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Proposal for a Property Management System for Island Realty

1. Introduction

Island Realty is a full-service real estate company located on Isle of Palms, SC. The company offers short and long term property management, as well as sales service through Keller-Williams Real Estate. All of the entities in the company manage their various responsibilities through different means. Our proposed system will be an application to manage the various aspects of properties under the umbrella of long-term management. Long-term management at Island Realty currently employs 5 property managers and one office assistant, who coordinate the management of over 300 individual rental properties and associations.

2. The Current System

Currently, Island Realty's long-term management office uses a variety of different means to accomplish their goals. Many activities are accomplished through the use of paper/digital PDF forms and Excel spreadsheets. Communication is handled via telephone or email communication, and many activities currently require personal communications to accomplish certain goals, i.e. a property owner or tenant must contact a property manager to report a problem at the property and initiate service. Email requests may or not be intercepted immediately if sent, and if there is a delay in receiving a request for service, the consequences can be potentially damaging financially for owners. Records are generally stored in paper format, with storage space becoming a premium since the business has grown over the past few years.

3. The Proposed System

Our proposed system for Island Realty seeks to largely do away with the inefficiencies that come with the current state of operations. The proposed system will seek to mostly do away with the current paper/digital forms and Excel spreadsheets, and move the operations that use them to a web-based application that accomplishes the reporting that these things are used for, with the added benefit of making reporting operations available from anywhere. Along with the consolidation of these operations, the proposed system will also add functionality for both owners and tenants that does not exist under the current system, such as the ability to automate reporting of maintenance issues and the ability to pay rent electronically.

3.1. Overview

The new system for Island Realty will be deployed in both an office and mobile environment. The majority of the system functionality will only need be supported in a web interface – this will provide most of the functionality necessary, with the remainder needing to be supported in a mobile environment, primarily for on-site reporting via iPads issued to property managers. For this project, the deliverables are limited to the new management system, in both web and mobile environments. Delivery for the web interface should be no later than August 1, 2014, with the mobile interface being delivered no later than September 1, 2014.

For acceptance, the system should support, at minimum, the following functionality:

- The ability to add, remove and manage properties, owners, and tenants to and from the system
- The ability to create associations for given properties
- The ability to issue maintenance requests on properties
- The ability to track inspections and add inspection records to properties

The remaining functionality can be rolled out as they become available for use. This will give employees ample time to both become acquainted with the new system and begin/complete the process of data entry.

System training for employees should be conducted following initial rollout, lasting approximately two weeks. Training for the mobile interface will occur in a similar fashion.

3.2. Functional Requirements

Functional requirements of the system include, but are not limited to:

- Ability to add/remove properties to/from database
- Ability to add/remove owners to/from database
- Ability to add/remove tenants to/from database
- Ability to create property associations from list of existing properties
- Ability to enter insurance carrier information for each property
- Ability to log electronic communication with date/time stamp
- Ability to generate reports on properties with modifiable filters
- Ability to format owner information into a directory-style format
- Ability to calculate late fees for late payments on rent, and adjust rent accordingly
- Ability to generate work orders for property maintenance, and automate sending of work orders via email
- Ability for tenants to pay rent and fees online, and link these payments to accounting
- Ability for owners or tenants to request services for both immediate and non-immediate needs
- Ability for owners and tenants to obtain status of service requests via the web portal
- Ability for accounting system to automatically pay owners after receipt of payments from tenants and calculation of fees due

3.3. Non-functional Requirements

Non-functional requirements include, but are not limited to:

- System must meet 99% reliability during normal business hours, 7 days per week – maintenance activities should be performed off-peak
- Database backups should occur in the cloud as well as to a local site
- System units should be available for future modification
- System must be portable across hardware and OS platforms
- System front-end should be operable on both present-day and legacy hardware

3.4. Constraints

System constraints include:

- System must be built on the Salesforce platform
- System must be available in a web interface for multi-platform use
- Mobile client must be built for iOS implementation for use on iPads

3.5. System Models

3.5.1. Use Case Scenarios

Scenario 1 – Add Property

Lindsey, a property manager at Island Realty, has just signed a new property to the long-term management program, and needs to add it into the system. Lindsey will log into her manager account in the application. As a property manager, Lindsey has her own set of abilities within the application based on her profile. Upon login, Lindsey will first need to add the property owner's information into the owner database. Lindsey will select Add Owner from her menu, and add the owner's name, home address, telephone number, social security number and email address to the owner database. After the Owner has been added, Lindsey will then select Add Property. After selecting Add Property, Lindsey will enter the address of the property and select the owner from the list of owners. She then must add a scanned copy of the management agreement for the property. Lindsey will then save the information.

