

University of British Columbia, Vancouver
Department of Computer Science

CPSC 304 Project Cover Page

Milestone #: 4

Date: November 25, 2022

Group Number: 93

Name	Student Number	CS Alias (Userid)	Preferred E-mail Address
Timothy Yap	43665868	n8g3b	timothyyap1106@gmail.com
Vihangi Perera	28944866	y2y8m	vihangiperera9@gmail.com
Ezekiel Eteve	65462202	a9d7m	zeke.eteveuni@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

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

Our project models the UBC housing system. Our database has tables for all the possible entities in the housing system such as campuses, residences, residents, amenities and residence staff and the relationships between them.

For our final project we decided to implement an interface for future and current residents of UBC Housing. Current residents can view their personal residence information such as their room number and rent by logging in with their login information. They can also delete their residency if they want to move out, and visitors can update their length of stay. Prospective residents can look at information regarding the residences such a rent, types of rooms and amenities. They can also submit an application to live in UBC Housing.

2. A description of how your final schema differed from the schema you turned in.

The following schema did not change from the original to the final:

- **Campus**(ID, Name, Address)
- **ResidenceStaff**(ID, Name, Birthdate, *S/N*, ResidenceLifePosition, BuildingMaintenanceStaffJobTitle, DiningHallName, DiningHallPosition)
- **Residence**(ID, Address, Name)
- **Application**(ID, Name, Resident Type, 1stPrefRoomType, 2ndPrefRoomType, 1stPrefResidence, 2ndPrefResidence, Session, CWL, Student Number, Program, Email Address, Length of Stay, Employee Number, NoOfAccompanysFamilyMembers)
- **CFA**(ID, Accessibility Accommodation)
- **Resident**(ID, Name, Session, CWL, Student Number, Program, Email Address, Length of Stay, Employee Number, NoOfAccompanysFamilyMembers)
- **Works**(ResidenceStaffID, ResidenceID)

In the following schema, the tables names were changed, but the keys and attributes did not change:

- **Contains**(CampusID, ResidenceID) → **residenceOnCampus**(CampusID, ResidenceID)
- **Has**(ResidenceID, ApplicationID) → **applicationsForResidence**(ResidenceID, ApplicationID)
- **CanBeAPartOf**(ResidentID, CFAID) → **CFAresidents**(ResidentID, CFAID)
- **CanLiveWith**(ResidentID, OtherResidentID) → **LivesWith**(ResidentID, OtherResidentID)

The following schema had some changes:

- **Amenities**(ID, Name, NoOfRooms) → **Amenities**(ID, Name)

The NoOfRooms attribute was removed because we realized we put it in the wrong table and that it should actually be in the amenitiesInResidence table.

- **Got(AmenityID, ResidenceID) → amenitiesInResidence(AmenityID, ResidenceID, noOfRooms)**
The table name changed from Got to amenitiesInResidence. We also added the noOfRooms attribute that we removed from the Amenities table to this table because it made more sense for it to be in this table so that we know how many a rooms are in each residence.
- **RoomAllocationInfo(House, Unit Number, ResidentID, Name, Session, StudentNumber, CWL, Program, EmployeeNumber, NoOfAccompanyingFamilyMembers, EmailAddress, LengthOfStay) → RoomAllocationInfo(House, Unit Number, ResidentID, ResidenceID)**
We removed the attributes Name, Session, StudentNumber, CWL, Program, EmployeeNumber, NoOfAccompanyingFamilyMembers, EmailAddress and LengthOfStay from this table as we realized that those are unnecessary and that we do not need them for the purpose of this table as we have their residentID already and we can get that information using the residentID if needed. We also added ResidenceID as a foreign key as we realized we needed it here to see which residence the room allocation belonged to.
- **HouseResidenceInfo(House, Unit Number, ResidenceID) → RoomInfo(House, Unit Number, ResidenceID, Room Type, Rent)**
The table name changed from HouseResidenceInfo to RoomInfo. We added RoomType and Rent to this table because we realized that it was supposed to be in this table as it is a relationship table and that we had forgotten to add it the table in the previous milestone.

The following tables were deleted as they were redundant and were only created for the normalization process:

- **RoomInfo(House, Unit Number, Room Type, Rent)**
- **RoomType(House, Unit Number, Room Type)**
- **Rent(House, Rent, Room Type)**

3. 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.

