

HANO Housing Choice Connect

Software Requirement Specifications

HOUSING AUTHORITY OF NEW ORLEANS

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INTRODUCTION

1 Purpose

The purpose of HANO's Housing Choice Connect is to provide rental listings of Section 8 housing to voucher holders and landlords in the New Orleans area. Due to the fact that rental homes in New Orleans are not affordable for low income residents, individuals need the ability to easily access a database of landlords that accept Section 8 vouchers.

2 Document Conventions

This document is intended to act as a set of Requirements and Technical Design.

3 Intended Audience

The intended audience is HANO's Information Technology team.

4 Product Scope

The HANO Choice Connect is intended to replace the existing Java web application with a redesigned and redeveloped web application having the features detailed in this document. It provides the features and technical design of the web content management system (WCMS).

Section 8 Voucher holders are low-income residents that have limited access to technology, therefore may have a low aptitude for using computers. Therefore the application must be user-friendly, efficient and effective in servicing the holders. The WCMS services are for three end-users:

1. Voucher Holders referred to as Tenants
2. Section 8 Partners referred to as Landlords
3. HANO Administrators referred to as
 - a. Administrators

EXTERNAL WEBSITES FOR SECTION 8 LISTINGS

2 GoSection8

2.1 Website

<http://www.gosection8.com/>

2.2 Services

GoSection8 consists of two main services:

A. Listing Site

Listing Site is an online directory showcasing Section 8 housing located nationwide. Individuals can search for housing via city/state and zip code. Tenants and landlords have free access to view all Listings. The landlords can list houses, view prospects, and receive messages from potential tenants for free, however can pay \$33.00 per month (billed annually) or \$49.00 per month (billed monthly) for premium features.

B. Housing Authority

Housing Authority have access to two features:

1. Customized Housing Locator [free]

A designated link located on the Housing Authority website that redirects to a customized webpage with their brand header displaying the Section 8 housing inventory in the Housing Authority's jurisdiction

2. Rent Reasonableness [paid]

Database of Rent Comps populated daily

2.3 Pros

A. Tenants

Features	Usability
<ul style="list-style-type: none">✓ House Listings Displayed in List and Map Form✓ Detailed housing info including pictures, Property details (such as type of property, pets' permittance) Property description, Nearby places Street view, Who pays what (tenant vs owner), Accessibility features for handicap, and Additional details for Indoor, Kitchen, Outdoor, and Other✓ Save search filters✓ Favorite homes and landlords	<ul style="list-style-type: none">✓ Tenants login with email or phone number, don't need password✓ Contact form or toll free number if in need of contact<u>Note:</u> response within 24 hours✓ Easy Sign up form with email preferences

- ✓ Flag homes that are unavailable, duplicate/spam, or invalid phone number
- ✓ Contact form to message landlords
- ✓ Tenants can call and receive assistance setting up a profile

B. Landlords

Features

- ✓ Dashboard that displays inbox of interested tenants, prospects, and inactive and inactive listings
- ✓ Ability to compare rental prices
- ✓ Premium features (phone tracking, etc.)
- ✓ Expiration date for posting – 30 days unless have a premium account
- ✓ Post detailed housing information
- ✓ Can send Bulk email to prospects

Usability

- ✓ Landlords contact interested tenants by phone or email
- ✓ Dashboards permits spam email of interested tenants by having messages system

C. HANO

Features

- ✓ Customized Housing Locator

Info about Features

- ✓ A Directory of a jurisdictions

2.4 Cons

A. Tenants & Landlords

Features

- For assistance must contact GoSection8

B. HANO

Features

- Ads on the Customized Housing Locator page
- Do not have access to tenants and landlords information
- Importation to Database

The only info we can receive on the landlords and tenants is what we provide them for the Rent Reasonable feature. They will not provide any information on the tenants nor landlords that sign up to their site because registration is open to the public.

2.5 Test Login Credentials

Name	Type of Person	Email	Password
Jasmine Lewis	Landlord	jlewis@hano.org	Qwerty1
Issachar Nichols	Tenant	issacharnic@netscape.net	---

2.6 Notes

Sarah Reiss' email → reiss_sarah@yahoo.com

3 Section 8 Housing List

3.1 Website

<http://www.section8housinglist.info/>

3.2 Services

A. Section 8 Housing List Directory

Section 8 Housing List Directory lists the Section 8 homes in a specific jurisdiction.