Use case name	addProperty
Participating actors	propertyManager
Flow of events	1. propertyManager signs a new property to long-term management contract 2. If the owner is not in the system, propertyManager selects Add Owner from interface 2.1. propertyManager adds owner's name, telephone number, social security number, email address, and home address 3. propertyManager selects Add Property from interface 4. propertyManager adds property address and selects owner from the list 5. propertyManager then imports the digital copy of the management agreement and saves the property 6. System acknowledges receipt of information or displays error
Entry condition	propertyManager is logged in
Exit condition	Dialog indicating successful addition to the database or Dialog indicating an error occurred and request to try again

Scenario 2 – Add Owner

Stephanie, another property manager, has signed a new owner who has multiple properties for the program. Before she is able to add any of the owner's properties to the system, she must first add the owner's information to the system. Stephanie must first login to the system, where she will select Add Owner. After selecting Add Owner, she may then add the owner's name, home address, telephone number, social security number and email address. After adding the owner's information, she may proceed to adding properties for the owner.

Use case name	addOwner
Participating actors	propertyManager
Flow of events	1. propertyManager signs a new owner 2. propertyManager selects Add Owner from interface 3. propertyManager adds owner's name, telephone number, social security number, email address, and home address 4. System acknowledges receipt of information or displays error
Entry condition	propertyManager is logged in
Exit condition	Dialog indicating successful addition to the database or Dialog indicating an error occurred and request to try again

Scenario 3 – Add Tenant

Ashley, a property manager, has rented a vacant property to a tenant who is not currently in the Island Realty database. Ashley must first add this tenant to the database before she can update the tenant information for the property. She must first login to the application, and select Add Tenant. She then must add the tenant's name, telephone number, email address, and social security number. She may then select the property, and update the tenant information for the rental.

Use case name	addTenant
Participating actors	propertyManager
Flow of events	1. propertyManager rents vacant property to tenant 2. propertyManager selects Add Tenant from interface 3. propertyManager adds tenant's name, telephone number, email address, and social security number 4. System acknowledges receipt of information or displays error
Entry condition	propertyManager is logged in
Exit condition	Dialog indicating successful addition to the database or Dialog indicating an error occurred and request to try again

Scenario 4 – Remove Property

An owner has told Angel, a property manager, that they will not be renewing their management agreement with Island Realty when the current tenant moves out of the property. Upon exit of the tenant, Angel must first login to the system. She will then access the list of properties, select the property she wishes to remove, and select the Delete Property function. A message will then appear asking if Angel to confirm her decision to remove the property. After selecting yes, the property is deleted from the list of active properties.

Use case name	removeProperty
Participating actors	propertyManager
Flow of events	1. Owner does not renew management agreement 2. propertyManager selects Property Management from interface 3. propertyManager selects Remove Property from interface 4. propertyManager selects property to remove from list and selects Delete Property 5. System confirms that propertyManager wishes to remove property from system 6. propertyManager confirms selection and property is deleted OR propertyManager cancels selection 7. If selection is confirmed, property is deleted from system 8. If selection is cancelled, no action is taken
Entry condition	propertyManager is logged in
Exit condition	Dialog indicating successful removal from the database or Dialog indicating an error occurred and request to try again

Scenario 5 – Create Association

Lindsey has just been asked to manage an association of properties – a group of properties ruled by a governing body. To create the association in the system, Lindsey must first login to the application and then add owner information for each property. After adding the owner information for each property, she must then add each property itself. After all properties to be included in the association have been added, Lindsey will then choose Create Association. To create the association, Lindsey will add an association name, add properties to the association from the property list, and define the governing board from the list of owners. She must then add a copy of the governance agreement to the association.

