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| Project Design Report  SYRACUSE ONLINE HOUSING SERVICES |
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| Section II: PROJECT SUMMARY Most individuals consider safety as priority over cost of rent and amenities provided. . In Syracuse, the online housing websites provide only information such as price, amenities provided, number of bedrooms available and the location. Presently, there is no database in the housing industry where safety of a home is measured. Therefore, when a person rents a home, he is not sure how safe the area is. Syracuse Online Housing services acts as the mediator between: a) The Landlords who are looking to lease their owned property in Syracuse and b) The Tenants who are looking to rent property in Syracuse. It focuses on providing the Tenants home in a safe vicinity and also to provide Landlords more information about the Tenants looking for these properties on rent.    The general business functions of the system will be to maintain databases about the Landlords (Renter), the Tenants, the Properties, Location of the houses, Incidents reported within the vicinity, Landlord Feedback and Tenant Feedback. The organization will first validate the Tenants, Landlords and Property information by doing a background check on each manually. The Property will then be mapped to the informed location. A safety index will be assigned to the Property based on the crimes recorded in its vicinity. The safety index will help the tenants to take a rental house in a safe location in Syracuse. The safety index will be scaled from 1 to 10 with 10 considered as the safest. The System will then take feedback from tenants that reside in a house. The System will also take feedback from the Landlords about their previous Tenants. The System will also maintain information of the lease document between the Landlord and Tenants for their properties.  The Tenant can look for properties and its safety index and choose a property. He can also view the previous Tenant Feedbacks to know more about the property.  The Landlord can view the Tenants looking for their properties for rent and choose one among them by looking at their previous Landlord feedbacks. Both Tenant and Landlord can view their validity of lease using the Lease Document information.  Syracuse Online Housing Services thereby improves Tenant and Landlord satisfaction by targeting the safety of the property. Section III: TABLES AND ATTRIBUTES:  |  |  | | --- | --- | | **Data object:**  **OnlHousing\_Syracuse** | **This database contains all the tables and relations that together build the Online Housing System for Syracuse.** | | **1. Landlord** | **Stores information about the Landlord (Renter) who lease their properties which are in Syracuse.** | | Primary key: **LandlordRegistrationID** | One Landlord can be uniquely identified by its Registration ID. | | FirstName | First Name of the Landlord. | | LastName |  | | ContactNumber | Primary Contact Number to contact the Landlord. | | Lverified | A Boolean value which will be true if the Landlord is Verified. | | **2. Tenant** | **Stores information about the Tenants who rent a property in Syracuse** | | Primary key: **TenantRegistrationID** | One Tenant can be uniquely identified by its Registration ID. | | FirstName | First Name of the Tenant. | | LastName |  | | PersonalContactNumber | Primary Contact Number to contact the Tenant. | | Tverified | A Boolean value which will be true if the Landlord is Verified. | | [**TScore**] | It is the average rating (from a scale 1:5, with 5 as the best). It is derived from the Landlord feedback. | | **3. Property** | **Stores information about the properties available to rent in Syracuse.** | | Primary Key:  **PropertyID** | One Property can be uniquely identified by its Property ID. | | HouseNumber |  | | **[SafetyIndex]** | It is the index which tells how safe the property is. It is derived using the crime rate for its location. It is scaled from 1 to 10, with 10 as the safest. | | **[Rating]** | It is the average rating of the property. It is derived from Tenant Feedback. It is scaled from 1 to 5, with 5 as the best property. | | Pverified | A Boolean value which will be true if the Property is Verified. | | Cost | Cost to rent the complete property per month. (In Dollars) | | Foreign key:  **LandlordRegistrationID** | It is in relationship with the primary key of Landlord. The foreign key establishes one to many relationship, i.e. one Landlord can own zero or many Properties. One Property can be owned by only one Landlord. | |  |  | | Foreign key:  **LocationID** | It is in relationship with the primary key of Location. The foreign key establishes one to many relationship. i.e. One Location can have many properties. One Property can be present at only one Location. | | **4. Location** | **Stores information about all the locations in Syracuse.** | | Primary Key:  **LocationID** | One Location can be uniquely identified by its Location ID. | | StreetName |  | | CityName |  | | CountryName |  | | PostalCode |  | | **[CrimeRate]** | It is derived using the Crime attributes TheftNumber, WeaponCallNumber, SexOffenderNumber, AssaultNumber, TrafficViolationNumber. for its location. | | **5. CrimeStatistics** | **Stores information about the crime statistics for different locations in Syracuse.** | | Primary Key:  **StatisticsID** | Crime Statistics for a location can be uniquely identified by Statistics ID. | | TheftNumber | Total Number of thefts reported at the location | | WeaponCallNumber | Total Number of weapon calls reported at the location | | SexOffenderNumber | Total Number of sex offenders reported at the location | | AssaultNumber | Total Number of Assaults reported at the location | | TrafficViolationNumber | Total Number of traffic violations reported at the location | | Foreign key:  **LocationID** | It is in relationship with the primary key of Location. The foreign key establishes one to one relationship, i.e. One Location can have only one Crime Statistic. One Crime Statistic can be present for only one Location. | | **6. LeaseDocument** | **Stores information about all the Tenants renting a Property from a Landlord.** | | Primary Key:  **LeaseID** | A lease document for a particular property can be uniquely identified by Lease ID. | | LeaseStartDate |  | | LeaseEndDate |  | | Foreign key:  **LandlordRegistrationID** | It is in a relationship with the primary key of Landlord. The foreign key establishes one to many relationship, i.e. One Lease Document can be present for only one Landlord. One Landlord can have zero or many Lease Documents. | | Foreign key:  **TenantRegistrationID** | It is in a relationship with the primary key of Tenant. The foreign key establishes one to many relationship, i.e. One Lease Document can be present for only one Tenant. One Tenant can have zero or many Lease Documents. | | Foreign key:  **PropertyID** | It is in a relationship with the primary key of Property. The foreign key establishes one to many relationship, i.e. One Lease Document can be present for only one Property. One Property can have zero or many Lease Documents. | | **7. TenantFeedback** | **Stores feedback about the property from the Tenants.** | | Primary Key:  **TFeedbackID** | A tenant feedback can be uniquely identified by its Feedback ID. | | PropertyRating | Total Rating in the scale from 1 to 5, with 5 as the best. | | Comments | Stores any comments given by the tenant about the house. | | Foreign key:  **PropertyID** | It is in a relationship with the primary key of Property. The foreign key establishes one to many relationship, i.e. One Feedback can be given to only one Property. One Property can get zero or many feedbacks. | | Foreign key:  **TenantRegistrationID** | It is in a relationship with the primary key of Tenant. The foreign key establishes one to many relationship, i.e. One Feedback can be given by only one Tenant. One Tenant can give zero or many feedbacks. | | **8. LandlordFeedback** | **Stores feedback about the Tenants from the Landlords.** | | Primary Key:  **LFeedbackID** | A landlord feedback can be uniquely identified by its Feedback ID. | | TenantScore | Total Rating in the scale from 1 to 5, with 5 as the best. | | Comments | Stores any comments given by the Landlord about the Tenant. | | Foreign key:  **LandlordRegistrationID** | It is in a relationship with the primary key of Landlord. The foreign key establishes one to many relationship, i.e. One Feedback can be given by only one Landlord. One Landlord can give zero or many feedbacks. | | Foreign key:  **TenantRegistrationID** | It is in a relationship with the primary key of Tenant. The foreign key establishes one to many relationship, i.e. One Feedback can be given to only one Tenant. One Tenant can be given zero or many feedbacks. | |  |  |   **Section IV: Relational Data Model** |

