

CPSC 304 Project Cover Page

Milestone #: ____4____

Date: ____November 25, 2022____

Group Number: ____12____

Name	Student Number	CS Alias (Userid)	Preferred E-mail Address
Arianna Joe	85283554	a4o9r	aria231@student.ubc.ca
Tracy Chow	47273370	j2y3y	Tc2780@student.ubc.ca
Jason Huang	16005415	i4x2b	Jason.huang927@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

Brief Overview of Project

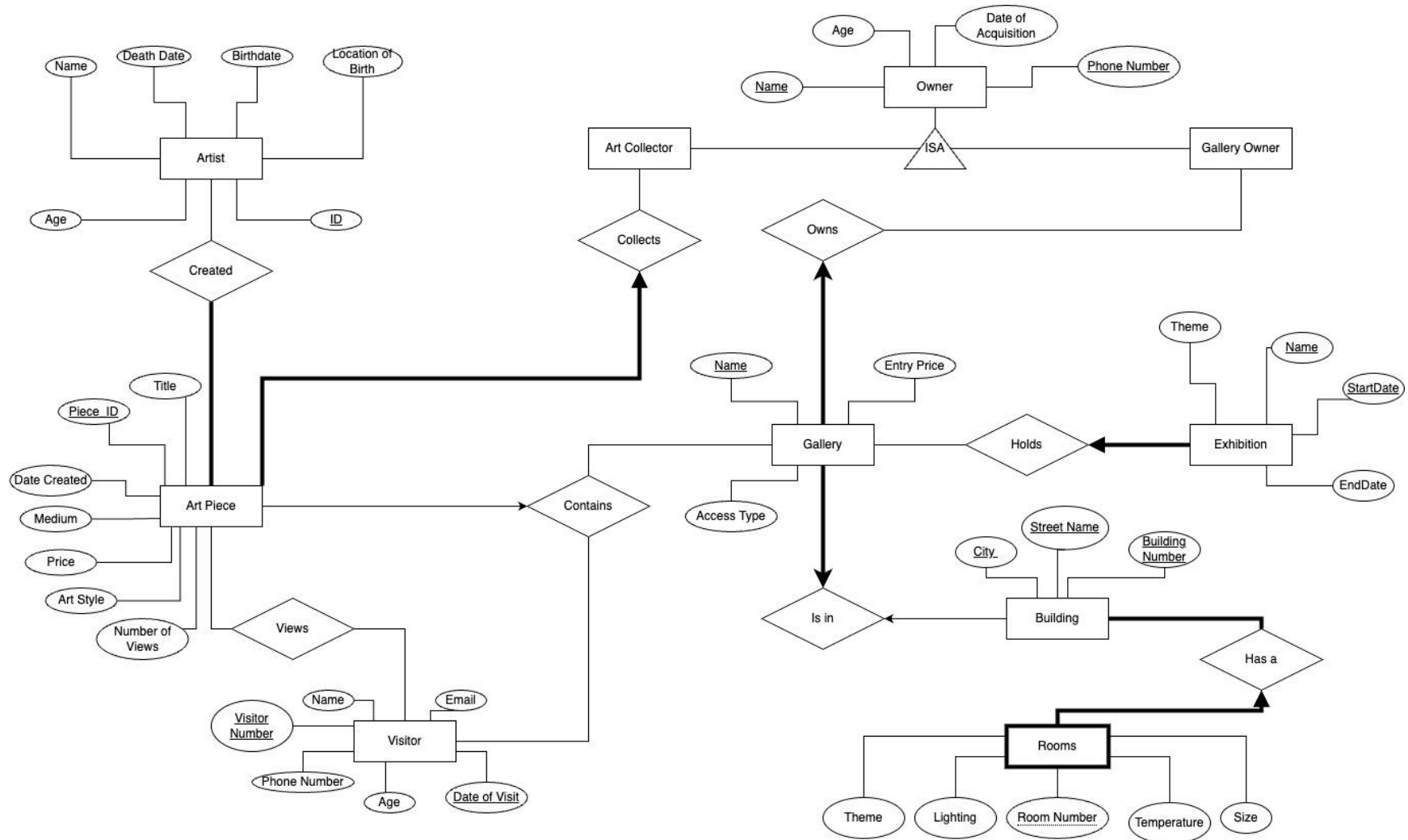
This database will allow owners to keep track of their gallery, its exhibitions and artworks, helping reduce the risk of accidentally misplacing items. It will also keep track of the visitors by assigning them a Visitor_ID and noting down their phone number, which allows owners to track and narrow down the cause of an accident if an art piece gets damaged. The database will also keep track of the building and rooms where art galleries and their exhibitions are held, so if there is an art piece that requires specific room conditions (size, temperature, etc.), the database will be able to find a suitable room.