- **Campus**(ID, Name, Address)

CAMPUSID	CAMPUSNAME	CAMPUSADDRESS
1	University of British Columbia West Point Grey	University Endowment Lands, Vancouver, BC
2	University of British Columbia Okanagan	3333 University Way, Kelowna, BC
3	University of British Columbia Robson	800 Robson St, Vancouver, BC
4	University of British Columbia Revelstoke	416 9th St, Revelstoke, BC
5	University of British Columbia Granville	1050 Granville St, Vancouver, BC

- **ResidenceStaff**(ID, Name, Birthdate, S/N, ResidenceLifePosition, BuildingMaintenanceStaffJobTitle, DiningHallName, DiningHallPosition)

STAFFID	STAFFNAME	BIRTHDATE	SINNO	RESIDENCELIFEPOSITION	BUILDINGMAINTENANCETITLE	DININGHALLNAME	DININGHALLPOSITION
67001	Thomas Lloyd	18-FEB-00	573972784	Front Desk Staff			
67002	Harry Potter	24-MAY-97	184475920			Open Kitchen	Line Cook
67003	Rosie Turner	30-SEP-89	374017389		Electrician		
67004	Julian Watson	05-DEC-99	365910037		Plumber	Gather	Cashier
67005	Mike Wazowski	13-OCT-01	102847269	Residence Advisor			

- **Residence**(ID, Address, Name)

RESIDENCEID	RESIDENCEADDRESS	RESIDENCENAME
110	6363 Agronomy Road, Vancouver, BC	Orchard Commons
120	6335 Thunderbird Crescent, Vancouver, BC	Thunderbird Residence
130	2075 West Mall, Vancouver, BC	Ponderosa Commons
140	5959 Student Union Blvd., Vancouver, BC	Walter Gage
150	2525 West Mall, Vancouver, BC	Totem Park

- **Application**(ID, Name, Resident Type, 1stPrefRoom, 2ndPrefRoom, 1stPrefResidence, 2ndPrefResidence, HousingSession, CWL, StudentNumber, Program, Email Address, Length of Stay, Employee Number, NoOfAccompanysFamilyMembers)

APPLICATIONID	APPLICANTNAME	RESIDENTTYPE	FIRSTPREFROOM	SECONDPREFROOM	FIRSTPREFRESIDENCE	SECONDPREFRESIDENCE
201	Roger Brown	Student	Studio	2 Bedroom	Totem Park	
202	Catherine Davis	Visitor	2 Bedroom	Studio	Ponderosa Commons	Marine Drive
203	John Cena	Student	Connected Bathroom	2 Bedroom	Totem Park	Thunderbird Residences
204	Mike Wazowski	Visitor	3 Bedroom	2 Bedroom	Orchard Commons	Walter Gage
205	Ylong Musk	Employee	Studio	1 Bedroom	Vanier	Walter Gage

HOUSINGSESSION	CWL	STUDENTNUMBER	PROGRAM	EMAILADDRESS	LENGTHOFSTAY	EMPLOYEEENNUMBER	NOOFACCOMPANYSFAMILYMEMBERS
2021W	rogerb	78627864	Undergraduate				
2022S				cat57davis@gmail.com	2 weeks		
2023W	jCena69	65462269	Undergraduate	itsJohnCenaBaby@gmail.com			
2022W				mikewazzup@gmail.com	5 years		
2023S				YMusk666@gmail.com	25 years	99997654	1

- **CFA**(ID, Accessibility Accommodation)

CFAID	ACCESSIBILITYACCOMMODATION
38911	OCD Accomodations
39285	Dyslexia Accomodations
38957	Anxiety Accomadations
39275	Mobility Accomadations
38562	Mobility Accomadations

- **Resident**(ID, Name, Session, CWL, Student Number, Program, Email Address, Length of Stay, Employee Number, NoOfAccompanyingFamilyMembers)

RESIDENTID	RESIDENTNAME	HOUSINGSESSION	CWL	STUDENTNUMBER	PROGRAM
11	John Smith	2022W	Jsmith10	12446798	Undergraduate
22	Jane Doe	2022W	JaneD2	45628719	Undergraduate
33	William Jones	2022W			
44	Sarah Clark	2022W			
55	George Shrinks	2021W			
66	Jessica Parker	2022W	127Jess	28920292	Graduate
77	John Wall	2022W	JWall02	65462203	Undergraduate