3.3 Pros

Features

3.4 Cons

Features

- The listings of Section 8 houses are updated by admin only which is not daily → New Orleans lasted posted in 2009
- Section 8 house details only include landlord contact, property, type and number of bedrooms information. The list is a table that cannot be filtered.
- HANO nor landlords have any control over info posted

3.5 Notes

- No form of communication to contact administrator

4 Affordable Housing Offline

4.1 Website

<http://affordablehousingonline.com/>

4.2 Services

A. Section 8 and Public Housing Wait Lists

Section 8 and Public Housing Wait Lists describe the open/close status of Housing Authorities' wait lists and a list of Section 8/Public Housing properties featured in a specific jurisdiction.

4.3 Pros

Features

4.4 Cons

Features

- Tenants cannot search for houses nor does the site provide detailed info about the property
- Landlords cannot provide info or have a designated portal
- HANO does not have access to the Section 8/Public Housing Listings because Affordable Housing gets this info from other sites

4.5 Notes

- The only way to contact them is through email → info@apartmentsmart.com
- Sent email to learn more about affordable housing online services 3/8/16
 - Responded within 24 hours, however do not cater to any of our end-users needs

OVERALL DESCRIPTION

1 Product Perspective

The HANO Choice Connect consists of three portals:

1. Tenant
2. Landlord
3. Admin

2 Product Functions

2.1 Tenant

The tenant will be able to:

1. Register , login, view and manage personal information
2. Search rental listings based on search filters: zip code, neighborhood, bedroom, bathroom and max rent,

2.2 Landlord

The landlord will be able to:

1. Register, login, view and manage personal information
2. Create, view and manage property listings
 - a. Active : available properties for tenants
 - b. Inactive: unavailable properties for tenants to view
 - c. Proximity : properties within period of permanent deletion
3. Create, view and manage property information

2.3 HANO Admin

The Administrators will be able to:

Tenants

1. View tenants user information

Landlords

1. View and manage landlords rental listings and property information

Administrators

- 1.

3 Detailed Features

In this section, features are discussed in detailed of how each will function in relation to our users or overall purpose.

3.1 General

1. Automation

Admin ID Record will be the only ID generated by the system. It will contain 9 digits, the same as in the Elite software. Since landlords do not become a Section 8 partner

until a tenant is interested in their property, they will have a default ID Record of 0. Once a landlord becomes a partner, an admin will input their Elite number into the system.

2. Registration

When a user registers on the system, they must first select the type of user he/she is registering as: tenant or landlord. Once selected the user is redirected to the basic info registration page. Once registered an email is sent to their email for verification and if they passed verification, they must login and complete a list of security questions and finally the profile page.

Landlord

Any landlord is permitted to post their property on our site, however, once they become a Section 8 partner with an Elite number, an admin must input this number into our system.

To assist Users in case of Forgotten Security Answers and Password

Once an admin and landlord register, an email will be sent to them with their password, security questions and answers.

3. Login

Both admins and landlords will login with their email and password. For security purposes, an admin must answer a random set of their security questions correctly for access. A tenant only uses his/her email to login.

4. Forgotten Login Password

For forgotten login password, a landlord and admin will be able to click a link on the login page to receive an email with their forgotten password. To insure security, a landlord and admin must answer two of the security questions correctly before they receive an email. Since there are six total security questions once a user clicks on the forgotten password link only two of the six questions will appear to be answered.

5. Security Questions

Landlords and Admins must answer all six security questions. At any time a user can change their security questions' answers by first entering their current password. The responses are not case sensitive. The four security questions are the following:

- i. What is NOT the last name of your favorite teacher?
- ii. What is NOT one of your favorite holidays?
- iii. What city you were NOT born in?
- iv. What is NOT your favorite fruit?
- v. What is NOT your favorite color?
- vi. Who is NOT your favorite musical artist?

6. Email Verification

All admins, landlords and tenants must validate their email address once they have completed the basic user information. An email will be sent to them with a 6 digit code to verify their email, once enter correctly they will be redirected to the login screen to complete the registration process. A link to send a new email verification code will provide users the ability to receive a new code.