How Final Schema differed from the Schema Turned In

Difference between final schema and initial schema and why we made the change:

1. Added Viewed table to schema
 - a. The relationship between ArtPiece and Visitor was missing (Views in the ER Diagram); most likely resulting from our incorrect FDs and normalization due to misunderstandings.
2. Rooms_RoomType is defined as CHAR (50) instead of integer
 - a. We wanted to simplify the room sizes to “small”, “medium”, and “large” instead of using integers to represent the rooms.
3. Took out Visitor_DateOfVisitor from Visitor table
 - a. We realized it was a redundant attribute after we added the viewed table, as the viewed table holds the visitor id, art piece id, and the date of the visit

Current ER diagram:



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Current tables:

Tables	Tables after initialScript.sql is run (which has drop, create and insert statements)																																																												
Artist(Artist_Name: string, Artist_Age: number, Artist_DeathDate: Date, Artist_BirthDate: Date, Artist_LocationOfBirth: string, Artist_ID: number)	<pre>SQL> select * from artist</pre> <table><thead><tr><th>ARTIST_ID</th><th>ARTIST_AGE</th><th>ARTIST_NAME</th><th>ARTIST_DE</th><th>ARTIST_BI</th><th>ARTIST_LOCATIONOFBIRTH</th></tr></thead><tbody><tr><td>1111</td><td>64</td><td>Bobby Brown</td><td>09-APR-19</td><td>12-MAY-54</td><td>Toronto</td></tr><tr><td>1112</td><td>50</td><td>Charlie Red</td><td>19-MAY-20</td><td>11-JAN-70</td><td>Mexico</td></tr><tr><td>1113</td><td>43</td><td>Donald Dan</td><td>01-APR-95</td><td>17-FEB-52</td><td>Shanghai</td></tr><tr><td>1114</td><td>106</td><td>Daisy Dry</td><td>01-OCT-22</td><td>01-JAN-16</td><td>Vancouver</td></tr><tr><td>1115</td><td>30</td><td>Mickey Mountain</td><td>01-OCT-08</td><td>12-SEP-78</td><td>Calgary</td></tr></tbody></table>	ARTIST_ID	ARTIST_AGE	ARTIST_NAME	ARTIST_DE	ARTIST_BI	ARTIST_LOCATIONOFBIRTH	1111	64	Bobby Brown	09-APR-19	12-MAY-54	Toronto	1112	50	Charlie Red	19-MAY-20	11-JAN-70	Mexico	1113	43	Donald Dan	01-APR-95	17-FEB-52	Shanghai	1114	106	Daisy Dry	01-OCT-22	01-JAN-16	Vancouver	1115	30	Mickey Mountain	01-OCT-08	12-SEP-78	Calgary																								
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Owner(Owner_Name: string, Owner_Age: number, Owner_DateOfAcquisition: Date, Owner_PhoneNumber: number)	<pre>SQL> select * from owner</pre> <table><thead><tr><th>OWNER_NAME</th><th>OWNER_PHONENUMBER</th><th>OWNER_AGE</th><th>OWNER_DAT</th></tr></thead><tbody><tr><td>Bobby</td><td>4.1633E+10</td><td>56</td><td>05-MAY-19</td></tr><tr><td>Norman</td><td>4.1643E+10</td><td>54</td><td>15-APR-18</td></tr><tr><td>Summer</td><td>6.0443E+10</td><td>78</td><td>05-SEP-22</td></tr><tr><td>Nicole</td><td>6.4743E+10</td><td>88</td><td>05-JAN-12</td></tr><tr><td>Dion</td><td>2896564783</td><td>10</td><td>05-JUN-04</td></tr></tbody></table>	OWNER_NAME	OWNER_PHONENUMBER	OWNER_AGE	OWNER_DAT	Bobby	4.1633E+10	56	05-MAY-19	Norman	4.1643E+10	54	15-APR-18	Summer	6.0443E+10	78	05-SEP-22	Nicole	6.4743E+10	88	05-JAN-12	Dion	2896564783	10	05-JUN-04																																				
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Gallery(Gallery_Name: string, Gallery_EntryPrice: number, Gallery_AccessType: string, Owner_Name: string, Owner_PhoneNumber: number, Building_City: string, Building_BuildingNumber: number, Building_StreetName: string)	<pre>SQL> select * from gallery</pre> <table><thead><tr><th>GALLERY_NAME</th><th>OWNER_PHONENUMBER</th><th>GALLERY_ACESSTYPE</th><th>GALLERY_ENTRYPRICE</th><th>OWNER_NAME</th></tr></thead><tbody><tr><td>Decora</td><td>4.1633E+10</td><td>Public</td><td>55</td><td>Bobby</td></tr><tr><td>Toronto</td><td></td><td>1234 Dundas</td><td></td><td></td></tr><tr><td>Antiquities</td><td>4.1643E+10</td><td>Private</td><td>650</td><td>Norman</td></tr><tr><td>Vancouver</td><td></td><td>232 Manor</td><td></td><td></td></tr><tr><td>Artovox</td><td>6.4743E+10</td><td>Public</td><td>750</td><td>Nicole</td></tr><tr><td>Winnipeg</td><td></td><td>23312 Walter Main</td><td></td><td></td></tr><tr><td>GALLERY_NAME</td><td>OWNER_PHONENUMBER</td><td>GALLERY_ACESSTYPE</td><td>GALLERY_ENTRYPRICE</td><td>OWNER_NAME</td></tr><tr><td>Mural</td><td>6.0443E+10</td><td>Public</td><td>70</td><td>Summer</td></tr><tr><td>Calgary</td><td></td><td>1212 Scurfield</td><td></td><td></td></tr><tr><td>Patronizing</td><td>2896564783</td><td>Private</td><td>1170</td><td>Dion</td></tr><tr><td>Toronto</td><td></td><td>2360 Younge</td><td></td><td></td></tr></tbody></table>	GALLERY_NAME	OWNER_PHONENUMBER	GALLERY_ACESSTYPE	GALLERY_ENTRYPRICE	OWNER_NAME	Decora	4.1633E+10	Public	55	Bobby	Toronto		1234 Dundas			Antiquities	4.1643E+10	Private	650	Norman	Vancouver		232 Manor			Artovox	6.4743E+10	Public	750	Nicole	Winnipeg		23312 Walter Main			GALLERY_NAME	OWNER_PHONENUMBER	GALLERY_ACESSTYPE	GALLERY_ENTRYPRICE	OWNER_NAME	Mural	6.0443E+10	Public	70	Summer	Calgary		1212 Scurfield			Patronizing	2896564783	Private	1170	Dion	Toronto		2360 Younge		
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Art Piece(ArtPiece_Title: string,
ArtPiece_ID: number,
ArtPiece_DateCreated: Date,
ArtPiece_Medium: string,
ArtPiece_Price: number,
ArtPiece_Style: string,
ArtPiece_NumberOfViews: number,
Owner_Name: string,
Owner_PhoneNumber: number,
Gallery_Name: string,
Room_Temperature: number)

```
SQL> select * from artpiece
2 /
```