EMAILADDRESS	LENGTHOFSTAY	EMPLOYEE NUMBER	NOOFACCOMPANYINGFAMILYMEMBERS
		231	3
		574	2
gshrinks123@gmail.com	7 days		

- **Works**(ResidenceStaffID, ResidenceID)

RESIDENCESTAFFID	RESIDENCEID
67001	110
67002	110
67003	120
67004	140
67005	150

- **residenceOnCampus**(CampusID, ResidenceID)

CAMPUSID	RESIDENCEID
1	110
1	120
1	140
2	130
2	150

- applicationsForResidence(ResidenceID, ApplicationID)

RESIDENCEID	APPLICATIONID
110	201
110	202
120	203
130	204
140	205

- CFAresidents

RESIDENTID	CFAID
11	38562
22	38957
33	38911
44	38911
55	39275

- LivesWith(ResidentID, OtherResidentID)

RESIDENTID	OTHERRESIDENTID
11	22
11	33
11	44
11	55
66	77

- Amenities(ID, Name)

AMENITYID	AMENITYNAME
2345	Laundry
2346	Study Room
2347	Ping Pong Table
2348	Copy Room
2349	Garbage Room

- **amenitiesInResidence**(**AmenityID, ResidenceID, noOfRooms**)

AMENITYID	RESIDENCEID	NOOFROOMS
2345	110	3
2345	130	2
2349	140	1
2346	140	2
2349	150	4
2346	130	2
2347	130	1
2348	130	1
2349	130	4

- **RoomAllocationInfo**(**House, Unit Number, ResidentID, ResidenceID**)

HOUSE	UNITNUMBER	RESIDENTID	RESIDENCEID
Bartlett	114	11	110
Maple	123	22	120
Selkirk	321	44	130
Columbia	124	33	120
McDonald	314	55	110
McDonald	315	66	110
Bartlett	115	77	110

- **RoomInfo**(**House, Unit Number, ResidenceID, Room Type, Rent**)

HOUSE	UNITNUMBER	ROOMTYPE	RENT	RESIDENCEID
Bartlett	114	Connected Bathroom	1375	110
Maple	123	Shared four-bedroom	965	120
Selkirk	321	Shared four-bedroom	965	130
Columbia	124	Shared four-bedroom	965	140
McDonald	314	Studio	1300	110
McDonald	315	Studio	1450	110
Bartlett	115	Connected Bathroom	900	110

4. A list of all SQL queries used. For SQL query requirements, check the rubric listed on Canvas for Milestone 4.

INSERT: `INSERT INTO Application VALUES (?, ?, ?, ?, ?, ?, ?, ?, ?, ?, ?, ?, ?, ?, ?)`

DELETE:

- if (student): `DELETE FROM Resident WHERE studentNumber = ?`
- if (employee): `DELETE FROM Resident WHERE EmployeeNumber = ?`

UPDATE: UPDATE Resident SET LengthofStay = ? WHERE EmailAddress = ?

SELECTION & PROJECTION:

- For Student: SELECT residentID, residentName, housingSession FROM Resident WHERE studentNumber = ?
SELECT House, unitNumber, residenceID FROM RoomAllocationInfo WHERE residentID = ?
SELECT residenceName FROM Residence WHERE residenceID = ?
SELECT roomType, Rent FROM RoomInfo WHERE House = ? AND unitNumber = ?
- For Employee: SELECT residentID, residentName, housingSession FROM Resident WHERE EmployeeNumber = ?
SELECT House, unitNumber, residenceID FROM RoomAllocationInfo WHERE residentID = ?
SELECT residenceName FROM Residence WHERE residenceID = ?
SELECT roomType, Rent FROM RoomInfo WHERE House = ? AND unitNumber = ?
- For Visitor: SELECT residentID, residentName, housingSession FROM Resident WHERE EmailAddress = ?
SELECT House, unitNumber, residenceID FROM RoomAllocationInfo WHERE residentID = ?
SELECT residenceName FROM Residence WHERE residenceID = ?
SELECT roomType, Rent FROM RoomInfo WHERE House = ? AND unitNumber = ?