3.2 Tenant Portal

3.3 Landlord Portal

1. Property Post Expiration

- a. In the active listings, property postdate and the date after 1 year submission it will permanently deleted is displayed to the landlord. The landlord have until the 15th grace day after date of expiration to reactivate the posting. Once a landlord reactivate a property the date of reposting becomes the posted date. After the expiration date, the listing becomes inactive.



- b. In the inactive listings, the lease terms dictates on what day the property must be reactivated. A landlord can select to keep the property inactive. There are two ways for a property to become inactive:
 - a. Past expiration date
 - b. Landlord States it's occupied

CONCEPTUAL, LOGICAL, & PHYSICAL DESIGN

4 Conceptual, Logical, & Physical Design

This section entails the website flowchart, entity descriptions and relationships.

4.1 “Mini-World” Description

4.1.1 Entity Descriptions

I. USER

A USER is an individual that have privileges and an account within the HANO Choice Connect. The USER attributes consist of User ID (primary identifier), First Name, Middle Name, Last Name, Email, Password, Primary Phone Number, Primary Phone Number Type ID, Secondary Phone Number, Secondary Phone Number Type ID, Elite Entity ID, Contact Address, Address Apt Or Suite, Zip Code, City, State ID, User Type ID (foreign key of User Type table), Is Security Questions Completed, Is Email Verified, Is Disabled, Date Registered, and Last Login..

II. PROFLE

A PROFILE personal information for a user. The PROFILE attributes consist of Profile ID (primary identifier), User ID (foreign key of User table), Date Created, Date Updated, and Profile Type.

The PROFILE is a supertype that consists of one subtype: ADMIN PROFILE. The subtype is partial specialization and disjoint.

The ADMIN PROFILE attributes are Profile ID (primary identifier /foreign key of the Profile supertype) and Admin Type ID (foreign identifier of Admin Type table).

III. LANDLORD PROPERTY

The LANLORD PROPERTY is house owned by a landlord. The LANDLORD PROPERTY attributes are Landlord Profile ID (primary identifier), User ID

foreign key of the User table), Rent, Deposit, Description, Bedroom ID (foreign identifier of Numerical Value's table), Bath ID (foreign identifier of Bath Number's table), Property Type ID (foreign identifier of the Property Type's table), Unit Type ID (foreign identifier of the Unit Type's table), Address, Apt Or Suite, Neighborhood ID (foreign identifier of Neighborhood's table), Date Available To Rent, Utility Electric Paid By Landlord, Utility Water Paid By Landlord, Utility Gas Paid By Landlord, Is Amenities Included, Is Handicap Accessible, Is Property Ready For Occupancy, Is Pets Permitted, Pet Deposit, Is Picture Exists, Person Of Contact, Phone Number Of Person To Contact, Number Of Tenant Views, Is Active, Date Last Updated, Date Of Inactivation, Date Of Postage, Date Of Grace, and Date Of Expiration.

4.1.2 Business Rules for Entities

I. USER/ PROFILE

A USER must create one and only one PROFILE.

A PROFILE must be created by one and only one USER.

II. LANDLORD / LANDLORD PROPERTY

A LANDLORD may own many LANDLORD PROPERTYs.

A LANDLORD PROPERTY must be owned by one and only one LANDLORD.

4.1.3 Business Rules Specifications

I. Landlord property

Textboxes are disabled before entry..

■ Thresholds

○ Deposit

Deposit must be greater than \$0 but less than or equal to 2 months of the rent

○ Rent

Rent must be greater than \$0 but less than \$2000

■ Date Available to Rent

○ Date cannot be less than current date

■ Pets

- If the landlord permits pets, then pet deposit is permitted, greater than or equal to \$0 but less than rent
- Picture
 - Image has a default picture automatically
- Address
 - No duplicate address (validation)
 - Auto check that address and zip code match by using the map API
 - Only permitted to enter one address (NO '&', ',', '/', '\ ' symbols, ONLY one '.' is permitted in case a street is a number)
- Handicap Accessible
 - Must click Yes/No
 - If yes, must describe accessibility by filling out the Accessibility features

II. Landlord Account

When a landlord account has been inactive for more than one year, send an email to them notifying them that their account has been inactive and they need to log in.

