

USE BUDT703\_Project\_0506\_09

```
DROP TABLE IF EXISTS [SMC.Amenities]
DROP TABLE IF EXISTS [SMC.Provide]
DROP TABLE IF EXISTS [SMC.Review]
DROP TABLE IF EXISTS [SMC.DataSource]
DROP TABLE IF EXISTS [SMC.Customer]
DROP TABLE IF EXISTS [SMC.Apartment]
DROP TABLE IF EXISTS [SMC.Owner]
DROP TABLE IF EXISTS [SMC.Location]
```

```
CREATE TABLE [SMC.Location](
    lctId CHAR (6) NOT NULL,
    lctStreet VARCHAR(50),
    lctCity VARCHAR(20),
    lctState CHAR(2),
    lctZip CHAR(5),
    lctDistBus DECIMAL(10,2),
    lctDistMetro DECIMAL(10,2),
    lctDistUMD DECIMAL(10,2),
    lctDistGrocery DECIMAL(10,2),
    lctGroceryStore VARCHAR(20),
    CONSTRAINT pk_Location_lctId PRIMARY KEY(lctId))
```

```
INSERT INTO [SMC.Location] VALUES
('lct001','3422 Tulane Dr','College Park','MD','20783',0.05,2.2,1.4,1.1,'Patel
Brothers'),
('lct002','4300 Hartwick Rd','College Park','MD','20740',0.1,0.7,0.4,0.6,'Target'),
('lct003','8125 48th ave ','College Park','MD','20740',0.2,1.3,1.5,0.5,'Lidl'),
('lct004','8150 Baltimore Ave','College
Park','MD','20740',0.06,1.3,1.4,0.4,'Lidl'),
('lct005','4800 Berwyn House Rd','College
Park','MD','20740',0.3,1.7,1.7,0.4,'Lidl'),
('lct006','4700 Berwyn House Rd','College
Park','MD','20740',0.06,1.5,1.5,0.3,'Lidl'),
('lct007','4500 College Ave','College Park','MD','20740',0.3,0.6,0.7,0.9,'Whole
Foods'),
('lct008','3711 Campus Dr','College Park','MD','20740',0.5,1.4,0.7,1.2,'Lidl'),
('lct009','8204 Baltimore Avenue','College
Park','MD','20740',0.1,1.4,1.5,0.3,'Lidl'),
('lct010','9530 Baltimore Ave','College Park','MD','20740',0.7,2.8,2.8,1,'Lidl')
```

```
CREATE TABLE [SMC.Owner](
    ownId CHAR(3) NOT NULL,
    ownName VARCHAR(50),
    ownType VARCHAR(20),
    ownPhone CHAR (10),
    CONSTRAINT pk_Owner_ownId PRIMARY KEY(ownId) )
```

```
INSERT INTO [SMC.Owner] VALUES
('SMC','Southern Management Companies','Company','2406811064'),
('BSL','Bhom Student Living','Company','8666621372'),
('LPA','Live Parkside Apartments','Company','2403418675'),
('GSR','Greystar','Company','3015639074'),
('UCM','UComm','Company','3013453388'),
('ETT','Entrata','Company','3016180990'),
('CGM','Cardinal Group Management','Company','3017612575'),
('UDR','United Dominion Realty Trust','Company','2405818653'),
('TSG','The Scion Group','Company','3013046500'),
```

```
('CAM','Campus Apartments Management','Company','8885689177')
```

```
CREATE TABLE [SMC.Apartment](
    aptId CHAR(2) NOT NULL,
    aptName VARCHAR(50),
    aptRentMin INTEGER,
    aptRentMax INTEGER,
    aptDepositFee INTEGER,
    aptAreaMin INTEGER,
    aptAreaMax INTEGER,
    aptBedMin INTEGER,
    aptBedMax INTEGER,
    aptBathMin INTEGER,
    aptBathMax INTEGER,
    aptTennantMin INTEGER,
    aptTennantMax INTEGER,
    lctId CHAR(6) NOT NULL,
    ownId CHAR(3) NOT NULL,
    CONSTRAINT pk_Apartment_aptId PRIMARY KEY(aptId),
    CONSTRAINT fk_Apartment_lctId FOREIGN KEY (lctId) REFERENCES [SMC.Location]
(lctId)
        ON DELETE CASCADE ON UPDATE CASCADE,
    CONSTRAINT fk_Apartment_ownId FOREIGN KEY (ownId) REFERENCES [SMC.Owner]
(ownId)
        ON DELETE CASCADE ON UPDATE CASCADE )
```

```
INSERT INTO [SMC.Apartment] VALUES
('GH','Graduate Hills',1251,1742,0,500,1410,0,2,1,1,1,2,'lct001','SMC'),
('TR','Terrapin Row',1849,5500,2,493,1820,0,4,1,4,1,4,'lct002','BSL'),
('PS','Parkside',1699,2530,0,700,1000,1,2,1,2,1,4,'lct003','LPA'),
('VS','The varsity',1789,4876,2,497,1584,1,4,1,4,1,4,'lct004','GSR'),
('UC','University Club',1379,2198,2,540,960,0,2,1,1,1,2,'lct005','UCM'),
('AL','The Alloy',2960,3210,2,517,1259,1,3,1,2,1,3,'lct006','ETT'),
('LM','The Landmark',1689,2718,2,364,1370,0,4,1,4,1,4,'lct007','CGM'),
('DM','Domain',1508,3151,2,625,1300,1,2,1,2,1,2,'lct008','UDR'),
('UV','University View',1809,4796,2,509,1304,0,4,1,4,1,4,'lct009','TSG'),
('MG','Mazza GrandMarc Apartments',1670,3560,2,554,1446,1,4,1,4,1,4,'lct010','CAM')
```

```
CREATE TABLE [SMC.Customer](
    ctmId CHAR(6) NOT NULL,
    ctmName VARCHAR(50),
    CONSTRAINT pk_Customer_ctmId PRIMARY KEY(ctmId) )
```

```
INSERT INTO [SMC.Customer] VALUES
('CTM001','john giel'),
('CTM002','Esteban Arguedas'),
('CTM003','Shira Panitch'),
('CTM004','Jenna'),
('CTM005','Kate Jeffery'),
('CTM006','Yang Jiao'),
('CTM007','Anousheh Gholami'),
('CTM008','Mahshid Noorani'),
('CTM009','Rohan Mishra'),
('CTM010','anonymous'),
('CTM011','anonymous'),
('CTM012','peixinli'),
('CTM013','Ghazal_A'),
('CTM014','Jeb_J'),
('CTM015','anonymous'),
```

