

CPSC 304 Project Cover Page

Milestone #: ____4____

Date: ____01/12/23____

Group Number: ____126____

Name	Student Number	CS Alias (Userid)	Preferred E-mail Address
Tyler Kerswell	52101672	z8v1d	tylerkerswell@gmail.com
Julie Ryu	16183253	t4v5i	juliryu2@gmail.com
Natalia Garcia-Arias	54821806	m1p7e	garciarias.natalia@gmail.com

By typing our names and student numbers in the above table, we certify that the work in the attached assignment was performed solely by those whose names and student IDs are included above. (In the case of Project Milestone 0, the main purpose of this page is for you to let us know your e-mail address, and then let us assign you to a TA for your project supervisor.)

In addition, we indicate that we are fully aware of the rules and consequences of plagiarism, as set forth by the Department of Computer Science and the University of British Columbia

a)

A short description of the final project, and what it accomplished

Our database organizes data related to various aspects of art gallery operations including event organization, exhibit planning, employee and project management. From the main window labeled 'Art Gallery Operations,' users are able to choose either which transactions to perform or which information to view.

b)

A description of how your final schema differed from the schema you turned in. If the final schema differed, explain why.

country has been added to the donor table in order to better make use of the aggregation by having query

Project(projectID: integer, title: varchar(50), budget: integer, status: varchar(50), startDate: varchar(50), endDate: varchar(50))

-> the datatype of attribute 'budget' has been changed from double to integer so that users do not have to input decimal numbers, and instead only have to input whole numbers.

c)

A copy of the schema and screenshots that show what data is present in each relation after the SQL script from item #2 is run.

List the relational schemas with the primary key attributes underlined and foreign keys bolded.

Artist(artistID: integer, name: varchar(50), dateOfBirth: varchar(50), dateOfDeath: varchar(50), skillLevel: integer)


	<u>ARTISTID</u>	NAME	DATEOFBIRTH	DATEOFDEATH	SKILLLEVEL
1	51	Andy Warhol	August 6, 1928	February 22, 1987	76
2	52	Leonardo Da Vinci	April 15, 1452	May 2, 1519	96
3	53	Pablo Picasso	October 25, 1881	April 8, 1973	86
4	54	Vincent van Gogh	March 30, 1853	July 29, 1890	92
5	55	Gerhard Richter	February 9, 1932	<null>	68

Artwork(artworkID: integer, **artistID**: integer, title: varchar(50), dimensions: varchar(50), dateCreated: varchar(50), displayMedium: varchar(50), **donorID**: integer, featureID: integer, value: integer)


	ARTWORKID	ARTISTID	TITLE	DIMENSIONS	DATECREATED	DISPLAYMEDIUM	DONORID	FEATUREID
1	91	51	Green Coca-Cola Bottles	82.8 in by 57.1 in	1962	painting	14	
2	92	52	The Virgin and Child with Saint Anne	51 in by 66.3 in	1510	painting	13	
3	93	51	Big Campbells Soup Can 19c (Beef Noodle)	8.3 x 4.3 in.	1962	painting	11	
4	94	55	Two Candles (Zwei Kerzen)	47 1/4 x 39 1/2 in.	1982	painting	12	
5	95	54	The Potato Eaters	82 x 114 cm	1885	painting	14	


	ARTISTID	TITLE	DIMENSIONS	DATECREATED	DISPLAYMEDIUM	DONORID	FEATUREID	VALUE
1	51	Green Coca-Cola Bottles	82.8 in by 57.1 in	1962	painting	14	302	78000000
2	52	The Virgin and Child with Saint Anne	51 in by 66.3 in	1510	painting	13	301	5780000000
3	51	Big Campbells Soup Can 19c (Beef Noodle)	8.3 x 4.3 in.	1962	painting	11	303	88000000
4	55	Two Candles (Zwei Kerzen)	47 1/4 x 39 1/2 in.	1982	painting	12	305	9000000
5	54	The Potato Eaters	82 x 114 cm	1885	painting	14	304	54000000

donor(donorID: integer, name: varchar(50), totalDonationValue: integer, phoneNum: varchar(50), country: varchar(50))


	 DONORID ↕	NAME ↕	TOTALDONATIONVALUE ↕	PHONENUM ↕	COUNTRY ↕
1	11	John Doe	500	123-456-7890	Canada
2	12	Jane Smith	750	987-654-3210	Canada
3	13	Alice Johnson	300	555-123-4567	USA
4	14	Bob Williams	1000	111-222-3333	Canada
5	15	Eva Brown	200	777-888-9999	USA
6	16	Billy Bob	64000000	473-928-7782	USA
7	17	Jim Jones	109000000	110-273-6271	Mexico
8	18	Harry Dewit	1112000	182-999-9085	Canada
9	19	Gustavo Fring	810200000	111-521-1829	USA
10	20	Jonas Cruz	7718000	902-892-7782	Mexico

Exhibition(exhibitionID: integer, title: varchar(50), startDate: varchar(50), endDate: varchar(50), visitorCount: integer, location: varchar(50), **curatorID**: integer, rating: integer)