GROUPBY:

- For MAX rent: SELECT residenceName, MAX(Rent) AS Rent FROM RoomInfo INNER JOIN Residence ON RoomInfo.residenceID = Residence.residenceID GROUP BY residenceName
- For MIN rent: SELECT residenceName, MIN(Rent) AS Rent FROM RoomInfo INNER JOIN Residence ON RoomInfo.residenceID = Residence.residenceID GROUP BY residenceName

HAVING: SELECT campusName FROM ((residenceOnCampus INNER JOIN Campus ON residenceOnCampus.CampusID = Campus.CampusID) INNER JOIN Residence ON residenceOnCampus.ResidenceID = Residence.residenceID) GROUP BY campusName HAVING COUNT(*) >= ?

JOIN: SELECT residenceName FROM ((amenitiesInResidence INNER JOIN Amenities ON amenitiesInResidence.AmenityID = Amenities.amenityID) INNER JOIN Residence ON amenitiesInResidence.ResidenceID = Residence.residenceID) WHERE amenityName = ?

NESTED AGGREGATION: SELECT roomType, AVG(rent) as Rent FROM RoomInfo WHERE residenceID IN (SELECT residenceID FROM Residence WHERE residenceName = ?) GROUP BY roomType

DIVISION: `SELECT residenceName FROM Residence WHERE NOT EXISTS ((SELECT AmenityID FROM Amenities) MINUS (SELECT AmenityID FROM amenitiesInResidence WHERE amenitiesInResidence.ResidenceID = residence.ResidenceID))`

5. Screenshots of the sample output of the queries using the GUI (for example, you can show what data is in your table before you run the query, and then show another screenshot after running the query, from some kind of GUI input like a button).

INSERT QUERY

Before:

APPLICATIONID	APPLICANTNAME	RESIDENTTYPE	FIRSTPREFROOM	SECONDPREFROOM	FIRSTPREFRESIDENCE	SECONDPREFRESIDENCE
201	Roger Brown	Student	Studio	2 Bedroom	Totem Park	
202	Catherine Davis	Visitor	2 Bedroom	Studio	Ponderosa Commons	Marine Drive
203	John Cena	Student	Connected Bathroom	2 Bedroom	Totem Park	Thunderbird Residences
204	Mike Wazowski	Visitor	3 Bedroom	2 Bedroom	Orchard Commons	Walter Gage
205	Ylong Musk	Employee	Studio	1 Bedroom	Vanier	Walter Gage

HOUSINGSESSION	CWL	STUDENTNUMBER	PROGRAM	EMAILADDRESS	LENGTHOFSTAY	EMPLOYEEENNUMBER	NOOFACCOMPANYSFAMILYMEMBERS
2021W	rogerb	78627864	Undergraduate	cat57davis@gmail.com	2 weeks		
2022S				itsJohnCenaBaby@gmail.com			
2023W	jCena69	65462269	Undergraduate	mikeWazzup@gmail.com	5 years		
2022W				YMusk666@gmail.com	25 years	99997654	1
2023S							

After:

APPLICATIONID	APPLICANTNAME	RESIDENTTYPE	FIRSTPREFROOM	SECONDPREFROOM	FIRSTPREFRESIDENCE	SECONDPREFRESIDENCE
201	Roger Brown	Student	Studio	2 Bedroom	Totem Park	
202	Catherine Davis	Visitor	2 Bedroom	Studio	Ponderosa Commons	Marine Drive
203	John Cena	Student	Connected Bathroom	2 Bedroom	Totem Park	Thunderbird Residences
204	Mike Wazowski	Visitor	3 Bedroom	2 Bedroom	Orchard Commons	Walter Gage
205	Ylong Musk	Employee	Studio	1 Bedroom	Vanier	Walter Gage
500	Vihangi Perera	Student	4 Bedroom	Studio	Ponderosa Commons	Thunderbird Residence

HOUSINGSESSION	CWL	STUDENTNUMBER	PROGRAM	EMAILADDRESS	LENGTHOFSTAY	EMPLOYEEENNUMBER	NOOFACCOMPANYSFAMILYMEMBERS
2021W	rogerb	78627864	Undergraduate	cat57davis@gmail.com	2 weeks		
2022S				itsJohnCenaBaby@gmail.com			
2023W	jCena69	65462269	Undergraduate	mikeWazzup@gmail.com	5 years		
2022W				YMusk666@gmail.com	25 years	99997654	1
2023S							
2020S	vihangip	28944866	Undergraduate				