ARTPIECE_ID	ARTPIECE_TITLE	ARTPIECE_PRICE	ARTPIECE_MEDIUM	ARTPIECE_STYLE
ARTPIECE_NUMBEROFVIEWS	OWNER_NAME	OWNER_PHONENUMBER	GALLERY_NAME	ROOM_TEMPERATURE
10	Mona Lisa 123456432 Bobby	27-SEP-03 011	4.1633E+10 Decora	108000 Human Portrait
11	Starry Nights 6367488 Norman	12-JAN-90 Water colour	4.1643E+10 Antiquities	1338484 Art Deco
12	Mouse in the Trap 839829 Summer	01-DEC-90 Acrylics	6.0443E+10 Artovox	348990 Baroque
ARTPIECE_ID	ARTPIECE_TITLE	ARTPIECE_PRICE	ARTPIECE_MEDIUM	ARTPIECE_STYLE
ARTPIECE_NUMBEROFVIEWS	OWNER_NAME	OWNER_PHONENUMBER	GALLERY_NAME	ROOM_TEMPERATURE
13	Duck Duck Goose 29382883 Nicole	27-AUG-98 Chalk	6.4743E+10 Mural	3498394839 Bauhaus
14	NeonRed In Your Area 93843 Dion	06-APR-14 Charcoal	2896564783 Patronizing	34938943 Art Nouveau

Exhibition(Exhibition_Theme: string,
Exhibition_Name: string,
Exhibition_StartDate: Date,
Exhibition_EndDate: Date,
Gallery_Name: string)