	 EXHIBITIONID ↕	TITLE ↕	STARTDATE ↕	ENDDATE ↕	VISITORCOUNT ↕	LOCATION ↕	CURATORID ↕	RATING ↕
1	301	Emerging Echoes: New Artists Unveiled	25/10/22	9/8/23	966178	room 15	2000	
2	302	Urban Odyssey: Cityscape Creations	15/7/15	18/8/17	67551092	Bianca Ballroom	2004	
3	303	3D Art Extravaganza	18/2/18	19/5/20	11000000	Ferguson Garden	2003	
4	304	Echoes of the Past: Historical Art Revival	19/4/20	20/7/25	73827361	room 209	2002	
5	305	Art for Environmental Change	23/12/9	15/6/17	161657192	room 112	2001	

	 EXHIBITIONID ↕	TITLE ↕	STARTDATE ↕	ENDDATE ↕	VISITORCOUNT ↕	LOCATION ↕	CURATORID ↕	RATING ↕
1	301	Emerging Echoes: New Artists Unveiled	25/10/22	9/8/23	966178	room 15	2000	67
2	302	Urban Odyssey: Cityscape Creations	15/7/15	18/8/17	67551092	Bianca Ballroom	2004	89
3	303	3D Art Extravaganza	18/2/18	19/5/20	11000000	Ferguson Garden	2003	99
4	304	Echoes of the Past: Historical Art Revival	19/4/20	20/7/25	73827361	room 209	2002	78
5	305	Art for Environmental Change	23/12/9	15/6/17	161657192	room 112	2001	92




Employees(employeeID: integer, phoneNum: varchar, name: varchar)

	 EMPLOYEEID ↕	PHONENUM ↕	NAME ↕
1	2000	111-222-333	John Smith
2	2001	111-222-334	Daniel Lee
3	2002	111-222-335	Mary Jane
4	2003	111-222-336	Jordan Johnson
5	2004	111-222-337	Sarah Jones
6	2005	111-222-338	Michael Kim
7	2006	111-222-339	Bianca Ng
8	2007	111-222-340	Emma Watson
9	2008	111-222-341	Emma Stone
10	2009	111-222-342	Margot Robbie
11	2010	111-222-343	Chris Hemsworth
12	2011	111-222-344	Chris Pratt
13	2012	111-222-345	Chris Pine
14	2013	111-222-346	Chris Brown
15	2014	111-222-347	Chris Paul



Curator(**employeeID**: integer, specialization: varchar)

	 EMPLOYEEID ↕	 SPECIALIZATION ↕
1	2000	Contemporary
2	2001	Modernism
3	2002	Post Impressionism
4	2003	Naturalism
5	2004	Renaissance



EventStaffSupervises(**employeeID**: integer, department: varchar, **eventID**: integer)

	 EMPLOYEEID ↕	 DEPARTMENT ↕	 EVENTID ↕
1	2005	Education	101
2	2006	Marketing	101
3	2007	Marketing	102
4	2008	Finance	102
5	2009	Communications	103







Researcher(**employeeID**: integer, researchInterest: varchar)

	 EMPLOYEEID ↕	 RESEARCHINTEREST ↕
1	2010	Art History
2	2011	Collection Studies
3	2012	Cultural Context
4	2013	Market and Value
5	2014	Conservation


worksOn(**employeeID**: integer, **projectID**: varchar)

	 EMPLOYEEID ↕	 PROJECTID ↕
1	2010	1000
2	2011	1001
3	2012	1002
4	2013	1003
5	2014	1004


Project(**projectID**: integer, title: varchar(50), budget: integer, status: varchar(50), startDate: varchar(50), endDate: varchar(50))

	 PROJECTID ↕	 TITLE ↕	 BUDGET ↕	 STATUS ↕	 STARTDATE ↕	 ENDDATE ↕
1	1000	Women artists in 19C	100	ongoing	2021-12-23	2024-11-11
2	1001	Asian Contemporary Art	200	completed	2020-02-01	2022-04-03
3	1002	Evolution of Printmaking Techniques	300	not started	2024-06-20	2026-11-03
4	1003	Digital Evolution in Conservation	300	completed	2022-05-04	2023-02-02
5	1004	Cultural Heritage Preservation	400	not started	2026-01-01	2029-04-04



Funds(**donorID**: integer, **projectID**: integer, amountgiven: double)

	 DONORID ↕	 PROJECTID ↕	AMOUNTGIVEN ↕
1	11	1000	500
2	12	1001	750
3	13	1002	300
4	14	1003	1000
5	15	1004	200



Visitor(name: varchar, phoneNum: integer, visitorID: integer)

	 VISITORID ↕	NAME ↕	PHONENUM ↕
1	1	John Smith	123-456-7890
2	2	Alice Johnson	987-654-3210
3	3	Bob Davis	555-111-2222



Event(ticketsSold: integer, location: varchar, date: varchar, capacity: integer, title: varchar, eventID: integer, **employeeID**: integer)

	 EVENTID ↕	TICKETSSOLD ↕	LOCATION ↕	EVENTDATE ↕	CAPACITY ↕	TITLE ↕	 EMPLOYEEID ↕
1	101	100	Venue A	15/05/23	150	Art Show A	2001
2	102	200	Venue B	20/06/23	250	Concert B	2002
3	103	50	Venue C	10/07/23	100	Exhibition C	2003



ParticipateIn(**eventID**: integer, **visitorID**: integer)