Since all are Strong entities, Associations (Identifying and non-identifying relationships) do not exist.

# Section V: ADDITIONAL BUSINESS RULES

1. Only current year crime data will be available in CrimeStatistics.
2. Only verified Landlords will be allowed to lease a property.
3. Before signing a lease, the Tenant should be verified.
4. Only verified properties will be available on the online housing portal.
5. Only CrimeStatistics for the locations in Syracuse will be considered for calculating safety index.
6. TScore is scaled from 1 to 5, with 5 as the best score for a tenant.
7. SafetyIndex is scaled from 1 to 10, with 10 as the safest property.
8. PropertyRating is scaled from 1 to 5, with 5 as the best property.

Section VI: MAJOR DATA QUESTIONS

The different users of the system are as follows:

1. The Organization Administrator is responsible for keeping the system up to date.
2. The Landlord who rents his properties using the online system.
3. The Tenants who searches for a property.

Example of Data Question asked by Organization Administrator:

If the Crime Statistics in Syracuse has changed drastically within a year, then the Organization Administrator needs to update this information. The admin will update this information by comparing previous attributes values of the CrimeStatistics table and updating its values to the current for each location which has drastic changes.

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Example of Data Questions asked by Landlord:

If a Landlord wants to know more about a Tenant who wants to sign the lease then the Landlord can do the following:

1. Check the Tenants Profile.
2. By looking at the TScore of the Tenant, Landlord can determine whether the Tenant is good.
3. The Landlord can also look at the feedback comments from other landlords about the tenant. From this he can determine whether the Tenant is particular about paying the rent and also about his cleanliness habits.

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Example of Data Questions asked by Tenant:

If a Tenant wants to know which property vicinity is safe then he can do the following:

1. Go to the Property.
2. Check its safety index.
3. If the safety index is above 7 then the property vicinity.

CONSTRAINTS:

1. There are no constraints on the Organization Administrator, since he is responsible for updating and maintaining the database.
2. The Landlord can update their personal information and view/update their property information. He / She can only view all the information of the Tenant, not update it. He / She can only view all the information about lease document for its own property and cannot update it. He / She can only view all the information about the Landlord Feedbacks, not update them.
3. The Tenant can update their personal information. He / She can only view all the information of the Landlord, not update it. He / She can only view the information of the Properties, not update it. He / She can only view all the information of the Lease Document he has signed. He / She can only view all the information of the Tenant Feedback, not update it.

FUNCTIONS:

1. The Organization Administrators: His function is to maintain and update the database. He updates Crime Statistics information on timely basis and monitors the new Crime Rate for every location in Syracuse. He also verifies Tenants, Landlords and Properties.
2. The Landlord rents his property using the Syracuse Housing Online Services.
3. The Tenant looks for the property that the Landlords are renting and chooses the safest or the most convenient house for them. He / She also checks the lease document validity for the property he is residing in using the Lease Document information.