Query: Adds a new application to the database

New Application

Which Resident are you? (Enter: Student, Staff, or Visitor)

Student

Enter First and Last Name

Vihangi Perera

1st Choice of Preferred Residence

Ponderosa Commons

2nd Choice of Preferred Residence

Thunderbird

1st Choice of Preferred Room Type

4 Bedrooms

2nd Choice of Preferred Room Type

Studio

For Students and Staff Only: Enter Session

2020S

if you are a student please complete the following:

Student Number

28944866

CWL

vihangip

Program

Undergraduate

if you are staff please complete the following:

Employee Number

Number of Accompanying Family Members

if you are a visitor please complete the following:

Email Address

Length of stay

Submit Application

DELETE QUERY

Before:

RESIDENTID	RESIDENTNAME	HOUSINGSESSION	CWL	STUDENTNUMBER	PROGRAM
11	John Smith	2022W	Jsmith10	12446798	Undergraduate
22	Jane Doe	2022W	JaneD2	45628719	Undergraduate
33	William Jones	2022W			
44	Sarah Clark	2022W			
55	George Shrinks	2021W			
66	Jessica Parker	2022W	127Jess	28920292	Graduate
77	John Wall	2022W	JWall02	65462203	Undergraduate

EMAILADDRESS	LENGTHOFSTAY	EMPLOYEENUMBER	N00FACCOMPANYINGFAMILYMEMBERS
		231	3
		574	2
gshrinks123@gmail.com	7 days		

Query: Deletes a resident depending on the type of resident (i.e. employee, student)

Resident Information

Name: John Smith

Session: 2022W

House: Bartlett

Unit Number: 114

Residence Name: Orchard Commons

Room Type: Connected Bathroom

Rent: 1375

For Visitors Only: If you would like to update your length of stay,

Enter email address below:

Enter the updated length of stay below:

Update

For Students Only: If you would like to move out:

Enter Student Number below:

12446798

Move Out

For Staff Only: If you would like to move out:

Enter Staff ID below:

Move Out

After:

RESIDENTID	RESIDENTNAME	HOUSINGSESSION
22	Jane Doe	2022W
33	William Jones	2022W
44	Sarah Clark	2022W
55	George Shrinks	2021W
66	Jessica Parker	2022W
77	John Wall	2022W

CWL	STUDENTNUMBER	PROGRAM
JaneD2	45628719	Undergraduate
WillJones44		
Sclark99		
Shrinks123		
127Jess	28920292	Graduate
JWall02	65462203	Undergraduate

EMAILADDRESS	LENGTHOFSTAY	EMPLOYEEENUMBER	NOOFACCOMPANYSFAMILYMEMBERS
		231	3
		574	2
gshrinks123@gmail.com	7days		

UPDATE QUERY

Before:

RESIDENTID	RESIDENTNAME	HOUSINGSESSION	CWL	STUDENTNUMBER	PROGRAM
11	John Smith	2022W	Jsmith10	12446798	Undergraduate
22	Jane Doe	2022W	JaneD2	45628719	Undergraduate
33	William Jones	2022W			
44	Sarah Clark	2022W			
55	George Shrinks	2021W			
66	Jessica Parker	2022W	127Jess	28920292	Graduate
77	John Wall	2022W	JWall02	65462203	Undergraduate

EMAILADDRESS	LENGTHOFSTAY	EMPLOYEEENUMBER	NOOFACCOMPANYINGFAMILYMEMBERS
		231	3
		574	2
gshrinks123@gmail.com	7 days		

After:

RESIDENTID	RESIDENTNAME	HOUSINGSESSION	CWL	STUDENTNUMBER	PROGRAM
11	John Smith	2022W	Jsmith10	12446798	Undergraduate
22	Jane Doe	2022W	JaneD2	45628719	Undergraduate
33	William Jones	2022W			
44	Sarah Clark	2022W			
55	George Shrinks	2021W			
66	Jessica Parker	2022W	127Jess	28920292	Graduate
77	John Wall	2022W	JWall02	65462203	Undergraduate

EMAILADDRESS	LENGTHOFSTAY	EMPLOYEEENUMBER	NOOFACCOMPANYSFAMILYMEMBERS
		231	3
		574	2
gshrinks123@gmail.com	10 DAYS		

Query: Updates the visitor's length of stay from 7 days to 10 days.