	 EVENTID ↕	 VISITORID ↕
1	101	1
2	101	2
3	101	3
4	102	3
5	103	1

Host(**eventID**: integer, **artistID**: integer)

	 EVENTID ↕	 ARTISTID ↕
1	101	51
2	101	52
3	101	53

Visit(**visitorID: integer, exhibitionID: integer**)

	 VISITORID ↕	 EXHIBITIONID ↕
1	1	301
2	1	302
3	1	303
4	1	304
5	1	305
6	2	301
7	2	302
8	2	303
9	2	304
10	2	305

d)

A list of all SQL queries used and where it can be found in the code (i.e., file name and line number(s)). For SQL query requirements, check the rubric listed on Canvas for Milestone 4.

update

controller.java line 188

```
String query = "UPDATE artwork SET " + attr + " = '" + newAttr + "' WHERE  
title = '" + title + "'";
```

Division

controller.java line 206

```
String query = "SELECT name FROM visitor V WHERE NOT EXISTS (" +  
    "SELECT exhibitionID FROM Exhibition E WHERE NOT EXISTS (" +  
    "SELECT visitorID FROM Visit I WHERE E.exhibitionID = I.exhibitionID  
AND V.visitorID = I.visitorID))";
```

aggregation with HAVING

controller.java line 256

```
String query = "SELECT country FROM Donor GROUP BY country HAVING  
sum(totalDonationValue) " + op  
    + " " + value + " ORDER BY sum(totalDonationValue) DESC";
```

Join

controller.java line 232

```
String query = "SELECT UNIQUE name FROM Artist INNER JOIN " +  
    "Artwork ON Artist.ArtistID = Artwork.artistID WHERE Artwork.value " +  
op + " " + Value;
```

Insert

Query: INSERT INTO EVENT VALUES (?, ?, ?, ?, ?, ?, ?) (Values specified by user)

Location: Line 99 in DatabaseConnectionHandler.java

Query :INSERT INTO Artwork VALUES (?, ?, ?, ?, ?, ?, ?, ?, ?) (Values specified by user)

Location: Line 150 in DatabaseConnectionHandler.java

Delete

Query: DELETE FROM Artist WHERE artistID = ?

Location: Line 170 in DatabaseConnectionHandler.java

Query: DELETE FROM Event WHERE EVENTID = ?

Location: Line 180 in DatabaseConnectionHandler.java

Aggregation with Group By

Query: SELECT DONORID, AVG(VALUE) as average_value " +
 "FROM ARTWORK " +
 "GROUP BY DONORID

Location: lines 216 - 218 in DatabaseConnectionHandler.java

Query: SELECT DONORID, MIN(VALUE) as min_value " +
 "FROM ARTWORK " +
 "GROUP BY DONORID

Location: lines 221 - 223 in DatabaseConnectionHandler.java

Query: SELECT DONORID, MAX(VALUE) as max_value " +
 "FROM ARTWORK " +
 "GROUP BY DONORID

Location: Lines 226 - 228 in DatabaseConnectionHandler.java

Query: SELECT DONORID, COUNT(VALUE) as count_value " +
 "FROM ARTWORK " +
 "GROUP BY DONORID

Location: Lines 231 - 233 in DatabaseConnectionHandler.java

Selection

Query: `SELECT * FROM Project WHERE ?` (WHERE clause is specified by user)

Location: Lines 333 - 340 in DatabaseConnectionHandler.java

Projection

Query: `SELECT ? FROM Project` (SELECT clause is specified by user)

Location: Lines 122 - 140 in Projection.java

Nested Aggregation with Group By

Query: `SELECT AVG(average_budget_per_status) FROM (SELECT status, AVG(budget) AS average_budget_per_status) FROM Project WHERE budget > ? GROUP BY status)`

Location: Lines 284 - 285 in DatabaseConnectionHandler.java

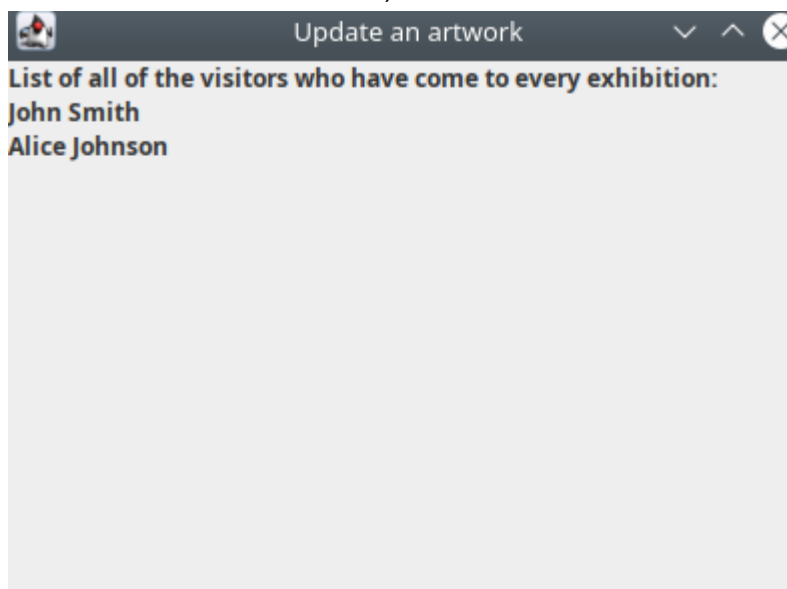
e)

Screenshots demonstrating the functionality of each query using the GUI. We want to see a before/during/after progression of events. For example, the before screenshot would be what data is in the table before you run the query, the during screenshot(s) is how the query is triggered using the GUI, and the after screenshot is what data is in your table afterwards. Please label each set of screenshots with the name of the query it is meant to address (e.g., "Insert Operation").