EXHIBITION_NAME	EXHIBITIO	EXHIBITIO	EXHIBITION_THEME	GALLERY_NAME
DoomsDay	01-OCT-22	01-DEC-22	Wine and Dine	Decora
SoupDay	01-MAY-21	01-AUG-21	Cheese with a side of Pizza	Antiquities
YAHOO	01-JUN-14	01-DEC-14	Casual Date	Artovox
BOOMBAYAH	01-AUG-17	01-SEP-17	Black with a dash of Pink	Mural
Love Dive	01-FEB-22	01-APR-22	Be Narcissistic	Patronizing

Rooms(Rooms_Theme: string,
Rooms_Lighting: string,
Rooms_RoomNumber: number,
Rooms_Temperature: number,
Rooms_Size: string,
Building_StreetName: string,
Building_BuildingNumber:
number, Building_City: string)

SQL> select * from rooms

2 /

ROOMS_ROOMNUMBER	ROOMS_TEMPERATURE	ROOMS_SIZE	ROOMS_LIGHTING	ROOMS_THEME		
BUILDING_CITY	BUILDING_STREETNAME	BUILDING_BUILDINGNUMBER				
Toronto	1	23.4 Small	Dundas	Dim lights	1234	Gloomy
Vancouver	2	24.3 Medium	Manor	Bright lights	232	Rainy with a chance of spaghetti
Winnipeg	3	24.3 Large	Walter Main	Ambient lights	23312	Midwest Vibes
ROOMS_ROOMNUMBER	ROOMS_TEMPERATURE	ROOMS_SIZE	ROOMS_LIGHTING	ROOMS_THEME		
BUILDING_CITY	BUILDING_STREETNAME	BUILDING_BUILDINGNUMBER				
Calgary	4	23.4 Small	Scurfield	Neon lights	1212	DOU DU DOU DU
Toronto	5	25.1 Small	Younge	Accent lights	2360	Flying Cars

Created(Artist_ID: number,
ArtPiece_ID: number,
Exhibition_Name: string,
Exhibition_StartDate: Date,
Visitor_ID: number,
Rooms_RoomNumber: number,
Building_City: string,
Building_StreetName: string,
Building_BuildingNumber:
number)

```
SP2-0734: unknown command beginning "selected *..." - rest of line ignored.
(SQL> select * from created
2 /
```

ARTPIECE_ID	ARTIST_ID	EXHIBITION_NAME	EXHIBITIO	VISITOR_ID	ROOMS_ROOMNUMBER	BUILDING_CITY
BUILDING_STREETNAME	BUILDING_BUILDINGNUMBER					
Dundas	10	1111 DoomsDay	01-OCT-22	1	1	Toronto
Manor	11	1112 SoupDay	01-MAY-21	2	2	Vancouver
Walter Main	12	1113 YAHOO	01-JUN-14	3	3	Winnipeg
ARTPIECE_ID	ARTIST_ID	EXHIBITION_NAME	EXHIBITIO	VISITOR_ID	ROOMS_ROOMNUMBER	BUILDING_CITY
BUILDING_STREETNAME	BUILDING_BUILDINGNUMBER					
Scurfield	13	1114 BOOMBAYAH	01-AUG-17	4	4	Calgary
Younge	14	1115 Love Dive	01-FEB-22	5	5	Toronto

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Viewed(Visitor_ID number,
Visitor_DateOfVisit: Date,
ArtPiece_ID: number)

```
2
SQL> select * from viewed
2 /

VISITOR_ID VISITOR_D ARTPIECE_ID

1 10-OCT-22      10
1 10-OCT-22      11
3 10-JUL-22      12
4 11-AUG-22      12
5 13-FEB-20      13
5 11-NOV-21      14
5 14-FEB-22      11
5 20-FEB-22      12
5 14-MAR-22      10

9 rows selected.
```

