UMBRELLA

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2018/12/6

Contents

Background

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Database Design

Application

Topic: Rental houses and leasing communities around the University

Brand: UMDWELL

Background

- User
- Data Sources

UMDwell Users:

Renters:

Students in UMD-CP

Owners:

Apartment Communities,

House owners

Data & Sources

1000+
Real Estate Data
From
8 Apartment
Communitites

1. www.apartments.com

2. www.yelp.com

3.www.verdegreenbelt.com

4. live-theview.com

5. www.terrapinrow.com

6. www.westchestertower.com

7. www.landmarkcollegepark.com

8. www.udr.com/washington-dc-apartments/college-park/domain-college-park

9. ross-companies.com/properties/seven-springs-apartments-college-park

10. www.americancampus.com/student-apartments/md/college-park/the-varsity

Real Data:

Community Name,
Community Amenity,
Community Address,
Floor Plan Type,
Floor Plan Price,
Floor Plan Area,
…

Make UP Data:

Apartment Units Number,
Available Date,
Lease info,
Password,
…

Data & Sources

1000+ Real Estate Data From 8 Apartment Communitites

1. **www.apartments.com**
2. **www.yelp.com**
3. **www.verdegreenbelt.com**
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Real Data:

- Community Name,
- Community Amenity,
- Community Address,
- Floor Plan Type,
- Floor Plan Price,
- Floor Plan Area,
- …

Make UP Data:

- Apartment Units Number,
- Available Date,
- Lease info,
- Password,
- …

Introduction

- Mission Statement
- Mission Objectives

Mission Statement

Our mission is to provide and develop quality affordable leasing opportunities for students in UMD.

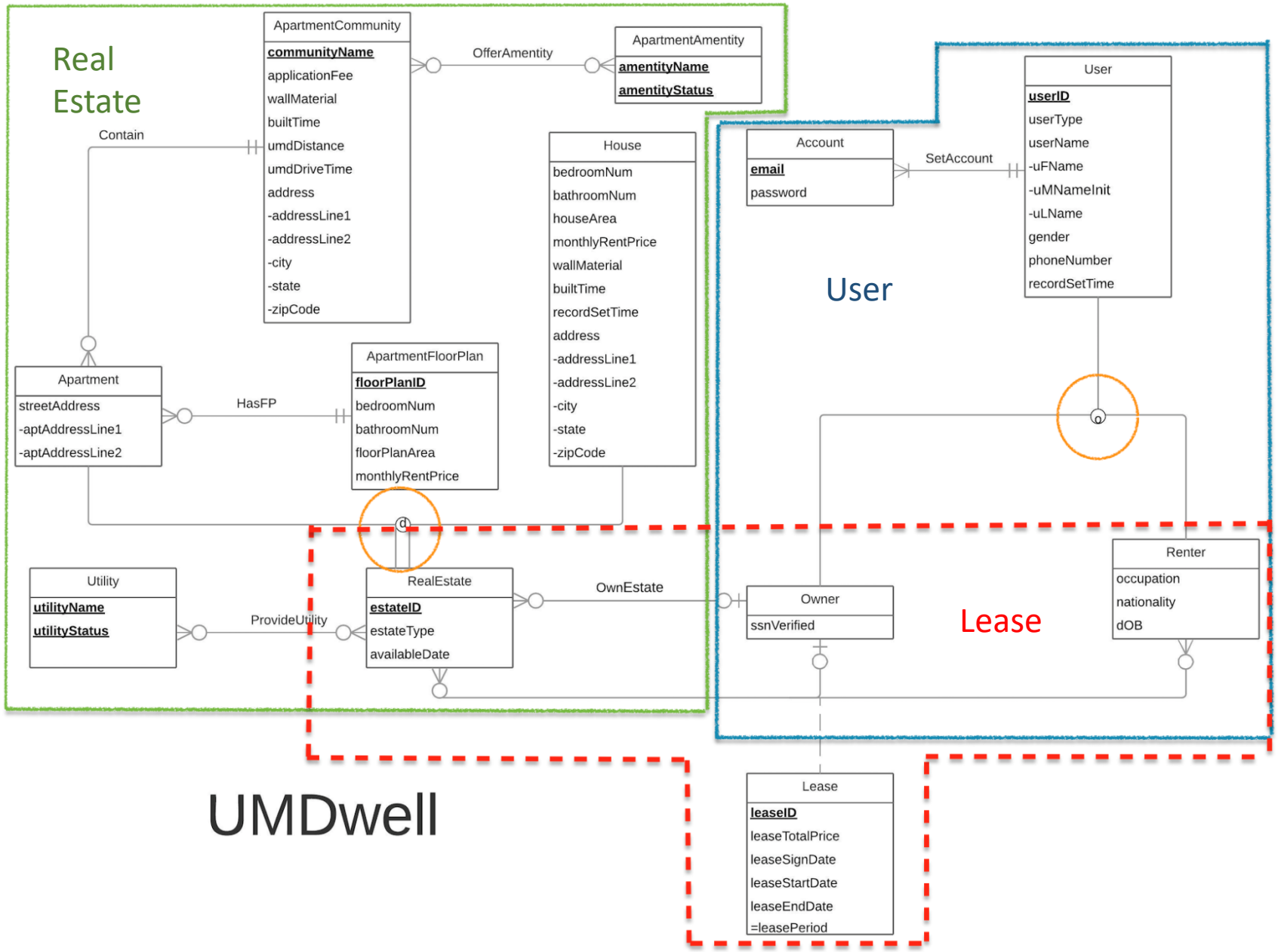
Main Objectives

- Renters(students) can find comparable renting house and leasing communities' information in our database through the website.
- Our users can register and log in our website to sign leases and records.

Database Design

- Conceptual Database Design
- Logical Database Design
- Physical Database Design

Conceptual Database Design



Logical Database Design

----User----

User(**userID**, userType, gender, uFName, uMNameInit, uLName, phoneNumber, recordSetTime)

Owner (***ownerID***,ssnVerified)

Renter (***renterID***, occuptation, nationality, dOB)

----Account----

Account(**email**, password, *userID*)

----Real Estate----

RealEstate(**estateID**, estateType, availableDate, *ownerID*)

House(***houseID***, addressLine1, addressLine2, city, state, zipCode, bedroomNum, bathroomNum, houseArea, monthlyRentPrice, wallMaterial, builtTime, recordSetTime)

Apartment(***aptID***, addressLine1, addressLine2, *communityName*, *floorPlanID*)

----ApartmentCommunity----

ApartmentCommunity(**communityName**, addressLine1, addressLine2, city, state, zipCode wallMaterial, builtTime, applicationFee, wallMaterial, builtTime, umdDistance, umdDriveTime)

ApartmentFloorPlan (**floorPlanID**, bedroomNum, bathroomNum, floorPlanArea, monthlyRentPrice)

----Utility&Amenity----

ApartmentAmenity (**amenityName**, **amenityStatus**)

OfferAmenity(***communityName***,***amenityName***,***amenityStatus***)

Utility(**utilityName**, **utilityStatus**)

ProvideUtility(***estateID***, ***utilityName***,***utilityStatus***)

----Lease----

Lease(**leaseID**, leaseTotalPrice, leaseSignDate, leaseStartDate, leaseEndDate, *estateID, mainRenterID, ownerID*)

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Physical Database Design

- **Create Table**

```
CREATE TABLE [UMDwell.RealEstate_T] (
        estateID CHAR (9) NOT NULL,
        estateType CHAR(1) NOT NULL
            CHECK (estateType IN ('A', 'H')),
        ownerID CHAR (9),
        availableDate DATE DEFAULT CURRENT_TIMESTAMP,
        CONSTRAINT pk_RealEstate_estateID PRIMARY KEY (estateID),
        CONSTRAINT fk_RealEstate_ownerID FOREIGN KEY (ownerID)
            REFERENCES [UMDwell.Owner_T](ownerID)
            ON DELETE NO ACTION ON UPDATE NO ACTION,
        );
```

Application

Two Cases

Case1:

What are average monthly rent prices under $1,000 for each floor plan in each apartment community ?

```
SELECT
        c.communityName,bedroomNum,bathroomNum,
        convert(int,AVG(monthlyRentPrice/bedroomNum))
        AS 'Average Rent Price'
FROM
[UMDwell.Apartment_T]a,[UMDwell.ApartmentFloorPlan_T]f,
[UMDwell.ApartmentCommunity_T] c
WHERE
        a.floorPlanID=f.floorPlanID AND
        c.communityName = a.communityName
GROUP BY c.communityName, bedroomNum, bathroomNum
HAVING AVG(monthlyRentPrice/bedroomNum)< 1000
ORDER BY c.communityName, bedroomNum, bathroomNum;
```

	communityName	bedroomNum	bathroomNum	Average Rent Price
1	Seven Springs Apartments	2	1.0	845
2	Seven Springs Apartments	2	2.0	877
3	Seven Springs Apartments	3	1.5	745
4	Seven Springs Apartments	3	2.0	718
5	Terrapin Row	4	2.0	946
6	The Varsity	4	3.0	899
7	University View	4	2.0	977
8	University View	4	4.0	974
9	Westchester Tower Apartment Homes	2	2.0	746
10	Westchester Tower Apartment Homes	3	2.0	625

Case1:

What are average monthly rent prices under $1,000 for each floor plan in each apartment?

Average Monthly Rent Price Distribution

Bed..	Bath..	Westchester Tower Apartm..	University View	The Varsity	Terrapin Row	Seven Springs Apartments
2	1					845
	2	747				878
3	1.5					746
	2	626				719
4	2		977		947	
	3			899		
	4		974			

Avg. Rent Price Per Bed
626 1,000

Community Name
(Multiple values)

Avg. Rent Price Per Bed
626 977

Highlight Community Na..
Highlight Community N...

Average Monthly Rent Price Distribution

Bed..	Bath..	The Varsity	Terrapin Row	Westchester Tower Apartm..	Verde at Greenbelt Sta..	University View	Seven Springs Apartments	Landmark College Park	Domain
1	1	1,690	1,789	1,308	1,753	1,659	1,458	1,841	2,057
2	1						845		
	2	1,395	1,417	747	1,043	1,125	878	1,476	
3	1.5						746		
	2			626			719		
	3	1,159	1,139						
4	2		947			977		1,176	
	3	899							
	4	1,038	1,112			974		1,279	

Avg. Rent Price Per Bed
626 2,057

Community Name
(Multiple values)

Avg. Rent Price Per Bed
626 2,057

Highlight Community Na..
Highlight Community N...

Case2:

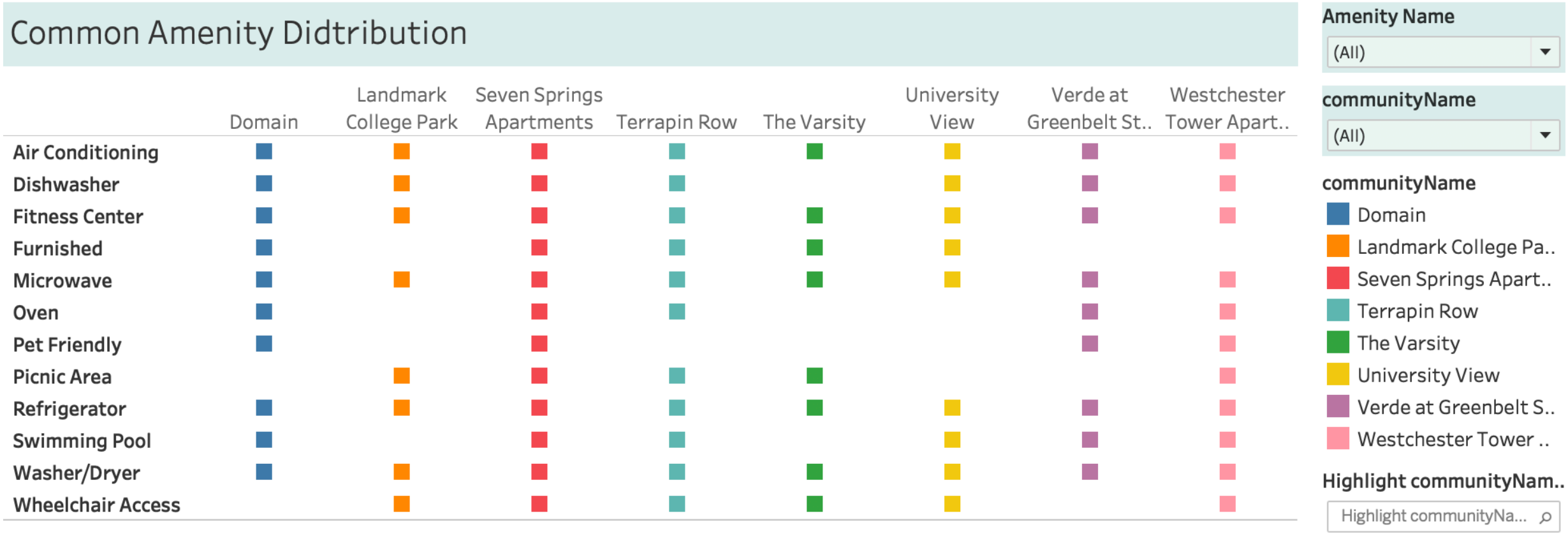
What amenities does each apartment community offer ?

```
SELECT c.communityName,m.amenityName
FROM [UMDwell.Apartment_T] c,
[UMDwell.ApartmentAmenity_T] m,
[UMDwell.offerAmenity_T] o
WHERE o.communityName=c.communityName
AND o.amenityName=m.amenityName
AND m.amenityStatus=o.amenityStatus
AND m.amenityStatus='yes'
GROUP BY c.communityName,m.amenityName
ORDER BY c.communityName,m.amenityName;
```

	communityName	amenityName
1	Domain	Air Conditioning
2	Domain	Dishwasher
3	Domain	Fitness Center
4	Domain	Furnished
5	Domain	Microwave
6	Domain	Oven
7	Domain	Pet Friendly
8	Domain	Refrigerator
9	Domain	Swimming Pool
10	Domain	Washer/Dryer
11	Landmark College Park	Air Conditioning
12	Landmark College Park	Dishwasher
13	Landmark College Park	Fitness Center
14	Landmark College Park	Microwave
15	Landmark College Park	Picnic Area
16	Landmark College Park	Refrigerator
17	Landmark College Park	Washer/Dryer
18	Landmark College Park	Wheelchair A...
19	Seven Springs Apart...	Air Conditioning
20	Seven Springs Apart...	Dishwasher

Case2:

What amenities do different apartment communities offer ?



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Application

UMDwell Website

Back-end Information:

- Server: Apache Tomcat 8.5.9
- Database: mssqllab.rhsmith.umd.edu,9758
- Major Techniques: session; cookies; servlet
  Java Database ConenectionPool(JDBC)

Informational Function:

- Have an overall view from different apartment communities, such as Communities' built time, amenities, and easy access to compare floor plans' price, areas, availability.

Operational Function:

- We are able to record and update user's information to the database.
- Such as Register, Login, Change password.

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THANKS