Division Operation

instructions: click "see every loyal customer" from the main menu

the query is executed and this should be the result with the default data (from the visited table and visitors table above) in the table:



JOIN Operation

instructions: click “search the value of artists” on the main menu. Enter which type of operator you want to use and what value you want to check, then hit the submit button. The screen should list the names of the artists who have made an artwork over/under/equal to that value.

The query is visible in the screenshot and what was returned when ran with the default values (from the artworks and artists table above) in the table.



find the artists

show artists that have made an artwork

over 50,000,000

names:

Andy Warhol
Leonardo Da Vinci
Vincent van Gogh



Success!

AGGREGATION WITH HAVING Operation

instructions: click “get country by donations” in the main menu. Enter an operator which you want to check with the value, and then enter a value you want to check with that operator, then hit the submit button. The returned country names should appear on the page.

This screenshot demonstrates the query as shown using the default values of the database:



get countries

show the countries of donors that have donated

over 50,000,000

names:

JSA
Mexico

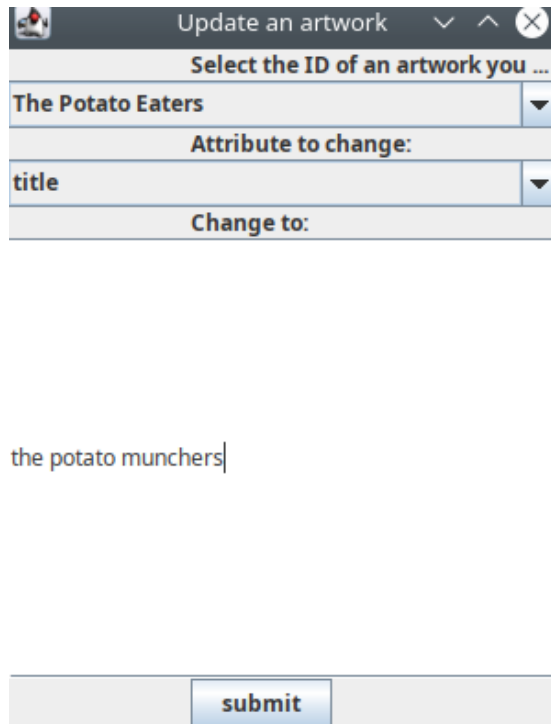


Success!

UPDATE Operation

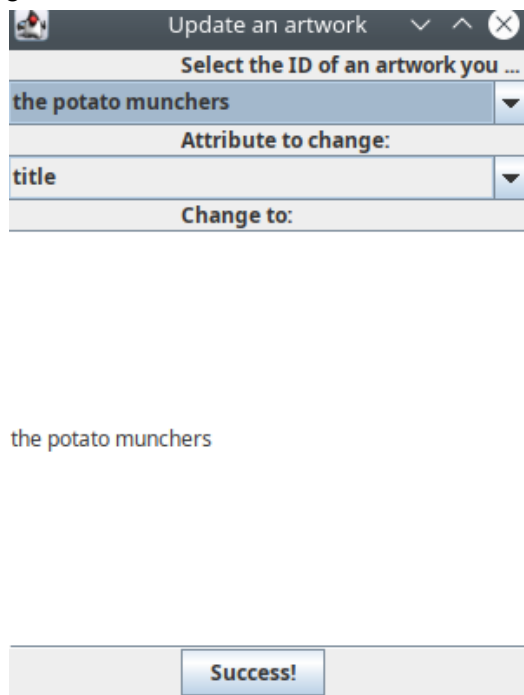
instructions: click the “update an artwork” button from the main menu. select the name of an artwork you wish to update as well as the attribute you want to change. You must then enter the value you want to change the artwork to in the textbox under that.

this is a screenshot of an update before hitting the submit button, ran with the default values (from the artwork table above):



The screenshot shows a dialog box titled "Update an artwork" with a close button (X) in the top right corner. Inside the dialog, there are three sections: "Select the ID of an artwork you ..." with a dropdown menu showing "The Potato Eaters", "Attribute to change:" with a dropdown menu showing "title", and "Change to:" with a large text input field containing "the potato munchers". At the bottom of the dialog is a "submit" button.

after hitting the submit button, you can see that the title (in the select area) is changed to the correct value. This is because a query is ran every time the submit button is pressed that gets the current titles in the artwork table.



The screenshot shows the same "Update an artwork" dialog box after the submit button was pressed. The "submit" button has been replaced by a "Success!" button. The dropdown menu for "Select the ID of an artwork you ..." now shows "the potato munchers" instead of "The Potato Eaters". The "Attribute to change:" dropdown still shows "title", and the "Change to:" text input field still contains "the potato munchers".

Selection Operation (Press 'Get Project Information' Button)

Instructions:

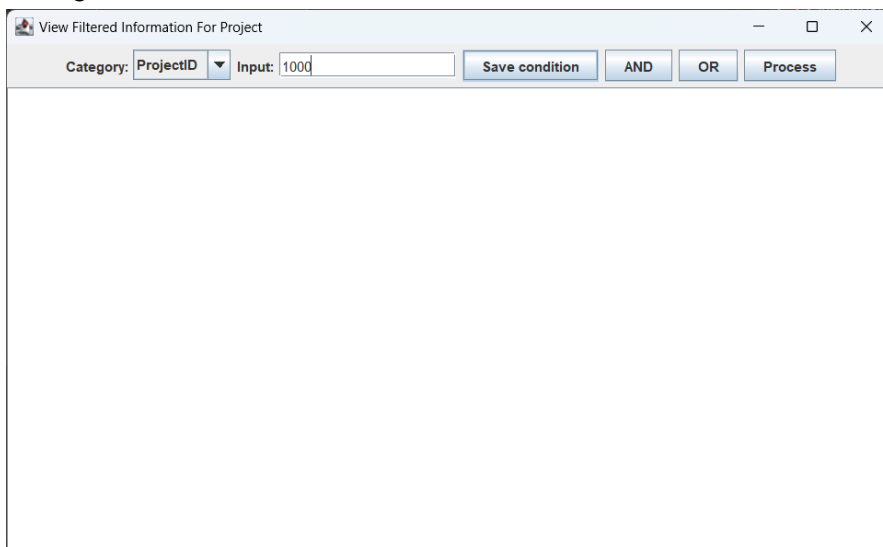
1. Choose a category from the drop down box
2. Input a corresponding value for the chosen category
3. Press 'Save condition' button to save where clause
4. Optionally press the AND or OR button to add more conditions
5. Repeat steps 1-4 as needed
6. Press 'Process' button to get information based on the conditions specified by user

Before:



The screenshot shows a window titled "View Filtered Information For Project". At the top, there is a "Category:" label followed by a dropdown menu showing "ProjectID". To the right of the dropdown is an "Input:" label followed by an empty text box. Further right are four buttons: "Save condition", "AND", "OR", and "Process". The main area of the window is empty.

During:



The screenshot shows the same window as before, but now the "Input:" text box contains the value "1000". The other elements, including the "Category:" dropdown, the buttons, and the empty main area, remain the same.

View Filtered Information For Project

Category: **ProjectID** Input: 1001 Save condition AND OR

```
Connected to Oracle!  
Running Query: SELECT * FROM Project WHERE ProjectID = 1000 OR ProjectID = 1001
```

After:

View Filtered Information For Project

Category: **ProjectID** Input: Save condition AND OR Process

ProjectID: 1000
Title: Women artists in 19C
Budget: 100
Status: ongoing
Start Date: 2021-12-23
End Date: 2024-11-11

ProjectID: 1001
Title: Asian Contemporary Art
Budget: 200
Status: completed
Start Date: 2020-02-01
End Date: 2022-04-03

Projection Operation (Press 'Access Information Across All Categories' Button)

Instructions:

1. Choose a category from the drop down menu
2. Check all of the respective attributes you would like to view
3. Press the 'Display' button

Before:

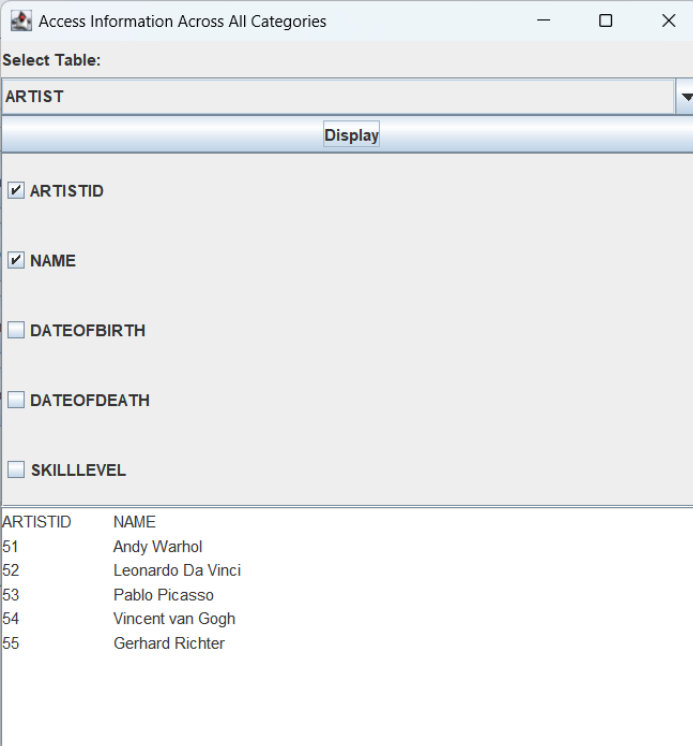
The screenshot shows a window titled "Access Information Across All Categories". It has a "Select Table:" dropdown menu with "ARTIST" selected. Below the dropdown is a list of attributes: DATEOFBIRTH, DATEOFDEATH, and SKILLLEVEL, each with an unchecked checkbox. The "Display" button is not visible.

During:

The image shows two side-by-side screenshots of the "Access Information Across All Categories" window. In the left screenshot, the "ARTIST" table is selected, and the "Display" button is visible. The attributes listed are ARTISTID, NAME, DATEOFBIRTH, DATEOFDEATH, and SKILLLEVEL, all with unchecked checkboxes. In the right screenshot, the same window is shown, but the "ARTISTID" and "NAME" checkboxes are now checked, indicating the selection process.

```
Generated SQL Query: SELECT ARTISTID, NAME FROM ARTIST
Running Query: SELECT ARTISTID, NAME FROM ARTIST
```

After:



Access Information Across All Categories

Select Table:

ARTIST

Display

☒ ARTISTID

☒ NAME

☐ DATEOFBIRTH

☐ DATEOFDEATH

☐ SKILLLEVEL

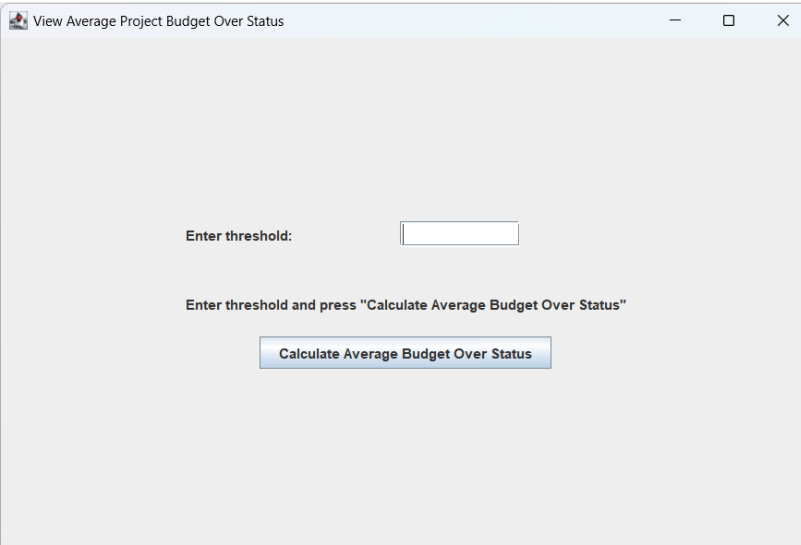
ARTISTID	NAME
51	Andy Warhol
52	Leonardo Da Vinci
53	Pablo Picasso
54	Vincent van Gogh
55	Gerhard Richter

Nested Aggregation with GroupBy (Press 'Average Project Budget' Button)

Instructions:

1. Enter a whole number for the threshold
2. Press 'Calculate Average Budget Over Status' button

Before:



View Average Project Budget Over Status

Enter threshold:

Enter threshold and press "Calculate Average Budget Over Status"

Calculate Average Budget Over Status

During:

View Average Project Budget Over Status

Enter threshold:

100

Enter threshold and press "Calculate Average Budget Over Status"

Calculate Average Budget Over Status

```
Connected to Oracle!  
Running Query: SELECT AVG(average_budget_per_status) FROM (SELECT status, AVG(budget) AS average_budget_per_status FROM Project WHERE budget > 100 GROUP BY status )
```

After:

View Average Project Budget Over Status

Enter threshold:

Average spending for different project status (Only projects with budgets over 100 are considered): 300.0

Calculate Average Budget Over Status

Insertion Operation

Before:

	ARTWORKID	ARTISTID	TITLE	DIMENSIONS	DATECREATED	DISPLAYMEDIUM	DONORID	FEATUREID	VALUE
1	91	51	Green Coca-Cola Bottles	82.8 in by 57.1 in	1962	painting	14	302	78000000
2	92	52	The Virgin and Child with Saint Anne	51 in by 66.3 in	1510	painting	13	301	5780000000
3	93	51	Big Campbell's Soup Can 19c (Beef Noodle)	8.3 x 4.3 in.	1962	painting	11	303	88000000
4	94	55	Two Candles (Zwei Kerzen)	47 1/4 x 39 1/2 in.	1982	painting	12	305	9000000
5	95	54	The Potato Eaters	82 x 114 cm	1885	painting	14	304	54000000

General Art Gallery Options

Event

Artist

Artwork

Insert Artwork:

ARTWORKID	ARTISTID	TITLE	DIMENSIONS	DATECREA...	DISPLAYME...	DONORID	FEATUREID	VALUE
91	51	Green Coca-...	82.8 in by 57...	1962	painting	14	302	78000000
92	52	The Virgin an...	51 in by 66.3 i...	1510	painting	13	301	5780000000
93	51	Big Campbell...	8.3 x 4.3 in.	1962	painting	11	303	88000000
94	55	Two Candles...	47 1/4 x 39 1/...	1982	painting	12	305	9000000
95	54	The Potato E...	82 x 114 cm	1885	painting	14	304	54000000

During:

General Art Gallery Options

Event

Artist

Artwork

Insert Artwork:

ARTWORKID	ARTISTID	TITLE	DIMENSIONS	DATECREAT...	DISPLAYMEDI...	DONORID	FEATUREID	VALUE
91	51	Green Coca-C...	82.8 in	<div><div>Enter Artwork Details</div><div>ArtworkID: 110</div><div>ArtistID: 53</div><div>Title: The Persistence of Memory</div><div>Dimensions: 28 X 53 inches</div><div>Date Created: 1988-06-01</div><div>Display Medium: Painting</div><div>DonorID: 11</div><div>FeatureID: 305</div><div>Value (\$): 5000000</div><div><div>OK</div><div>Cancel</div></div></div>	14	302	78000000	
92	52	The Virgin and...	51 in b		13	301	5780000000	
93	51	Big Campbells...	8.3 x 4		11	303	88000000	
94	55	Two Candles (...)	47 1/4		12	305	9000000	
95	54	The Potato Eat...	82 x 11		14	304	54000000	

After:

ARTWORKID	ARTISTID	TITLE	DIMENSIONS	DATECREATED	DISPLAYMEDIUM	DONORID	FEATUREID	VALUE
91	51	Green Coca-Cola Bottles	82.8 in by 57.1 in	1962	painting	14	302	78000000
92	52	The Virgin and Child with Saint Anne	51 in by 66.3 in	1510	painting	13	301	5780000000
93	51	Big Campbells Soup Can 19c (Beef Noodle)	8.3 x 4.3 in.	1962	painting	11	303	88000000
94	55	Two Candles (Zwei Kerzen)	47 1/4 x 39 1/2 in.	1982	painting	12	305	9000000
95	54	The Potato Eaters	82 x 114 cm	1885	painting	14	304	54000000
110	53	The Persistence of Memory	28 X 53 inches	1938-06-01	Painting	11	305	5000000

General Art Gallery Options

Event

Artist

Artwork

Insert Artwork:

ARTWORKID	ARTISTID	TITLE	DIMENSIONS	DATECREAT...	DISPLAYMEDI...	DONORID	FEATUREID	VALUE
91	51	Green Coca-C...	82.8 in by 57.1 i...	1962	painting	14	302	78000000
92	52	The Virgin and ...	51 in by 66.3 in	1510	painting	13	301	5780000000
93	51	Big Campbells ...	8.3 x 4.3 in.	1962	painting	11	303	88000000
94	55	Two Candles (...)	47 1/4 x 39 1/2 ...	1982	painting	12	305	9000000
95	54	The Potato Eat...	82 x 114 cm	1885	painting	14	304	54000000

Success

i

Event inserted successfully!

OK

Deletion Operation

Before:

	ARTISTID	NAME	DATEOFBIRTH	DATEOFDEATH	SKILLLEVEL
1	51	Andy Warhol	August 6, 1928	February 22, 1987	76
2	52	Leonardo Da Vinci	April 15, 1452	May 2, 1519	96
3	53	Pablo Picasso	October 25, 1881	April 8, 1973	86
4	54	Vincent van Gogh	March 30, 1853	July 29, 1890	92
5	55	Gerhard Richter	February 9, 1932	<null>	68
6	56	Claude Monet	November 14, 1840	December 5, 1926	88
7	57	Georgia O'Keeffe	November 15, 1887	March 6, 1986	84
8	58	Salvador Dali	May 11, 1904	January 23, 1989	90
9	59	Edvard Munch	December 12, 1863	January 23, 1944	89
10	60	Frida Kahlo	July 6, 1907	July 13, 1954	86

General Art Gallery Options

Event Artist Artwork

Insert Artist Delete Artist

ARTISTID	NAME	DATEOFBIRTH	DATEOFDEATH	SKILLLEVEL
51	Andy Warhol	August 6, 1928	February 22, 1987	76
52	Leonardo Da Vinci	April 15, 1452	May 2, 1519	96
53	Pablo Picasso	October 25, 1881	April 8, 1973	86
54	Vincent van Gogh	March 30, 1853	July 29, 1890	92
55	Gerhard Richter	February 9, 1932		68
56	Claude Monet	November 14, 1840	December 5, 1926	88
57	Georgia O'Keeffe	November 15, 1887	March 6, 1986	84
58	Salvador Dali	May 11, 1904	January 23, 1989	90
59	Edvard Munch	December 12, 1863	January 23, 1944	89
60	Frida Kahlo	July 6, 1907	July 13, 1954	86

During:

General Art Gallery Options

Event Artist Artwork

Insert Artist Delete Artist

ARTISTID	NAME	DATEOFBIRTH	DATEOFDEATH	SKILLLEVEL
51	Andy Warhol	August 6, 1928	February 22, 1987	76
52	Leonardo Da Vinci	April 15, 1452	May 2, 1519	96
53	Pablo Picasso	October 25, 1881	April 8, 1973	86
54	Vincent van Gogh	March 30, 1853	July 29, 1890	92
55	Gerhard f			68
56	Claude M			88
57	Georgia C			84
58	Salvador			90
59	Edvard M			89
60	Frida Kah			86

Input

Please enter the id of the row you want to delete:

60

OK Cancel

```

Connected to Oracle!
Running Query: SELECT * FROM Event
Running Query: SELECT * FROM ARTIST
Running Query: SELECT * FROM ARTWORK
Running Query: DELETE FROM Artist WHERE artistID = 60
Running Query: SELECT * FROM ARTIST

Process finished with exit code 0

```

After:

General Art Gallery Options

Event

Artist

Artwork

Insert Artist

Delete Artist

ARTISTID	NAME	DATEOFBIRTH	DATEOFDEATH	SKILLLEVEL
51	Andy Warhol	August 6, 1928	February 22, 1987	76
52	Leonardo Da Vinci	April 15, 1452	May 2, 1519	96
53	Pablo Picasso	October 25, 1881	April 8, 1973	86
54	Vincent van Gogh	March 30, 1853	July 29, 1890	92
55	Gerhard Richter	February 9, 1932		68
56	Claude Monet	November 14, 1840	December 5, 1926	88
57	Georgia O'Keeffe	November 15, 1887	March 6, 1986	84
58	Salvador Dali	May 11, 1904	January 23, 1989	90
59	Edvard Munch	December 12, 1863	January 23, 1944	89

	ARTISTID	NAME	DATEOFBIRTH	DATEOFDEATH	SKILLLEVEL
1	51	Andy Warhol	August 6, 1928	February 22, 1987	76
2	52	Leonardo Da Vinci	April 15, 1452	May 2, 1519	96
3	53	Pablo Picasso	October 25, 1881	April 8, 1973	86
4	54	Vincent van Gogh	March 30, 1853	July 29, 1890	92
5	55	Gerhard Richter	February 9, 1932	<null>	68
6	56	Claude Monet	November 14, 1840	December 5, 1926	88
7	57	Georgia O'Keeffe	November 15, 1887	March 6, 1986	84
8	58	Salvador Dali	May 11, 1904	January 23, 1989	90
9	59	Edvard Munch	December 12, 1863	January 23, 1944	89

Aggregation with Group By Operation

Before:

View Donor Donation Value Summary

Use the dropdown menu to select type of summary

minimum

Submit

ARTWORKID	ARTISTID	TITLE	DIMENSIONS	DATECREATED	DISPLAYMEDIUM	DONORID	FEATUREID	VALUE
91	51	Green Coca-Col...	82.8 in by 57.1 in	1962	painting	14	302	78000000
92	52	The Virgin and C...	51 in by 66.3 in	1510	painting	13	301	5780000000
93	51	Big Campbells S...	8.3 x 4.3 in.	1962	painting	11	303	88000000
94	55	Two Candles (Z...	47 1/4 x 39 1/2 in.	1982	painting	12	305	9000000
95	54	The Potato Eaters	82 x 114 cm	1885	painting	14	304	54000000
110	53	The Persistence...	28 X 53 inches	1988-06-01	Painting	11	305	5000000

DONORID	NAME	PHONENUM	COUNTRY
11	John Doe	123-456-7890	Canada
12	Jane Smith	987-654-3210	Canada
13	Alice Johnson	555-123-4567	USA
14	Bob Williams	111-222-3333	Canada
15	Eva Brown	777-888-9999	USA
16	Billy Bob	473-928-7782	USA
17	Jim Jones	110-273-6271	Mexico
18	Harry Dewit	182-999-9085	Canada
19	Gustavo Fring	111-521-1829	USA
20	Jonas Cruz	902-892-7782	Mexico

During:

View Donor Donation Value Summary

Use the dropdown menu to select type of summary

minimum

maximum

average

count

Submit

ARTWORKID	ARTISTID	TITLE	DIMENSIONS	DATECREATED	DISCOUNT	DONORID	FEATUREID	VALUE
91	51	Green Coca-Col...	82.8 in by 57.1 in	1962	painting	14	302	78000000
92	52	The Virgin and C...	51 in by 66.3 in	1510	painting	13	301	5780000000
93	51	Big Campbells S...	8.3 x 4.3 in.	1962	painting	11	303	88000000
94	55	Two Candles (Z...	47 1/4 x 39 1/2 in.	1982	painting	12	305	9000000
95	54	The Potato Eaters	82 x 114 cm	1885	painting	14	304	54000000
110	53	The Persistence ..	28 X 53 inches	1988-06-01	Painting	11	305	5000000

DONORID	NAME	PHONENUM	COUNTRY
11	John Doe	123-456-7890	Canada
12	Jane Smith	987-654-3210	Canada
13	Alice Johnson	555-123-4567	USA
14	Bob Williams	111-222-3333	Canada
15	Eva Brown	777-888-9999	USA
16	Billy Bob	473-928-7782	USA
17	Jim Jones	110-273-6271	Mexico
18	Harry Dewit	182-999-9085	Canada
19	Gustavo Fring	111-521-1829	USA
20	Jonas Cruz	902-892-7782	Mexico

```
Connected to Oracle!
Running Query: SELECT * FROM ARTWORK
Running Query: SELECT * FROM DONOR
Running Query: SELECT DONORID, MIN(VALUE) as min_value FROM ARTWORK GROUP BY DONORID
Running Query: SELECT * FROM ARTWORK
Running Query: SELECT * FROM DONOR
```

After:

View Donor Donation Value Summary

Use the dropdown menu to select type of summary

minimum

Submit

DONORID	MIN_VALUE
14	54000000
11	5000000
12	9000000
13	5780000000

DONORID	NAME	PHONENUM	COUNTRY
11	John Doe	123-456-7890	Canada
12	Jane Smith	987-654-3210	Canada
13	Alice Johnson	555-123-4567	USA
14	Bob Williams	111-222-3333	Canada
15	Eva Brown	777-888-9999	USA
16	Billy Bob	473-928-7782	USA
17	Jim Jones	110-273-6271	Mexico
18	Harry Dewit	182-999-9085	Canada
19	Gustavo Fring	111-521-1829	USA
20	Jonas Cruz	902-892-7782	Mexico