('CTM016', 'anonymous'),  
('CTM017', 'anonymous'),  
('CTM018', 'anonymous'),  
('CTM019', 'anonymous'),  
('CTM020', 'John Ball'),  
('CTM021', 'Jim Dasher'),  
('CTM022', 'Brian Krammer'),  
('CTM023', 'Timothy Wolfe'),  
('CTM024', 'anonymous'),  
('CTM025', 'Sabah V'),  
('CTM026', 'Taylor1405'),  
('CTM027', 'anonymous'),  
('CTM028', 'anonymous'),  
('CTM029', 'Feri'),  
('CTM030', 'Izabelle Cummings'),  
('CTM031', 'Shravan C'),  
('CTM032', 'Shubham Sonawane'),  
('CTM033', 'anonymous'),  
('CTM034', 'anonymous'),  
('CTM035', 'Brayden\_S'),  
('CTM036', 'anonymous'),  
('CTM037', 'anonymous'),  
('CTM038', 'Laurie Shea'),  
('CTM039', 'Ram Gupta'),  
('CTM040', 'Sylvia Pinto'),  
('CTM041', 'Robert Meloni'),  
('CTM042', 'walker1336'),  
('CTM043', 'anonymous'),  
('CTM044', 'anonymous'),  
('CTM045', 'anonymous'),  
('CTM046', 'anonymous'),  
('CTM047', 'anonymous'),  
('CTM048', 'Karen Oliver'),  
('CTM049', 'Jane Wang'),  
('CTM050', 'Jessica Muroff'),  
('CTM051', 'Tochi U'),  
('CTM052', 'Keshia Squire'),  
('CTM053', 'anonymous'),  
('CTM054', 'anonymous'),  
('CTM055', 'anonymous'),  
('CTM056', 'Verified Resident 618591'),  
('CTM057', 'anonymous'),  
('CTM058', 'Yessenia Mejia'),  
('CTM059', 'SammieJ Music'),  
('CTM060', 'Annie Barnes'),  
('CTM061', 'Juhi P'),  
('CTM062', 'Nick Henry'),  
('CTM063', 'Tri Hoang'),  
('CTM064', 'anonymous'),  
('CTM065', 'anonymous'),  
('CTM066', 'anonymous'),  
('CTM067', 'nicknackpatty'),  
('CTM068', 'anonymous'),  
('CTM069', 'Ian Ladenheim'),  
('CTM070', 'Yessica Paulino'),  
('CTM071', 'Juhi P'),  
('CTM072', 'Tri Hoang'),  
('CTM073', 'Antonio caraway'),  
('CTM074', 'Nick Henry (BIGNickHenry)'),