SQL QUERIES USED

Operation	Query	Screenshots (can also ctrl+f “QUERYREQ” in our code to find the statements inside index.php)																																			
INSERT Insert a new visitor into the db	INSERT into Visitor VALUES(UserInputId , UserInputName , UserInputNumber , UserInputEmail , UserInputAge)	<p>Before:</p> <div><p>QUERY: ALL VISITORS</p><table><thead><tr><th>ID</th><th>Name</th><th>Phone Number</th><th>Email</th><th>Age</th></tr></thead><tbody><tr><td>1</td><td>Alan</td><td>4161111111</td><td>alan.apple@gmail.com</td><td>45</td></tr><tr><td>2</td><td>Bob</td><td>4162222222</td><td>bob.banana@gmail.com</td><td>13</td></tr><tr><td>3</td><td>Cameron</td><td>4162322323</td><td>cameron.cherrie@gmail.com</td><td>61</td></tr><tr><td>4</td><td>Daniel</td><td>4163233322</td><td>daniel.date@gmail.com</td><td>62</td></tr><tr><td>5</td><td>Ethan</td><td>4161144141</td><td>ethan.eggplant@gmail.com</td><td>65</td></tr><tr><td>6</td><td>Frankie</td><td>4161233213</td><td>frankie.fruit@gmail.com</td><td>12</td></tr></tbody></table></div> <p>In code:</p> <pre>275 executePlainSQL("INSERT into Visitor VALUES ('".\$_POST['addvid']."', '".\$_\$name."', '".\$_\$num."', '".\$_\$email."', '".\$_\$age."')");</pre> <div><p>If you want to add a visitor, make sure you input their ID(c</p><p>ID: <input type="text" value="7"/></p><p>Name: <input type="text" value="testname"/></p><p>Phone Number (all #s pls): <input type="text" value="1234"/></p><p>Email: <input type="text" value="testemail@email.com"/></p><p>Age: <input type="text" value="5"/></p><p>Add New Visitor</p></div> <p>After:</p>	ID	Name	Phone Number	Email	Age	1	Alan	4161111111	alan.apple@gmail.com	45	2	Bob	4162222222	bob.banana@gmail.com	13	3	Cameron	4162322323	cameron.cherrie@gmail.com	61	4	Daniel	4163233322	daniel.date@gmail.com	62	5	Ethan	4161144141	ethan.eggplant@gmail.com	65	6	Frankie	4161233213	frankie.fruit@gmail.com	12
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DELETE
(demo
cascade-on-delete)

Delete a visitor

DELETE FROM Visitor
WHERE Visitor_ID = userInput1

Before:

QUERY: ALL VISITORS

ID	Name	Phone Number	Email	Age
7	testname	1234	testemail@email.com	5
1	Alan	4161111111	alan.apple@gmail.com	45
2	Bob	4162222222	bob.banana@gmail.com	13
3	Cameron	4162322323	cameron.cherrie@gmail.com	61
4	Daniel	4163233322	daniel.date@gmail.com	62
5	Ethan	4161144141	ethan.eggplant@gmail.com	65
6	Frankie	4161233213	frankie.fruit@gmail.com	12

QUERY: ART PIECES VIEWED BY USER WITH ID 1

ID	Title	Date Created	Medium	Price	Style
10	Mona Lisa	27-SEP-03	Oil	100000	Human Portrait
11	Starry Nights	12-JAN-90	Water colour	1338484	Art Deco

In code:

345
346 executePlainSQL("DELETE FROM Visitor WHERE Visitor_ID = ".\$_POST['deleteVID'].");

ID:

Delete Visitor!

After:

QUERY: ALL VISITORS

ID	Name	Phone Number	Email	Age
2	Bob	4162222222	bob.banana@gmail.com	13
3	Cameron	4162322323	cameron.cherrie@gmail.com	61
4	Daniel	4163233322	daniel.date@gmail.com	62
5	Ethan	4161144141	ethan.eggplant@gmail.com	65
6	Frankie	4161233213	frankie.fruit@gmail.com	12

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QUERY: ART PIECES VIEWED BY USER WITH ID 1

IDTitleDate CreatedMediumPriceStyle

^all subsequent tables w/ tuples where Visitor_ID = 1 is also deleted

UPDATE

Update visitor info

UPDATE Visitor
SET Visitor_Name = **UserInput1**,
Visitor_PhoneNumber = **UserInput2**,
Visitor_Email = **UserInput3**,
Visitor_Age = **UserInput4**
WHERE Visitor_ID = **UserInputID**

Before:

QUERY: ALL VISITORS

IDNamePhone NumberEmailAge

1Alan4161111111alan.apple@gmail.com45

Incode:

```
377 executePlainSQL("UPDATE Visitor
378 SET Visitor_Name = ".$newName.", Visitor_PhoneNumber = ".$newNumber.", Visitor_Email = ".$newEmail.", Visitor_Age = ".$newAge.",
379 WHERE Visitor_ID = ".$POST['editVid']."");
```

Update Visitor Info

Given ID:

Update Name to:

Update Phone # to:

Update Email to:

Update Age to:

QUERY: ALL VISITORS

IDNamePhone NumberEmailAge

1UPDATE TEST1111111hello@email.com3

SELECTION

See art pieces viewed by a certain visitor

SELECT Ap.ArtPiece_ID,
Ap.ArtPiece_Title,
Ap.ArtPiece_DateCreated,
Ap.ArtPiece_Medium,
Ap.ArtPiece_Price,
Ap.ArtPiece_Style
FROM Viewed Vw INNER JOIN
ArtPiece Ap ON Ap.ArtPiece_ID
= Vw.ArtPiece_ID WHERE
Vw.Visitor_ID = **UserInput**

In code:

```
400 $result = executePlainSQL("SELECT Ap.ArtPiece_ID, Ap.ArtPiece_Title, Ap.ArtPiece_DateCreated, Ap.ArtPiece_Medium, Ap.ArtPiece_Price, Ap.ArtPiece_Style
401 FROM Viewed Vw
402 INNER JOIN ArtPiece Ap
403 ON Ap.ArtPiece_ID = Vw.ArtPiece_ID
404 WHERE Vw.Visitor_ID = ".$POST['getVisitorNum']."");
```

Art Pieces Viewed

after:

University of British Columbia, Vancouver

Department of Computer Science

		<div><div><div>Visitor Number</div><div>Art Pieces Viewed</div><div>Artist</div><div>Show All Art Pieces</div><div>Show All Visitors</div><div>Number of Art Pieces per Gallery</div><div>Filter Art Piece Medium</div></div><div>QUERY: ART PIECES VIEWED BY USER WITH ID 5</div><table><tr><th>ID</th><th>Title</th><th>Date Created</th><th>Medium</th><th>Price</th><th>Style</th></tr><tr><td>10</td><td>Mona Lisa</td><td>27-SEP-03</td><td>Oil</td><td>100000</td><td>Human Portrait</td></tr><tr><td>11</td><td>Starry Nights</td><td>12-JAN-90</td><td>Water colour</td><td>1338484</td><td>Art Deco</td></tr><tr><td>12</td><td>Mouse in the Trap</td><td>01-DEC-90</td><td>Acrylics</td><td>348990</td><td>Baroque</td></tr><tr><td>13</td><td>Duck Duck Goose</td><td>27-AUG-98</td><td>Chalk</td><td>3498394839</td><td>Bauhaus</td></tr><tr><td>14</td><td>NeonRed In Your Area</td><td>06-APR-14</td><td>Charcoal</td><td>34938943</td><td>Art Nouveau</td></tr></table></div>	ID	Title	Date Created	Medium	Price	Style	10	Mona Lisa	27-SEP-03	Oil	100000	Human Portrait	11	Starry Nights	12-JAN-90	Water colour	1338484	Art Deco	12	Mouse in the Trap	01-DEC-90	Acrylics	348990	Baroque	13	Duck Duck Goose	27-AUG-98	Chalk	3498394839	Bauhaus	14	NeonRed In Your Area	06-APR-14	Charcoal	34938943	Art Nouveau
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PROJECTION See all current visitors	SELECT Visitor_ID, Visitor_Name, Visitor_PhoneNumber, Visitor_Email, Visitor_Age FROM Visitor	<div>In code: <pre>520 \$result = executePlainSQL("SELECT Visitor_ID, Visitor_Name, Visitor_PhoneNumber, Visitor_Email, Visitor_Age FROM Visitor");</pre></div> <div>After: <div><div><div>Visitor Number</div><div>Art Pieces Viewed</div><div>Artist</div><div>Show All Art Pieces</div><div>Show All Visitors</div><div>Number of Art Pieces per Gallery</div><div>Filter Art Piece Medium</div></div><div>QUERY: ALL VISITORS</div><table><tr><th>ID</th><th>Name</th><th>Phone Number</th><th>Email</th><th>Age</th></tr><tr><td>1</td><td>UPDATE TEST</td><td>1111111</td><td>hello@email.com</td><td>3</td></tr><tr><td>2</td><td>Bob</td><td>4162222222</td><td>bob.banana@gmail.com</td><td>13</td></tr><tr><td>3</td><td>Cameron</td><td>4162322323</td><td>cameron.cherrie@gmail.com</td><td>61</td></tr><tr><td>4</td><td>Daniel</td><td>4163233322</td><td>daniel.date@gmail.com</td><td>62</td></tr><tr><td>5</td><td>Ethan</td><td>4161144141</td><td>ethan.eggplant@gmail.com</td><td>65</td></tr><tr><td>6</td><td>Frankie</td><td>4161233213</td><td>frankie.fruit@gmail.com</td><td>12</td></tr></table></div></div>	ID	Name	Phone Number	Email	Age	1	UPDATE TEST	1111111	hello@email.com	3	2	Bob	4162222222	bob.banana@gmail.com	13	3	Cameron	4162322323	cameron.cherrie@gmail.com	61	4	Daniel	4163233322	daniel.date@gmail.com	62	5	Ethan	4161144141	ethan.eggplant@gmail.com	65	6	Frankie	4161233213	frankie.fruit@gmail.com	12	
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JOIN See all art pieces from specified artist	SELECT ap.ArtPiece_Title, a1.Artist_Name, ap.ArtPiece_DateCreated, ap.ArtPiece_Style, ap.ArtPiece_Medium FROM ArtPiece ap INNER JOIN Created c ON ap.ArtPiece_ID = c.ArtPiece_ID INNER JOIN Artist a1 ON a1.Artist_ID = c.Artist_ID WHERE c.Artist_ID IN (SELECT a.Artist_ID FROM Artist a WHERE a.Artist_Name = UserInput)	<div>In code: <pre>495 \$result = executePlainSQL("SELECT ap.ArtPiece_Title, a1.Artist_Name, ap.ArtPiece_DateCreated, ap.ArtPiece_Style, ap.ArtPiece_Medium 496 FROM ArtPiece ap INNER JOIN Created c 497 ON ap.ArtPiece_ID = c.ArtPiece_ID 498 INNER JOIN Artist a1 ON a1.Artist_ID = c.Artist_ID 499 WHERE c.Artist_ID IN (SELECT a.Artist_ID 500 FROM Artist a 501 WHERE a.Artist_Name = '"+artistName+"'");</pre></div> <div><div><div>Bobby Brown</div><div>Show All Art Pieces</div></div><div>After: QUERY: ALL ART PIECES</div><table><tr><th>Title</th><th>Artist</th><th>Date Created</th><th>Style</th><th>Medium</th></tr><tr><td>Mona Lisa</td><td>Bobby Brown</td><td>27-SEP-03</td><td>Human Portrait</td><td>Oil</td></tr></table></div>	Title	Artist	Date Created	Style	Medium	Mona Lisa	Bobby Brown	27-SEP-03	Human Portrait	Oil																										
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AGGREGATION with GROUP BY	SELECT Gallery_Name, COUNT(*) AS numArt FROM ArtPiece GROUP BY Gallery_Name	<div>In code: <pre>540 \$result = executePlainSQL("SELECT Gallery_Name, COUNT(*) AS numArt FROM ArtPiece GROUP BY Gallery_Name");</pre></div> <div>After:</div>																																				

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See number of art pieces in each gallery		<table> <tr> <td>Show All Art Pieces</td><td colspan="2">QUERY: NUMBER OF ART PIECES PER GALLERY</td></tr> <tr> <td>Show All Visitors</td><td>Gallery Name</td><td>Number of Art Pieces</td></tr> <tr> <td>Number of Art Pieces per Gallery</td><td>Mural</td><td>1</td></tr> <tr> <td>Filter Art Piece Medium</td><td>Decora</td><td>1</td></tr> <tr> <td></td><td>Patronizing</td><td>1</td></tr> <tr> <td></td><td>Antiquities</td><td>1</td></tr> <tr> <td></td><td>Artovox</td><td>1</td></tr> </table>	Show All Art Pieces	QUERY: NUMBER OF ART PIECES PER GALLERY		Show All Visitors	Gallery Name	Number of Art Pieces	Number of Art Pieces per Gallery	Mural	1	Filter Art Piece Medium	Decora	1		Patronizing	1		Antiquities	1		Artovox	1
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AGGREGATION with HAVING See how much people have viewed each art piece medium -- medium > 2 views	SELECT ArtPiece_Medium, SUM(ArtPiece_NumberOfViews) AS totalViews FROM ArtPiece GROUP BY ArtPiece_Medium HAVING SUM(ArtPiece_NumberOfViews) > 2	In code: <pre> 558 \$result = executePlainSQL("SELECT ArtPiece_Medium, SUM(ArtPiece_NumberOfViews) AS totalViews 559 FROM ArtPiece 560 GROUP BY ArtPiece_Medium 561 HAVING SUM(ArtPiece_NumberOfViews) > 2"); </pre> After: <table> <tr> <td>Show All Art Pieces</td><td colspan="2">QUERY: POPULARITY OF ART MEDIUMS</td></tr> <tr> <td>Show All Visitors</td><td>Medium</td><td>Total Number of Views</td></tr> <tr> <td>Number of Art Pieces per Gallery</td><td>Charcoal</td><td>93843</td></tr> <tr> <td>Filter Art Piece Medium</td><td>Water colour</td><td>6367488</td></tr> <tr> <td></td><td>Acrylics</td><td>839829</td></tr> <tr> <td></td><td>Chalk</td><td>29302803</td></tr> <tr> <td></td><td>Oil</td><td>123455432</td></tr> </table>	Show All Art Pieces	QUERY: POPULARITY OF ART MEDIUMS		Show All Visitors	Medium	Total Number of Views	Number of Art Pieces per Gallery	Charcoal	93843	Filter Art Piece Medium	Water colour	6367488		Acrylics	839829		Chalk	29302803		Oil	123455432
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NESTED AGGREGATION WITH GROUP BY Get average prices for each art style -- only on styles that have at least 1 painting created on/after 1990-01-01	SELECT ap1.ArtPiece_Style, AVG(ap1.ArtPiece_Price) AS averagePrice FROM ArtPiece ap1 GROUP BY ap1.ArtPiece_Style HAVING ap1.ArtPiece_Style IN (SELECT ap2.ArtPiece_Style FROM ArtPiece ap2 WHERE ap2.ArtPiece_DateCreated >= DATE '1990-01-01')	In code: <pre> 579 \$result = executePlainSQL("SELECT ap1.ArtPiece_Style, AVG(ap1.ArtPiece_Price) AS averagePrice 580 FROM ArtPiece ap1 581 GROUP BY ap1.ArtPiece_Style 582 HAVING ap1.ArtPiece_Style IN (SELECT ap2.ArtPiece_Style 583 FROM ArtPiece ap2 584 WHERE ap2.ArtPiece_DateCreated >= DATE '1990-01-01')"); </pre> After: <table> <tr> <td>Show All Art Pieces</td><td colspan="2">QUERY: AVERAGE ART PRICES</td></tr> <tr> <td>Show All Visitors</td><td>Style</td><td>Average Price</td></tr> <tr> <td>Number of Art Pieces per Gallery</td><td>Art Nouveau</td><td>34938943</td></tr> <tr> <td>Filter Art Piece Medium</td><td>Baroque</td><td>348990</td></tr> <tr> <td>Average Price of "Modern" Art Pieces</td><td>Bauhaus</td><td>3498394839</td></tr> </table>	Show All Art Pieces	QUERY: AVERAGE ART PRICES		Show All Visitors	Style	Average Price	Number of Art Pieces per Gallery	Art Nouveau	34938943	Filter Art Piece Medium	Baroque	348990	Average Price of "Modern" Art Pieces	Bauhaus	3498394839						
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DIVISION Get visitors who have seen all art pieces in the db	SELECT Vi.Visitor_Name, Vi.Visitor_Email FROM Visitor Vi WHERE NOT EXISTS (SELECT Ap.ArtPiece_ID FROM ArtPiece Ap WHERE NOT EXISTS (SELECT Vw.Visitor_ID FROM Viewed Vw WHERE Vw.ArtPiece_ID =	In code: <pre> 602 \$result = executePlainSQL("SELECT Vi.Visitor_Name, Vi.Visitor_Email 603 FROM Visitor Vi 604 WHERE NOT EXISTS 605 (SELECT Ap.ArtPiece_ID 606 FROM ArtPiece Ap 607 WHERE NOT EXISTS 608 (SELECT Vw.Visitor_ID 609 FROM Viewed Vw 610 WHERE Vw.ArtPiece_ID = Ap.ArtPiece_ID 611 AND Vw.Visitor_ID = Vi.Visitor_ID)); </pre>																					

	Ap.ArtPiece_ID AND Vw.Visitor_ID = Vi.Visitor_ID))	<div>After:</div> <div><div>Show All Art Pieces</div><div>Show All Visitors</div><div>Number of Art Pieces per Gallery</div><div>Filter Art Piece Medium</div><div>Average Price of "Modern" Art Pieces</div><div>Dedicated Visitors</div></div> <div><div>QUERY: DEDICATED VISITORS</div><table><tr><th>Visitor's Name</th><th>Email</th></tr><tr><td>Ethan</td><td>ethan.eggplant@gmail.com</td></tr></table></div>	Visitor's Name	Email	Ethan	ethan.eggplant@gmail.com
Visitor's Name	Email					
Ethan	ethan.eggplant@gmail.com					