,FIRST_NAME,MIDDLE_NAME, LAST_NAME)
13 Values
14 (SEQ_AUTHOR_UID.nextval, 'Laura', 'K','Egendorf')
15 ,(SEQ_AUTHOR_UID.nextval, 'Jan', '','Grover')
16 ,(SEQ_AUTHOR_UID.nextval, 'Jennifer', '','Clapp')
17 ,(SEQ_AUTHOR_UID.nextval, 'Kathleen', '','Petelinsek');
```

Essentials Lab 9
Exercise 8



1) Preview the **AUTHOR** table.

2) Notice that the `SEQ_AUTHOR_UID.nextval` function has resulted in a sequential series of values for the AUTHOR_UID in each record.

Essentials Lab 9
Exercise 9

1) Load the file **Lesson_9_File_3.txt** into a new worksheet.

2) Run each statement separately or as a group, according to your preference.

NOTE: By defining a **DEFAULT** value for the **BOOK_UID** field, and setting it to your **Sequence's Next Value**, you make sure that each time a row is added to the table, it will get an automatically generated **Unique ID** assigned by the **Sequence**.

Run | All Queries | Saved a few seconds ago

```
1  // Create a new sequence, this one will be a counter for the book table
2  CREATE OR REPLACE SEQUENCE "LIBRARY_CARD_CATALOG"."PUBLIC"."SEQ_BOOK_UID"
3  START 1
4  INCREMENT 1
5  COMMENT = 'Use this to fill in the BOOK_UID everytime you add a row';
6
7  // Create the book table and use the NEXTVAL as the
8  // default value each time a row is added to the table
9  CREATE OR REPLACE TABLE BOOK
10 ( BOOK_UID NUMBER DEFAULT SEQ_BOOK_UID.nextval
11  ,TITLE VARCHAR(50)
12  ,YEAR_PUBLISHED NUMBER(4,0)
13 );
14
15 // Insert records into the book table
16 // You don't have to list anything for the
17 // BOOK_UID field because the default setting
18 // will take care of it for you
19 INSERT INTO BOOK(TITLE,YEAR_PUBLISHED)
20 VALUES
21  ('Food',2001)
22 ,('Food',2006)
23 ,('Food',2008)
24 ,('Food',2016)
25 ,('Food',2015);
26
```

Essentials Lab 9
Exercise 10

1) Load the file **Lesson_9_File_4.txt** into a new worksheet.

2) Run each statement separately or as a group, according to your preference.

3) Navigate to the ***BOOK_TO_AUTHOR*** table in the Navigation Tree of the Worksheets area and click **PREVIEW** to see the ***BOOK_TO_AUTHOR*** table.

NOTE: You have now created a small, normalized relational database. If you are new to the concept of 3NF database design, you may want to research the concept further.