('CTM075', 'Kiersten Bouldin (Kiersten Lynn)'),  
('CTM076', 'Scott Qian'),  
('CTM077', 'Nat C'),  
('CTM078', 'Liu Jiayu'),  
('CTM079', 'Jonathan Chen'),  
('CTM080', 'Yongle Zhang'),  
('CTM081', 'Casey Whitley'),  
('CTM082', 'Rashelle J'),  
('CTM083', 'Simon Whottle'),  
('CTM084', 'Phoenix Langdon'),  
('CTM085', 'Krishan Panduwawala'),  
('CTM086', 'Lajon Pryor'),  
('CTM087', 'Chuka Jenkins'),  
('CTM088', 'Michael'),  
('CTM089', 'Tabriz Bumpas'),  
('CTM090', 'Joe'),  
('CTM091', 'Darlene D'),  
('CTM092', 'Shree Patel'),  
('CTM093', 'Devon B'),  
('CTM094', 'Jacob Wright'),  
('CTM095', 'Rachel Salem'),  
('CTM096', 'Hailey Chaikin'),  
('CTM097', 'Ryan Gabriel'),  
('CTM098', 'Micah Buckman'),  
('CTM099', 'Eva Moore'),  
('CTM100', 'Ashley C'),  
('CTM101', 'Grace Madover'),  
('CTM102', 'Calvin Burns'),  
('CTM103', 'Maddie D'Amico'),  
('CTM104', 'Frank Profaci'),  
('CTM105', 'Samantha Wions'),  
('CTM106', 'Madi Donahue'),  
('CTM107', 'Jillian Abraham'),  
('CTM108', 'Jazmin Argueta'),  
('CTM109', 'Kerri Farrell'),  
('CTM110', 'Katherine Norris'),  
('CTM111', 'Caroline Fleetwood'),  
('CTM112', 'Yvonne Fernandez'),  
('CTM113', 'Abby Audlin'),  
('CTM114', 'Sarita Winter'),  
('CTM115', 'Mercedes Leazer'),  
('CTM116', 'Jess Rubin'),  
('CTM117', 'Melat Tefera'),  
('CTM118', 'Jake Monteh'),  
('CTM119', 'Alice Jin'),  
('CTM120', 'john giel'),  
('CTM121', 'Zeke Sandor'),  
('CTM122', 'Kasey Donaldson'),  
('CTM123', 'John Giel'),  
('CTM124', 'Esteban Arguedas'),  
('CTM125', 'Philip Alipio'),  
('CTM126', 'Luan Tran'),  
('CTM127', 'Shyam Ardeshta'),  
('CTM128', 'Grayson Brown'),  
('CTM129', 'Tori Mccullough'),  
('CTM130', 'Yingbang Huang'),  
('CTM131', 'Kavon Badie'),  
('CTM132', 'Jenna'),  
('CTM133', 'Ivan K'),

('CTM134','steven xu'),  
('CTM135','Alex Kalter'),  
('CTM136','Melanie McKibbin'),  
('CTM137','samarth patel'),  
('CTM138','Jacob Keeler (Jake)'),  
('CTM139','noura'),  
('CTM140','Stephanie Ratajczak'),  
('CTM141','Navee Sidhu'),  
('CTM142','Bernadette Uy'),  
('CTM143','Cherish Dargan'),  
('CTM144','Cherish Dargan'),  
('CTM145','Miro Jangi'),  
('CTM146','Steve'),  
('CTM147','Jimmy Zheng'),  
('CTM148','Kim DeCoste'),  
('CTM149','Mohamed Beshir'),  
('CTM150','Nick Vafa'),  
('CTM151','Dominic Colarusso'),  
('CTM152','Nab Nep'),  
('CTM153','Titi Keira'),  
('CTM154','Bradley Myers'),  
('CTM155','Jerry Murphy'),  
('CTM156','Huayu Zhang'),  
('CTM157','Aaron Lancaster'),  
('CTM158','Hamzah Yousuf'),  
('CTM159','ryan Sulkowski'),  
('CTM160','Jenna Mehls'),  
('CTM161','Meghan Patel'),  
('CTM162','Ami Patel'),  
('CTM163','Conor Fagan'),  
('CTM164','Ian McGinnis'),  
('CTM165','Devon Reed-Rivera'),  
('CTM166','nadrat amos'),  
('CTM167','James C. Smith'),  
('CTM168','Tiffany Akotia'),  
('CTM169','DJ Jones'),  
('CTM170','JUDAH'),  
('CTM171','Toni E'),  
('CTM172','Toni Eboda'),  
('CTM173','Almosse Titi'),  
('CTM174','Adewonuola Ajibade'),  
('CTM175','anik tarafder'),  
('CTM176','Jacob DesRoches'),  
('CTM177','Grace M'),  
('CTM178','Arnold Constant'),  
('CTM179','Laura Kuperman'),  
('CTM180','Andrea Benedetti'),  
('CTM181','Leon Mukumadi'),  
('CTM182','Jessi Holmes'),  
('CTM183','Otto'),  
('CTM184','Baixue Chen'),  
('CTM185','John Yi'),  
('CTM186','Andy Chen'),  
('CTM187','Nora Chinwe'),  
('CTM188','Pam Leonard'),  
('CTM189','LIUYANG WANG')

```
CREATE TABLE [SMC.DataSource](
    webId CHAR(4) NOT NULL,
    webName VARCHAR(50),
    CONSTRAINT pk_DataSource_webId PRIMARY KEY(webId) )
```

```
INSERT INTO [SMC.DataSource] VALUES
('GGRV','Google Review'),
('APTC','Apartments.com'),
('APTR','ApartmentRatings.com')
```

```
CREATE TABLE [SMC.Review](
    aptId CHAR (2) NOT NULL,
    ctmId CHAR (6) NOT NULL,
    webId CHAR (4) NOT NULL,
    ratingId CHAR (5) NOT NULL,
    rating DECIMAL(5, 2),
    CONSTRAINT pk_Review_ratingId PRIMARY KEY(ratingId),
    CONSTRAINT fk_Review_aptId FOREIGN KEY (aptId) REFERENCES [SMC.Apartment]
(aptId)
        ON DELETE CASCADE ON UPDATE CASCADE,
    CONSTRAINT fk_Review_ctmId FOREIGN KEY (ctmId) REFERENCES [SMC.Customer]
(ctmId)
        ON DELETE CASCADE ON UPDATE CASCADE,
    CONSTRAINT fk_Review_webId FOREIGN KEY (webId) REFERENCES [SMC.DataSource]
(webId)
        ON DELETE CASCADE ON UPDATE CASCADE)
```

```
INSERT INTO [SMC.Review] VALUES
('DM','CTM001','GGRV','R0001',1),
('DM','CTM002','GGRV','R0002',5),
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('MG', 'CTM165', 'GGRV', 'R0222', 5),
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('MG', 'CTM179', 'APTC', 'R0246', 1),
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('MG', 'CTM184', 'APTC', 'R0251', 1),
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('MG', 'CTM186', 'APTR', 'R0253', 1),
('MG', 'CTM187', 'APTR', 'R0254', 1),
('MG', 'CTM188', 'APTR', 'R0255', 1),
('MG', 'CTM189', 'APTR', 'R0256', 1)