Resident Information

Name: George Shrinks

Session: 2021W

House: McDonald

Unit Number: 314

Residence Name: Orchard Commons

Room Type: Studio

Rent: 1300

For Visitors Only: If you would like to update your length of stay,

Enter email address below:

gshrinks123@gmail.com

Enter the updated length of stay below:

10 Days

Update

For Students Only: If you would like to move out:

Enter Student Number below:

Move Out

For Staff Only: If you would like to move out:

Enter Staff ID below:

Move Out

SELECTION & PROJECTION QUERY

Tables:

RESIDENTID	RESIDENTNAME	HOUSINGSESSION	CWL	STUDENTNUMBER	PROGRAM
11	John Smith	2022W	Jsmith10	12446798	Undergraduate
22	Jane Doe	2022W	Jane02	45628719	Undergraduate
33	William Jones	2022W			
44	Sarah Clark	2022W			
55	George Shrinks	2021W			
66	Jessica Parker	2022W	127Jess	28920292	Graduate
77	John Wall	2022W	JWall02	65462203	Undergraduate

EMAILADDRESS	LENGTHOFSTAY	EMPLOYEEENUMBER	N00FACCOMPANYINGFAMILYMEMBERS
		231	3
		574	2
gshrinks123@gmail.com	7 days		

HOUSE	UNITNUMBER	RESIDENTID	RESIDENCEID
Bartlett	114	11	110
Maple	123	22	120
Selkirk	321	44	130
Columbia	124	33	120
McDonald	314	55	110
McDonald	315	66	110
Bartlett	115	77	110

HOUSE	UNITNUMBER	ROOMTYPE	RENT	RESIDENCEID
Bartlett	114	Connected Bathroom	1375	110
Maple	123	Shared four-bedroom	965	120
Selkirk	321	Shared four-bedroom	965	130
Columbia	124	Shared four-bedroom	965	140
McDonald	314	Studio	1300	110
McDonald	315	Studio	1450	110
Bartlett	115	Connected Bathroom	900	110

Query: Enter student Number 45628719 to display resident information.

Login

Please enter Student Number

45628719

Student Login

Please enter Staff ID

Staff Login

Please enter Email (For Visitors)

Visitor Login

Start New Application

See Residence Information

Output:

Resident Information

Name: Jane Doe

Session: 2022W

House: Maple

Unit Number: 123

Residence Name: Thunderbird Residence

Room Type: Shared four-bedroom

Rent: 965

For Visitors Only: If you would like to update your length of stay,
Enter email address below:

Enter the updated length of stay below:

Update

For Students Only: If you would like to move out:
Enter Student Number below:

Move Out

For Staff Only: If you would like to move out:
Enter Staff ID below:

Move Out

GROUPBY QUERY

Tables:

HOUSE	UNITNUMBER	ROOMTYPE	RENT	RESIDENCEID
Bartlett	114	Connected Bathroom	1375	110
Maple	123	Shared four-bedroom	965	120
Selkirk	321	Shared four-bedroom	965	130
Columbia	124	Shared four-bedroom	965	140
McDonald	314	Studio	1300	110
McDonald	315	Studio	1450	110
Bartlett	115	Connected Bathroom	900	110

RESIDENCEID	RESIDENCEADDRESS	RESIDENCENAME
110	6363 Agronomy Road, Vancouver, BC	Orchard Commons
120	6335 Thunderbird Crescent, Vancouver, BC	Thunderbird Residence
130	2075 West Mall, Vancouver, BC	Ponderosa Commons
140	5959 Student Union Blvd., Vancouver, BC	Walter Gage
150	2525 West Mall, Vancouver, BC	Totem Park

Query: Find the minimum rent for each residence.

Choose Min or Max to find the corresponding rent for each residence

Min

Find Rent Info

Output:

Residence Information				
Residences and their rent: Minimum rent for Orchard Commons is 900\$ Minimum rent for Ponderosa Commons is 965\$ Minimum rent for Thunderbird Residence is 965\$ Minimum rent for Walter Gage is 965\$				

HAVING QUERY

Tables:

CAMPUSID	RESIDENCEID
1	110
1	120
1	140
2	130
2	150

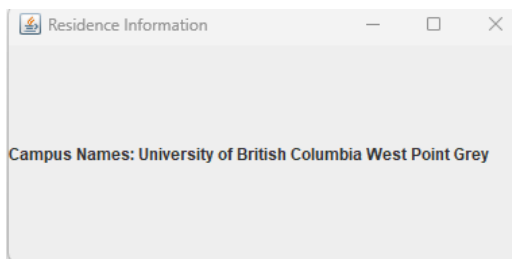
CAMPUSID	CAMPUSNAME
1	University of British Columbia West Point Grey
2	University of British Columbia Okanagan
3	University of British Columbia Robson
4	University of British Columbia Revelstoke
5	University of British Columbia Granville

Query: Find campuses that have atleast 3 Residences

Enter a number to find campus names that have the number of residences below:

Find Campus Names

Output:



JOIN QUERY

Tables:

AMENITYID	RESIDENCEID	NOOFROOMS
2345	110	3
2345	130	2
2349	140	1
2346	140	2
2349	150	4
2346	130	2
2347	130	1
2348	130	1
2349	130	4

AMENITYID	AMENITYNAME
2345	Laundry
2346	Study Room
2347	Ping Pong Table
2348	Copy Room
2349	Garbage Room

RESIDENCEID	RESIDENCEADDRESS	RESIDENCENAME
110	6363 Agronomy Road, Vancouver, BC	Orchard Commons
120	6335 Thunderbird Crescent, Vancouver, BC	Thunderbird Residence
130	2075 West Mall, Vancouver, BC	Ponderosa Commons
140	5959 Student Union Blvd., Vancouver, BC	Walter Gage
150	2525 West Mall, Vancouver, BC	Totem Park

Query: Find all residences that have Laundry.

Enter an amenity to find all residences with that amenity:

Laundry

Find Residences With The Given Amenity

Output:

Residence Information

Residences with amenities: Orchard CommonsPonderosa Commons

NESTED AGGREGATION QUERY

Tables:

HOUSE	UNITNUMBER	ROOMTYPE	RENT	RESIDENCEID
Bartlett	114	Connected Bathroom	1375	110
Maple	123	Shared four-bedroom	965	120
Selkirk	321	Shared four-bedroom	965	130
Columbia	124	Shared four-bedroom	965	140
McDonald	314	Studio	1300	110
McDonald	315	Studio	1450	110
Bartlett	115	Connected Bathroom	900	110

RESIDENCEID	RESIDENCEADDRESS	RESIDENCENAME
110	6363 Agronomy Road, Vancouver, BC	Orchard Commons
120	6335 Thunderbird Crescent, Vancouver, BC	Thunderbird Residence
130	2075 West Mall, Vancouver, BC	Ponderosa Commons
140	5959 Student Union Blvd., Vancouver, BC	Walter Gage
150	2525 West Mall, Vancouver, BC	Totem Park

Query: Find the average rent for all room types in Orchard Commons.

Enter a residence name below to find the average rent:

Orchard Commons

Find Average Rent

Output:

Residence Information

Residences and their average rent: Average Rent for a Connected Bathroom in Orchard Commons is 1137\$ Average Rent for a Studio in Orchard Commons is 1375\$

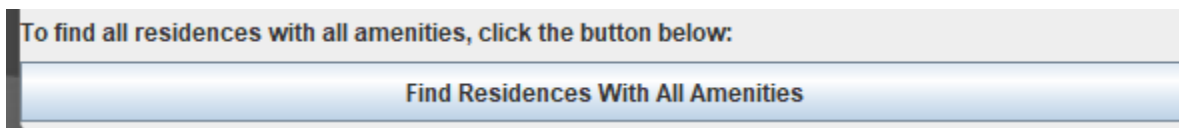
DIVISION QUERY

Tables:

AMENITYID	RESIDENCEID	NOOFRROOMS
2345	110	3
2345	130	2
2349	140	1
2346	140	2
2349	150	4
2346	130	2
2347	130	1
2348	130	1
2349	130	4

RESIDENCEID	RESIDENCEADDRESS	RESIDENCENAME
110	6363 Agronomy Road, Vancouver, BC	Orchard Commons
120	6335 Thunderbird Crescent, Vancouver, BC	Thunderbird Residence
130	2075 West Mall, Vancouver, BC	Ponderosa Commons
140	5959 Student Union Blvd., Vancouver, BC	Walter Gage
150	2525 West Mall, Vancouver, BC	Totem Park

Query: Find the Residences with all the amenities.



Output:

