OFF-CAMPUS APARTEMENT RECOMMENDER

Domain: Recommendation based software.

Codename: the_alchemist

Campus housing in almost every university is often more costly than housing options available off-campus. Moreover, many international students prefer off-campus housing to have the benefit of having a kitchen to cook more traditional food as many find the campus housing food difficult to eat on a daily basis having coming in from a different culture in terms of cuisine.

My project is a minimalistic approach to a recommendation-based software which would work alongside the user and handle fuzzy input from the user. It asks the user about the kind of apartment wanted, and helps by giving some suggestions in order to find an apartment with the most matching details.

FEATURES:

The features of the system include a user-interactive questionnaire which asks the user questions about the type of apartment that is desired. The inputs are ranged from a variety of questions like the expected size of apartment, budget, distance from college, etc.

The primary structure of questions are questions accepting fuzzy inputs like "Somewhat, more or less, etc." response from the user. Each suggestion is based on replies by the user to the questionnaire. Multiple options on every question leads to a system with different paths every time based on the execution from the user.

A prototypical database has multiple lists of apartments providing their details along with address and URL links. A particular apartment is selected when it matches a predefined set of rules which are fired based on the inputs from the user.

RULES AND DESCRIPTION:

Line 118: initialize – This is the first rule that is fired in the system. The rule will be fired regardless of any case as there is no preceding rule to this one.
Line 191: ask – This rule asks whether the user variety of questions for query generation.
Line 204: welcomeMessage – This rule provides a brief introduction to user and explains the input required to the system.
Line 216: collegeAptDistance – This rules ask for the expected distance of the apartment from the college.
Line 221: budgetOfRent – This rules ask for the expected rent of the apartment.

Line 226: numOfRoommates – This rule asks the user about how comfortable he/she is with sharing an apartment.
Line 231: aptSize – This rule asks if the user about how big the apartment should be.
Line 236: carCommuteProbability – This rule asks if it user has a car for daily commute.
Line 575: getAllResults – Prints information about all the matching apartments from the database.

List of apartments from the database, some of which are fired based on the inputs of the user.

Line 244: Apt1	Line 264: Apt2	Line 284: Apt3	Line 304: Apt4
Line 345: Apt6	Line 365: Apt7	Line 385: Apt8	Line 405: Apt9
Line 425: Apt10	Line 445: Apt11	Line 465: Apt12	Line 485: Apt13
Line 505: Apt14	Line 525: Apt15	Line 545: Apt16	

USAGE MANUAL:

1. Unzip the package and extract the .clp file to be compiled.
2. You will be required to use the **FuzzyJ toolkit**, which can be found at http://rorchard.github.io/FuzzyJ/.
3. Create a new Java project in eclipse. Make sure you include the JAR file "fuzzyJ-2.0.jar" under New Project > Libraries.
4. In the run configurations of the file, change "jess.Main" to "nrc.fuzzy.jess.FuzzyMain". Run the project.
5. In case you run into any errors, make sure that the run configs is pointed to the FuzzyMain as by default it is usually shifted back to jess.Main.
6. When presented with multiple choices, reply exactly with numeric values or the question will reappear again.
7. You will see one or multiple apartments based on your input, or none in case of input for which the database could not find any apt response.

OUTPUT SAMPLES:

1.

```
---------Our system generated some apartments that you might like--------

Apartment Address : 500 S Clinton Street #542
Apartment Description :
                Neighbourhood : South Loop
                Distance from East Campus : 0.6 mile
                Size : 1,041 Sq Ft
                Bedrooms : 2
                Rent : $1,995
                Parking : Yes
                Public Transport: CTA Blue line in proximity
URL link : https://hotpads.com/500-s-clinton-st-chicago-il-60607-skasgn/542/pad?price=0-2200&beds=2

Apartment Address : 1116 W Polk St Unit 2
Apartment Description :
                Neighbourhood : University Village
                Size : 1,200 Sq Ft
                Distance from East Campus : 0.5 mile
                Bedrooms : 3
                Rent : $2000
                Parking : Yes
                Public Transport: CTA Bus and Blue line in proximity
URL link : https://www.apartments.com/1116-w-polk-st-chicago-il-unit-2/21lgyyc/
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2.

```
Apartment Address : 1819 S Ashland Ave #1
Apartment Description :
                Neighbourhood : Pilsen
                Distance from East Campus : 2.3 miles
                Size : -- Sq Ft
                Bedrooms : 2
                Rent : $1,300
                Parking : Yes
                Public Transport: CTA Bus and Blue line in proximity
URL link : https://www.trulia.com/p/il/chicago/1819-s-ashland-ave-1-chicago-il-60608--2337621772

Apartment Address : 1825 W 17th Street
Apartment Description :
                Neighbourhood : Heart of Chicago
                Distance from East Campus : 2.3 miles
                Size : 1,200 Sq Ft
                Bedrooms : 3
                Rent : $1,800
                Parking : --
                Public Transport: CTA Bus and Blue line in proximity
URL link : https://hotpads.com/1722-w-hastings-st-chicago-il-60608-sjzpcd/building?price=650-2900&beds=3-8plus
```

3.

```
---------Our system generated some apartments that you might like--------

Apartment Address : 1343 W Flournoy #2
Apartment Description :
                Neighbourhood : University Village
                Distance from East Campus : 1.3 miles
                Size : 1200 Sq Ft
                Bedrooms : 2
                Rent : $2,400
                Parking : Yes
                Public Transport: CTA Bus and Blue line in proximity
URL link : https://hotpads.com/1343-w-flournoy-st-chicago-il-60607-1mrzjvb/2/pad?price=2200-2900&beds=2
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4.

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Q.How big should your apartment be?
            1. Big and spacious
            2. Medium
            3. Small size would do
            Choose a number :  1
Q.How much can you afford to spend in rent? (Keep in mind that you would usually need about $250 for amenities)
            1. Very high
            2. High
            3. Normal
            4. Low
            5. Penurious
            Choose a number :  5
Q.How many roommates would you like to live with?
            1. I'm not really a roommate person. I cherish personal space at my place of residence.
            2. I don't mind a couple.
            3. Don't care about that. Plus, I know it will save me some rent money.
            Choose a number :  1
Q.How far can your apartment be from the college?
            1. Very Close .by
            2. A bit further
            3. Far away is fine
            Choose a number :  1
Q.Do you have a car to go use for daily commute?
            1. Yes, I plan to use it everyday
            2. No, CTA or Uber&Lyft it is / Yes, but I don't intend to use it everyday
            Choose a number :  2

---------Our system generated some apartments that you might like--------
Sorry, we couln't find anything that matched your requirements. Try some other values.
```

References:

- https://hotpads.com/
- https://www.apartments.com/
- https://www.trulia.com/
- https://www.zillow.com/