```

```

CREATE TABLE [SMC.Provide](
    ctmId CHAR(6) NOT NULL,
    aptId CHAR(2) NOT NULL,
    srvLaundry INT,
    srvWifi INT,
    srvHeatCool INT,
    srvOffice INT,
    srvMaintenance INT,
    srvPest INT,
    srvPet INT,
    CONSTRAINT pk_Provide_aptId_ctmId PRIMARY KEY(aptId, ctmId),
    CONSTRAINT fk_Provide_aptId FOREIGN KEY (aptId) REFERENCES [SMC.Apartment]
(aptId)
        ON DELETE CASCADE ON UPDATE CASCADE,
    CONSTRAINT fk_Provide_ctmId FOREIGN KEY (ctmId) REFERENCES [SMC.Customer]
(ctmId)

```

ON DELETE CASCADE ON UPDATE CASCADE)

INSERT INTO [SMC.Provide] VALUES

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( 'CTM188', 'MG', 1, 1, 0, 0, 0, 1, 1),
( 'CTM189', 'MG', 0, 1, 1, 0, 0, 1, 1)
```

```
CREATE TABLE [SMC.Amenities](
aptId CHAR (2) NOT NULL,
srvAmenity VARCHAR(50),
CONSTRAINT fk_Amenities_aptId FOREIGN KEY (aptId) REFERENCES [SMC.Apartment]
(aptId)
ON DELETE CASCADE ON UPDATE CASCADE )
```

```
INSERT INTO [SMC.Amenities] VALUES
('GH', 'Social courtyard'),
('TR', 'Pool'),
('TR', 'Gym'),
('TR', 'Study room'),
('TR', 'Social courtyard'),
('TR', 'Business center and conference rooms'),
('PS', 'Gym'),
('VS', 'Business center and conference rooms'),
('VS', 'Gym'),
('VS', 'Study room'),
('VS', 'Social courtyard'),
('VS', 'Entertainment Lounge'),
('UC', 'Gym'),
('UC', 'Study room'),
('UC', 'Business center and conference rooms'),
('AL', 'Business center and conference rooms'),
('AL', 'Pool'),
('AL', 'Gym'),
('AL', 'Study room'),
('AL', 'Social courtyard'),
('AL', 'Entertainment Lounge'),
('AL', 'ATM'),
('AL', 'Dog Park and pet amenities'),
('AL', 'Car charging station'),
('AL', 'Pet Spa'),
('AL', 'Outdoor TV'),
('LM', 'Coffee Shop'),
('LM', 'Gym'),
('LM', 'Study room'),
('LM', 'Social courtyard'),
('LM', 'Entertainment Lounge'),
('LM', 'ATM'),
('DM', 'Business center and conference rooms'),
('DM', 'Pool'),
```

```

('DM','Gym'),
('DM','Study room'),
('DM','Social courtyard'),
('DM','Entertainment Lounge'),
('DM','ATM'),
('DM','Car charging station'),
('UV','Gym'),
('UV','Study room'),
('UV','Entertainment Lounge'),
('MG','Pool'),
('MG','Gym'),
('MG','Social courtyard')

```

-- 1. What is the difference in the minimum and maximum rents of each apartment to the average minimum  
-- and maximum of all the listed apartments with the number of amenities they offer and their average review?

```

CREATE VIEW [RentMinMax] AS
    SELECT AVG(a.aprRentMin) AS 'AvgRentMin', AVG(a.aprRentMax) AS 'AvgRentMax'
    FROM [SMC.Apartment] a

```

```

SELECT a.aprName,
    a.aprRentMin,
    (a.aprRentMin - (
        SELECT b.AvgRentMin
        FROM [RentMinMax] b ) ) AS 'Difference in Minimum Rent',
    a.aprRentMax,
    (a.aprRentMax - (
        SELECT b.AvgRentMax
        FROM [RentMinMax] b ) ) AS 'Difference in Maximum Rent',
    COUNT(DISTINCT m.srvAmenity) AS 'Number of Amenities',
    AVG(r.rating) as 'Average Rating'
FROM [SMC.Apartment] a JOIN [SMC.Amenities] m
    ON a.aprId = m.aprId
    JOIN [SMC.Review] r
    ON a.aprId = r.aprId
GROUP BY a.aprId, a.aprName, a.aprRentMin, a.aprRentMax

```

-- 2. Which apartment has an average distance of no more than 1 mile to different landmarks in College Park  
-- and has a minimum average rating of 3? List the average distance and the average rating of each apartment

```

SELECT a.aprName, c1.avgrd AS 'Average Distance', c2.avgr AS 'Average Rating'
FROM [SMC.Apartment] a,
    (SELECT l.lctId, (l.lctDistBus+l.lctDistGrocery+l.lctDistMetro+l.lctDistUMD)/4
    AS avgrd
    FROM [SMC.Location] l
    WHERE (l.lctDistBus+l.lctDistGrocery+l.lctDistMetro+l.lctDistUMD)/4 <= 1) c1,
    (SELECT r.aprId, AVG(r.rating) as avgr
    FROM [SMC.Review] r
    GROUP BY r.aprId
    HAVING AVG(r.rating)>=3) c2
WHERE a.lctId = c1.lctId
    AND a.aprId = c2.aprId

```

-- 3. Which is the highest-rated and lowest-rated apartment in College Park  
-- that has a rent of less than \$1000, has a gym center?

```

CREATE VIEW [RatingMinMax] AS
    SELECT a.aprName, AVG(r.rating) AS 'AvgRating'

```

```

FROM [SMC.Apartment] a JOIN [SMC.Review] r
    ON a.apptId = r.apptId
GROUP BY a.apptId, a.apptName, a.apptRentMax, a.apptTennantMax, a.apptRentMin,
a.apptTennantMin, a.lctId
HAVING (a.apptRentMax/a.apptTennantMax)<1000 OR
(a.apptRentMin/a.apptTennantMin)<1000
    AND a.apptId IN (
        SELECT m.apptId
        FROM [SMC.Amenities] m
        WHERE m.srvAmenity='Gym')

```

```

SELECT m.apptName, m.[AvgRating]
FROM [RatingMinMax] m
WHERE m.[AvgRating] = (
    SELECT MAX(m.[AvgRating])
    FROM [RatingMinMax] m )
OR m.[AvgRating] = (
    SELECT MIN(m.[AvgRating])
    FROM [RatingMinMax] m )
GROUP BY m.apptName, m.[AvgRating]
ORDER BY m.[AvgRating] DESC

```

```

-- 4. Which data source performs the best for data collection
-- based on the closest information to the average reviews for each apartment?
SELECT m.webName, STDEV(m.[Rating]) as 'Standard Deviation'
FROM (
    SELECT s.webName, a.apptName, r.rating
    FROM [SMC.Review] r JOIN [SMC.DataSource] s
        ON r.webId = s.webId
        JOIN [SMC.Apartment] a
        ON r.apptId = a.apptId ) m
GROUP BY m.webName

```