4.2 Entity and Table Definitions and List of Attributes

4.2.1 Operational Tables

USER							
Type	Strong						
Identifier	UserID						
Attribute	Description	Data Type	Length	Allowable Default	Null Status	Sign Status	Data Constraint
UserID	Uniquely identifies the user	Integer	10		Not Null	Unsigned	Required
FirstName	User's first name	Varchar	50		Not Null		Required
MiddleName	User's middle name	Varchar	50		Not Null		Not Required
LastName	User's last name	Varchar	50		Not Null		Required
Email	User's email	Varchar	100		Not Null		Required
Password	User's password	Varchar	15		Not Null		Required
PrimaryPhoneNumber	User's primary phone number	Integer	10		Not Null		Required
PrimaryPhoneNumberTypeID	Classification of primary phone number	Integer	10		Null		Required
SecondaryPhoneNumber	User's secondary phone number	Integer	10		Null		Not Required
SecondaryPhoneNumberTypeID	Classification of Secondary phone number	Integer	10		Null		Not Required
ContactAddress	User's contact address	Varchar	50		Not Null		Required
AddressAptOrSuite	User's contact address apt or suite	Varchar	15		Null		Required
Zip Code	User's contact address zip code	Integer	10		Not Null		Required
City	User's contact address city	Varchar	50		Not Null		Required
StateID	ID of STATE table	Integer	10		Not Null		Required
EliteEntityID	Elite Record ID for tenant/landlord Landlord ID is same as UserID until EliteID is recieved Auto generated ID for admin	Integer	10		Not Null		Not Required
UserTypeID	ID of USER TYPE's table	Integer	10		Not Null	Unsigned	Required
IsSecurityQuestionsCompleted	Responses in USER SECURITY QUESTIONS table	Bit	1	0	Not Null		Required
IsEmailVerified	States if email is verified	Bit	1	0	Not Null		Required
IsDisabled	States if account is disabled	Bit	1	0	Not Null		Required
DateRegistered	User's initial registration	DateTime			Not Null		Required
LastLogin	User's last login	DateTime			Not Null		Not Required

PROFILE							
Type	Strong						
Identifier	ProfileID						
Attribute	Description	Data Type	Length	Allowable Default	Null Status	Sign Status	Data Constraint
ProfileID	Uniquely Identifies the profile	Integer	10		Not Null	Unsigned	Required
UserID	ID of USER table	Integer	10		Not Null	Unsigned	Required
DateCreated	Date profile was created	DateTime			Not Null		Required
DateUpdated	Date profile was created	DateTime			Null		Not Required
Profile Type	Subtype Discriminator ("A")	Varchar	1		Not Null		Required

ADMIN PROFILE							
Type	Strong						
Identifier	ProfileID						
Attribute	Description	Data Type	Length	Allowable Default	Null Status	Sign Status	Data Constraint
ProfileID	ID of PROFILE's table	Integer	10		Not Null	Unsigned	Required
AdminTypeID	ID of ADMIN TYPE table	Integer	10		Not Null	Unsigned	Required

LANDLORD PROPERTY							
Type	Strong						
Identifier	LandlordPropertyID						
Attribute	Description	Data Type	Length	Allowable Default	Null Status	Sign Status	Data Constraint
LandlordPropertyID	Uniquely identifies the landlord property	Integer	10		Not Null	Unsigned	Required
UserID	ID of USER's table -- only a landlord ID	Integer	10		Not Null	Unsigned	Required
Rent	Amount of rent	Money			Not Null		Required
Deposit	Amount for deposit	Money			Not Null		Required
Description	Information about property	Varchar	140		Not Null		Required
BedroomID	ID of NUMERICAL VALUES's table	Integer	10		Not Null	Unsigned	Required
BathID	ID of BATH NUMBERS's table	Integer	10		Not Null	Unsigned	Required
PropertyTypeID	ID of PROPERTY TYPE's table	Integer	10		Not Null	Unsigned	Required
UnitTypeID	ID of UNIT TYPE's table	Integer	10		Not Null	Unsigned	Required
Address	Location of property	Varchar	50		Not Null		Required
AptOrSuite	Specific apartment or suite	Varchar	5		Not Null		Required
NeighborhoodID	ID of NEIGHBORHOOD's table	Integer	10		Not Null		Required
DateAvailableToRent	Date of open occupancy	Date			Not Null		Required
UtilityElectricPaidByLandlord	States if landlord pays electric utility	Bit	1	0	Not Null		Required
UtilityWaterPaidByLandlord	States if landlord pays water utility	Bit	1	0	Not Null		Required
UtilityGasPaidByLandlord	States if landlord pays gas utility	Bit	1	0	Not Null		Required
IsAmenitiesIncluded	If applicable, LANDLORD PROPERTY AMENITY table	Bit	1	0	Not Null		Required
IsHandicapAccessible	If applicable, LANDLORD PROPERTY HANICAP ACCESSIBLE table	Bit	1	0	Not Null		Required
IsPropertyReadyForOccupancy	States if property is ready 10 days before tenant can move in	Bit	1	0	Not Null		Required
IsPetsPermitted	Landlord permits pets on property	Bit	1	0	Not Null		Required
PetDeposit	Amount tenant pays for pet	Money			Not Null		Not Required
IsPicturesExists	A folder of images exists	Bit	1	0	Not Null		Required
PersonOfContact	Individual to contact if interested in property	Varchar	100		Not Null		Required
PhoneNumberOfPersonToContact	Number of person to contact (only numbers)	Integer	10		Not Null		Required
NumberOfTenantViews	Views of property by tenants	Integer	10		Not Null	Unsigned	Required
IsActive	States if property is being updated	Bit	1	0	Not Null		Required
DateLastUpdated	Last date of modification, works with the IsActive field	Date			Not Null		Required
DateOfInactivation	Date made inactive	Date			Not Null		Not Required
DateOfPostage	Date property is posted to the site, every update modifies date	Date			Not Null		Required
DateOfGrace	Date until landlord must renew property	Date			Not Null		Required
DateOfExpiration	Date property will be permanently deleted	Date			Not Null		Required

4.2.2 Functional Tables

USER EMAIL VERIFICATION CODE							
Type	Weak						
Identifier	UserID						
Attribute	Description	Data Type	Length	Allowable Default	Null Status	Sign Status	Data Constraint
UserID	ID of USER'S table	Integer	10		Not Null	Unsigned	Required
Code	Random six digit number	Integer	6		Not Null	Unsigned	Required

USER SECURITY QUESTION							
Type	Dependent						
Identifier	UserSecurityQuestionID						
Attribute	Description	Data Type	Length	Allowable Default	Null Status	Sign Status	Data Constraint
UserSecurityQuestionID	Identifies the row	Integer	10		Not Null	Unsigned	Required
UserID	ID of USER'S table	Integer	10		Not Null	Unsigned	Required
SecurityQuestionID	ID of SECURITY QUESTION table	Integer	10		Not Null	Unsigned	Required
Response	Answer to question	Varchar	50		Not Null		Required

LANDLORD PROPERTY HANDICAP ACCESSIBILITY							
Type	Weak						
Identifier	LandlordPropertyHandicapAccessibilityID						
Attribute	Description	Data Type	Length	Allowable Default	Null Status	Sign Status	Data Constraint
LandlordPropertyHandicapAccessibilityID	Identifies the row	Integer	10		Not Null	Unsigned	Required
LandlordPropertyID	ID of LANDLORD PROPERTY's table	Integer	10		Not Null	Unsigned	Required
AccessibleParkingCloseToHome	Entry and Doorway Options	Bit	1	0	Not Null		Required
RampedEntry	Entry and Doorway Options	Bit	1	0	Not Null		Required
Doorways32InchesOrWider	Entry and Doorway Options	Bit	1	0	Not Null		Required
AccessiblePathToAndInHome32InchesOrWider	Entry and Doorway Options	Bit	1	0	Not Null		Required
AutomaticEntryDoor	Entry and Doorway Options	Bit	1	0	Not Null		Required
LowCounterOrSinkAtOrBelow34Inches	Kitchen Options	Bit	1	0	Not Null		Required
Accessible Appliances	Kitchen Options	Bit	1	0	Not Null		Required
ShowerOrTubGrabBars	Bathroom Options	Bit	1	0	Not Null		Required
RollInShower	Bathroom Options	Bit	1	0	Not Null		Required
HandHeldShowerSprayer	Bathroom Options	Bit	1	0	Not Null		Required
FixedSeatInShowerOrTub	Bathroom Options	Bit	1	0	Not Null		Required
RaisedToilet	Bathroom Options	Bit	1	0	Not Null		Required
FirstFloorBathroom	Bathroom Options	Bit	1	0	Not Null		Required
LiftOrElevator	Miscellaneous Options	Bit	1	0	Not Null		Required
AudioOrVisualDoorbell	Miscellaneous Options	Bit	1	0	Not Null		Required
AudioOrVisualSmokeOrFireAlarm	Miscellaneous Options	Bit	1	0	Not Null		Required
FirstFloorBedroom	Miscellaneous Options	Bit	1	0	Not Null		Required
ElevatorAccess	Miscellaneous Options	Bit	1	0	Not Null		Required

LANDLORD PROPERTY AMENITY							
Type	Dependent						
Identifier	LandlordPropertyID, AmentityID						
Attribute	Description	Data Type	Length	Allowable Default	Null Status	Sign Status	Data Constraint
PropertyID	ID of LANDLORD PROPERTY's table	Integer	10		Not Null	Unsigned	Required
AmenityID	ID of AMENITY's table	Integer	10		Not Null	Unsigned	Required

LANDLORD PROPERTY PICTURE							
Type	Weak						
Identifier	LandlordPictureID						
Attribute	Description	Data Type	Length	Allowable Default	Null Status	Sign Status	Data Constraint
LandlordPictureID	Identifies the row	Integer	10		Not Null	Unsigned	Required
LandlordPropertyID	ID of LANDLORD PROPERTY's table	Integer	10		Not Null	Unsigned	Required

USER DELETION REQUEST							
Type	Weak						
Identifier	UserDeletionRequestID						
Attribute	Description	Data Type	Length	Allowable Default	Null Status	Sign Status	Data Constraint
UserDeletionRequestID	Identifies the request	Integer	10		Not Null	Unsigned	Required
UserIDRequestedBy	ID of USER's table	Integer	10		Not Null	Unsigned	Required
UserIDToDelete	ID of USER's table	Integer	10		Not Null	Unsigned	Required
RequestReason	Description of why deletion is requested	Varchar	300		Not Null		Required
DateRequested	Date of Request	DateTime			Not Null		Required

LANDLORD PROPERTY DELETION REQUEST							
Type	Weak						
Identifier	LandlordPropertyDeletionRequestID						
Attribute	Description	Data Type	Length	Allowable Default	Null Status	Sign Status	Data Constraint
LandlordPropertyDeletionRequestID	Identifies the request	Integer	10		Not Null	Unsigned	Required
UserIDRequestedBy	ID of USER's table	Integer	10		Not Null	Unsigned	Required
LandlordPropertyIDToDelete	ID of LANDLORD PROPERTY's table	Integer	10		Not Null	Unsigned	Required
RequestReason	Description of why deletion is requested	Varchar	300		Not Null		Required
DateRequested	Date of Request	DateTime			Not Null		Required

4.2.1 Secondary Tables

USER TYPE							
Type	Strong						
Identifier	UserTypeID						
Attribute	Description	Data Type	Length	Allowable Default	Null Status	Sign Status	Data Constraint
UserTypeID	Identifies the type	Integer	10		Not Null	Unsigned	Required
Type	Name of type of user	Varchar	25		Not Null		Required

SECURITY QUESTION							
Type	Strong						
Identifier	SecurityQuestionID						
Attribute	Description	Data Type	Length	Allowable Default	Null Status	Sign Status	Data Constraint
SecurityQuestionID	Identifies the question	Integer	10		Not Null	Unsigned	Required
Question	Security question	Varchar	225		Not Null		Required

ADMIN TYPE							
Type	Strong						
Identifier	AdminTypeID						
Attribute	Description	Data Type	Length	Allowable Default	Null Status	Sign Status	Data Constraint
AdminTypeID	Identifies the privileges	Integer	10		Not Null	Unsigned	Required
Type	The type of admin	Varchar	50		Not Null		Required

NEIGHBORHOOD							
Type	Strong						
Identifier	NeighborhoodID						
Attribute	Description	Data Type	Length	Allowable Default	Null Status	Sign Status	Data Constraint
NeighborhoodID	Identifies the area	Integer	10		Not Null	Unsigned	Required
Neighborhood	Name of area	Varchar	50		Not Null		Required
ZipCode	Zip Code of neighborhood	Integer	10		Not Null	Unsigned	Required

BEDROOM NUMBER							
Type	Strong						
Identifier	BedroomNumberID						
Attribute	Description	Data Type	Length	Allowable Default	Null Status	Sign Status	Data Constraint
BedroomNumberID	Identifies the bedroom number	Integer	10		Not Null	Unsigned	Required
Count	Number of rooms	Integer	10		Not Null	Unsigned	Required
Description	Definition of room	Varchar	50		Not Null		Required

PROPERTY TYPE							
Type	Strong						
Identifier	PropertyTypeID						
Attribute	Description	Data Type	Length	Allowable Default	Null Status	Sign Status	Data Constraint
PropertyTypeID	Identifies the property	Integer	10		Not Null	Unsigned	Required
Type	Kind of house	Varchar	50		Not Null		Required

UNIT TYPE							
Type	Strong						
Identifier	UnitTypeID						
Attribute	Description	Data Type	Length	Allowable Default	Null Status	Sign Status	Data Constraint
UnitTypeID	Identifies the classification	Integer	10		Not Null	Unsigned	Required
Type	Classification of unit	Varchar	50		Not Null		Required

AMENTITY							
Type	Strong						
Identifier	AmentityTypeID						
Attribute	Description	Data Type	Length	Allowable Default	Null Status	Sign Status	Data Constraint
AmentityTypeID	Identifies the classification	Integer	10		Not Null	Unsigned	Required
Type	Type of property amentity	Varchar	50		Not Null		Required

PHONE NUMBER TYPE							
Type	Strong						
Identifier	PhoneNumberTypeID						
Attribute	Description	Data Type	Length	Allowable Default	Null Status	Sign Status	Data Constraint
PhoneNumberTypeID	Identifies the classification	Integer	10		Not Null	Unsigned	Required
Type	Type of number	Varchar	50		Not Null		Required

STATE							
Type	Strong						
Identifier	StateID						
Attribute	Description	Data Type	Length	Allowable Default	Null Status	Sign Status	Data Constraint
StateID	Identifies the state	Integer	10		Not Null	Unsigned	Required
State	Name	Varchar	50		Not Null		Required

4.2.1.1 Secondary Table Content

USER TYPE
Tenant
Landlord
Admin

UNIT TYPE
Ground Floor Unit
Upper Floor
Rear Apartment

ADMIN TYPE
Tech Admin
Section 8 Admin

PHONE NUMBER TYPE

Mobile
Home
Fax
Work

BEDROOM NUMBER

Count	Description
0	Studio
1	House with One Room
2	House with Two Room
3	House with Three Room
4	House with Four Room
5	House with Five Room

SECURITY QUESTIONS

What is NOT the last name of your favorite teacher?
What is NOT one of your favorite holidays?
What city you were NOT born in?
What is NOT the month of your birthday?
What is NOT your favorite color?
Who is NOT your favorite musical artist?

PROPERTY TYPE

Single Family Home
Duplex/Double
Townhouse
Apt Complex/Garden Walkup

REASON FOR CONTACT

Problem with Email Verification
Problem with Signing In
Problem with Signing Up
Positive Comment on Housing Choice Connect
Other

PROPERTY AMENITY

Type	Classification
Central Air/Heat	Indoor
Wahser	Indoor
Dryer	Indoor
Alarm	Indoor
Washer/Dryer Hookups	Indoor
Ceiling Fans	Indoor
Dishwahr	Kitchen
Refrigerator	Kitchen
Garbage Disposal	Kitchen
Off Street Parking	Outdoor
Covered Parking	Outdoor
Front Yard	Outdoor
Back Yard	Outdoor
Gated	Outdoor
OnSite Security	Other

BATH NUMBER

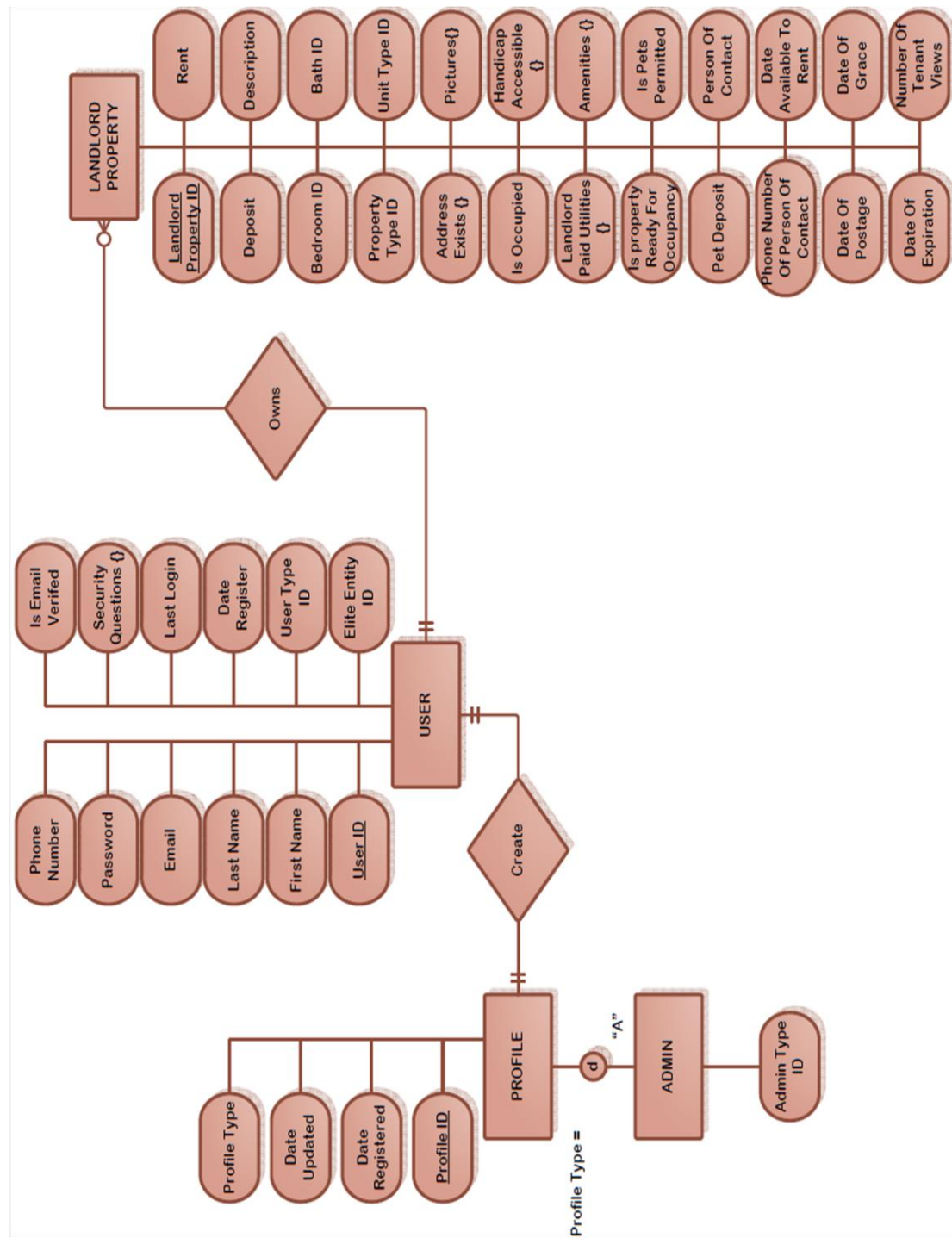
1
1.5
2
2.5
3
2.5
4
4.5
5

STATE				
Alabama	Hawaii	Massachusetts	New Mexico	South Dakota
Alaska	Idaho	Michigan	New York	Tennessee
Arizona	Illinois	Minnesota	North Carolina	Texas
Arkansas	Indiana	Mississippi	North Dakota	Utah
California	Iowa	Missouri	Ohio	Vermont
Colorado	Kansas	Montana	Oklahoma	Virginia
Connecticut	Kentucky	Nebraska	Oregon	Washington
Delaware	Louisiana	Nevada	Pennsylvania	West Virginia
Florida	Maine	New Hampshire	Rhode Island	Wisconsin
Georgia	Maryland	New Jersey	South Carolina	Wyoming

4.3 Cardinality Relationships between Entities

CARDINALITY RELATIONSHIPS					
Entity Name	Entity Name	Relationship Name	Degree	Max Cardinality	Min Cardinality
USER	PROFILE	One to One	Unary	One	One
LANDLORD	LANDLORD PROPERTY	One to Many	N-ary	Many	One

4.4 EER Diagram



4.5 Website Flowchart