Use case name	createAssociation
Participating actors	propertyManager
Flow of events	1. Association is added to long-term management 2. For each owner that will be covered under the association, propertyManager must select Add Owner from the interface and add owner information 3. For each property that will be covered under the association, propertyManager must select Add Property from the interface and add property information 4. For each established board position, propertyManager must select an Owner from the list of Owners to fill each board position 5. propertyManager must then add a managementAgreement document to the association
Entry condition	propertyManager is logged in
Exit condition	Dialog indicating successful addition to the database or Dialog indicating an error occurred and request to try again

Scenario 6 – Report Maintenance Issue

James Williams, a tenant at 112 Palm Blvd., a property managed by Lindsey, discovers that the roof is leaking after it begins to rain. It is after hours, and James is unable to get anyone on the phone. James can report the issue via the tenant portal in the application. After logging into the web portal for tenants, James selects Report Maintenance Issue from his menu screen. After making his selection, James is able to write a textual account of the problem and mark a level of urgency associated with the problem. James then presses the Send key. Once James sends the account of the issue, Lindsey receives and email notifying her that there is an issue, along with the textual account and level of urgency written by James. An email with the same textual account is also sent to the owner of the property.

Use case name	reportMaintenance
Participating actors	tenant, propertyManager, propertyOwner
Flow of events	1. Maintenance issue occurs at a Property 2. Tenant discovers issue and attempts to contact propertyManager without success 3. Tenant logs into app and selects Report Maintenance Issue 4. Tenant gives a textual account of issue to be reported 5. Tenant assigns an urgency level to issue 6. Tenant sends issue report 7. Email is dispatched to propertyManager and propertyOwner with the textual account and urgency level of the issue
Entry condition	tenant is logged in
Exit condition	Dialog indicating successful reporting of the issue or Dialog indicating an error occurred and request to try again

Scenario 7 – Pay Rent

Adam Green, a tenant at 1401 Center St., must pay his rent no later than the 5th of the month to avoid a late charge. Unable to make it to the office to drop off a check prior to the office closing on the 5th, Adam needs to pay online before the end of the day. Adam must first log into the web portal for tenants, and then select Pay Rent from his menu screen. After making his selection, Adam is presented with the total amount of rent due and is asked to input how much he wishes to pay. Adam then must input his bank account information, including routing and account number. Adam is then asked to confirm both his payment amount and account information. After confirmation, Adam is given confirmation that the transaction took place.

Use case name	payRent
Participating actors	tenant
Flow of events	1. Tenant must have rent due 2. Tenant elects to pay rent online 3. Tenant logs into app and selects Pay Rent 4. Tenant sees amount due and inputs amount he wishes to pay 5. Tenant inputs account number and bank routing number 6. Tenant must confirm payment amount and account information 7. Tenant receives confirmation that transaction took place 8. Payment information from tenant forwarded to accounting for debit from tenant account
Entry condition	tenant is logged in
Exit condition	Dialog indicating successful transaction or Dialog indicating an error occurred and request to try again

Scenario 8 – Submit Work Order

Lindsey, a property manager, receives notification that the tenant at one of her properties has reported a maintenance issue. After reading the textual account of the issue and evaluating the urgency level, Lindsey must first log into the system. Lindsey then selects Maintenance from her menu, and then selects Submit Work Order. Lindsey must then assign a vendor to correct the issue. Lindsey must select the vendor to correct the issue from a list of preapproved vendors in a database maintained by her department. Lindsey then must create a work order for the vendor, including the address of the property, the name of the tenant, the textual account of the issue provided by the tenant, and the urgency level. Lindsey then sends the work order to the vendor to perform the requested maintenance.

Use case name	submitWorkOrder
Participating actors	propertyManager
Flow of events	1. propertyManager receives notification of maintenance issue from tenant 2. propertyManager selects Submit Work Order from Maintenance menu 3. propertyManager selects vendor to service issue 4. propertyManager inputs property address, tenant name, textual account of issue, and urgency level 5. propertyManager submits work order to vendor for completion
Entry condition	propertyManager is logged in
Exit condition	Dialog indicating successful submission of the issue to vendor or Dialog indicating an error occurred and request to try again

Scenario 9 – Schedule Inspection

Ashley needs to perform an inspection at a property located at 112 Palm Blvd. Property managers are required to give notice to tenants when they will be entering the property. Ashley must also give notice to her coworkers that she will be out of the office during the inspection. After logging in, Ashley selects Inspections from her menu, and then selects Schedule Inspection. After her selection, Ashley then must input the address of the property to be inspected, the name of the tenant who resides at the property, and the date that she will be performing the inspection. Ashley then submits the request to schedule the inspection. After submitting the request, notifications about the inspection are sent to both the tenant residing at the property and the department manager to add to the department calendar.

Use case name	scheduleInspection
Participating actors	propertyManager, tenant
Flow of events	1. propertyManager needs to inspect property 2. propertyManager selects Inspections, then Schedule Inspection from menu 3. propertyManager inputs property address from property list 4. propertyManager selects tenant from list 5. propertyManager selects date for inspection 6. propertyManager submits request for inspection 7. Email is dispatched to propertyManager for addition to department calendar 8. Email is dispatched to tenant to advise of inspection date
Entry condition	propertyManager is logged in
Exit condition	Dialog indicating successful submission of inspection request or Dialog indicating an error occurred and request to try again

Scenario 10 – Submit Inspection

Ashley has completed the inspection on the property at 112 Palm Blvd. The department uses a digital form for inspections that they complete on iPads in the field. These are temporarily stored in cloud storage, but must be added to the property record as proof the inspection was performed and as a record of any issues found. Ashley must first log in, and choose Inspection from her menu, then Complete Inspection. After making her choice, Ashley selects the property inspected and the date the inspection was completed. Ashley then must upload a copy of the completed inspection form to add to the record. After uploading the inspection form, Ashley submits the record of the completed inspection. An email is dispatched to the owner of the property inspected advising the inspection was completed, along with the completed inspection form, so that the owner can be kept aware of any issues with the property.

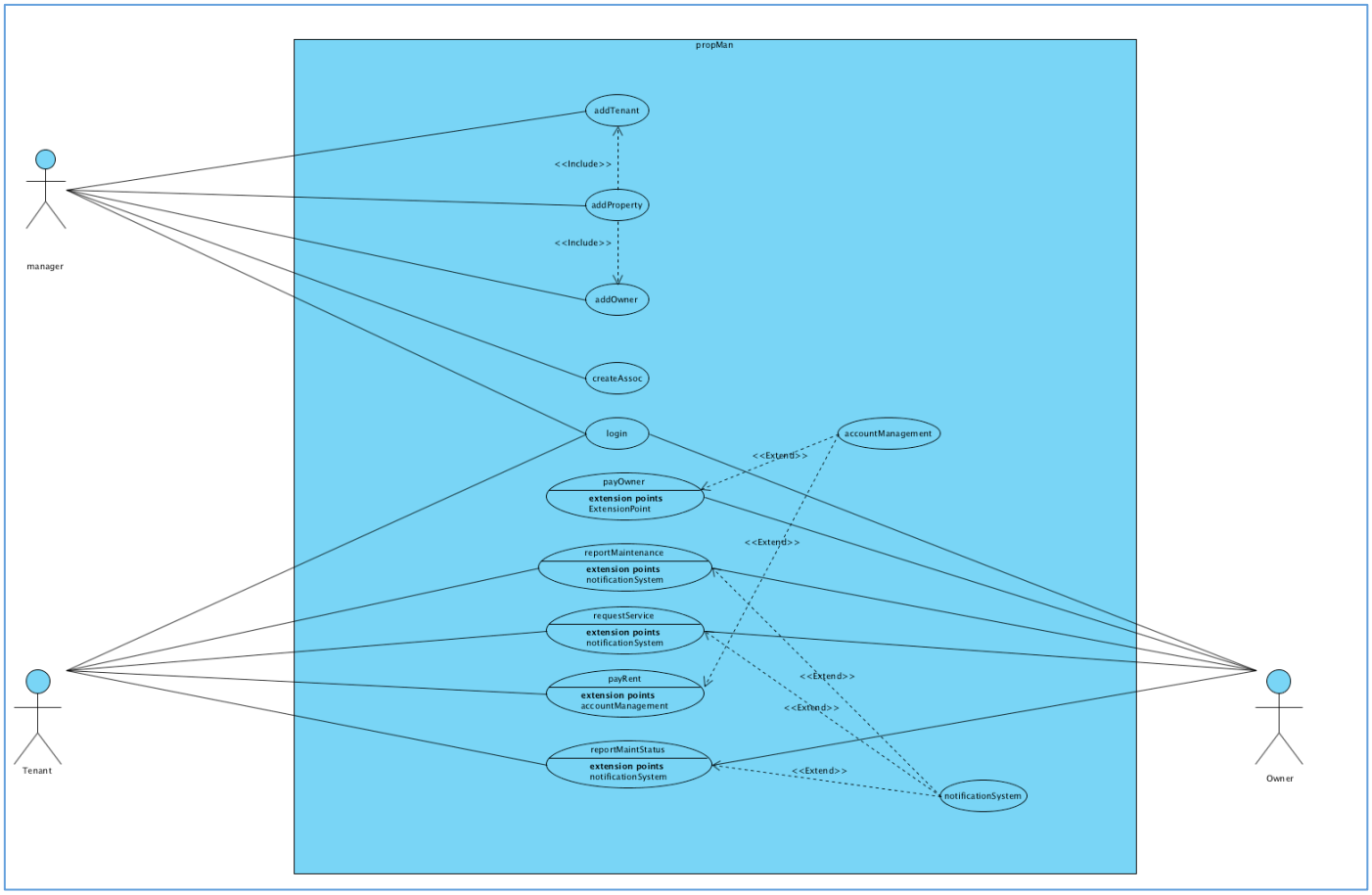
Use case name	submitInspection
Participating actors	propertyManager, propertyOwner
Flow of events	1. Inspection completed at property by propertyManager 2. propertyManager selects Inspections, then Complete Inspection from menu 3. propertyManager selects property inspected from list 4. propertyManager selects date inspection on property was completed 5. propertyManager uploads copy of completed inspection form to record 6. propertyManager submits completed inspection record 7. Email is dispatched to propertyOwner notifying them that an inspection was completed and provides them with a copy of the completed inspection form
Entry condition	propertyManager is logged in
Exit condition	Dialog indicating successful submission of inspection record or Dialog indicating an error occurred and request to try again

Scenario 11 – Get Maintenance Status

Adam Green, the tenant at 1401 Center St., would like to know the status of a request that he filed via the application for pest control service. After logging into the application, Adam selects Maintenance for the Tenant portal. After selecting Maintenance, Adam then selects Get Maintenance Status from the Maintenance menu. After the selection, Adam is presented with a list of all maintenance requests filed via application. Adam selects the entry for “Pest Control,” at which point he is able to view that the property manager for his property has scheduled a pest control company to come to his property next week. This scenario is also available to Property Owners.

Use case name	getMaintStatus
Participating actors	tenant, propertyOwner
Flow of events	1. Tenant/propertyOwner has outstanding maintenance request 2. Tenant/propertyOwner selects Maintenance, then Get Maintenance Status from menu 3. Tenant/propertyOwner selects maintenance request from list filed via application 4. Maintenance status is displayed to tenant/propertyOwner
Entry condition	tenant/propertyOwner is logged in
Exit condition	Status of maintenance request is displayed or Dialog indicating a system error is displayed

3.5.2. Use Case Model

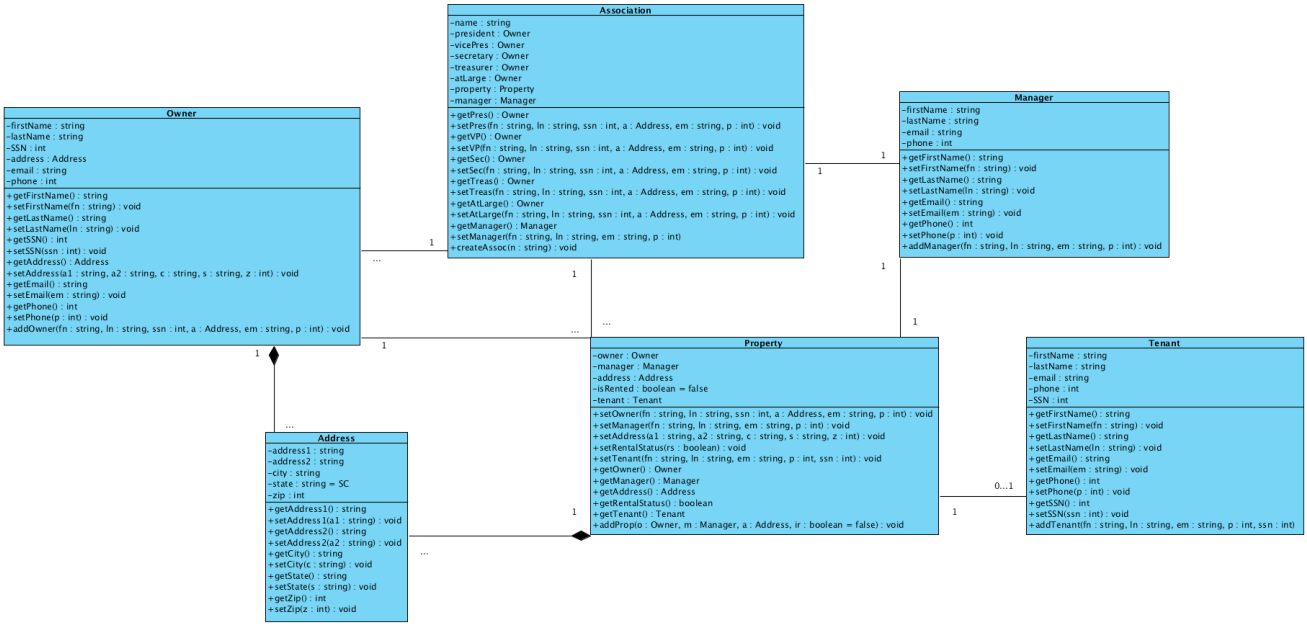


3.5.3. Object Model

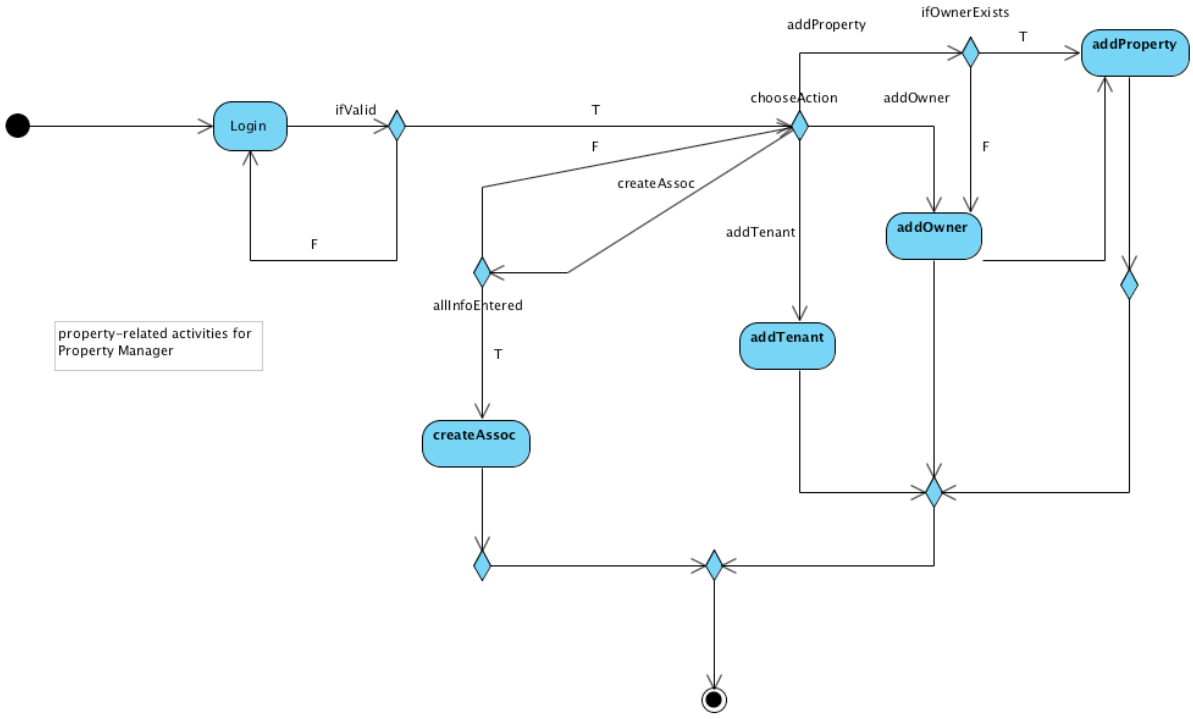
3.5.3.1. Data Dictionary

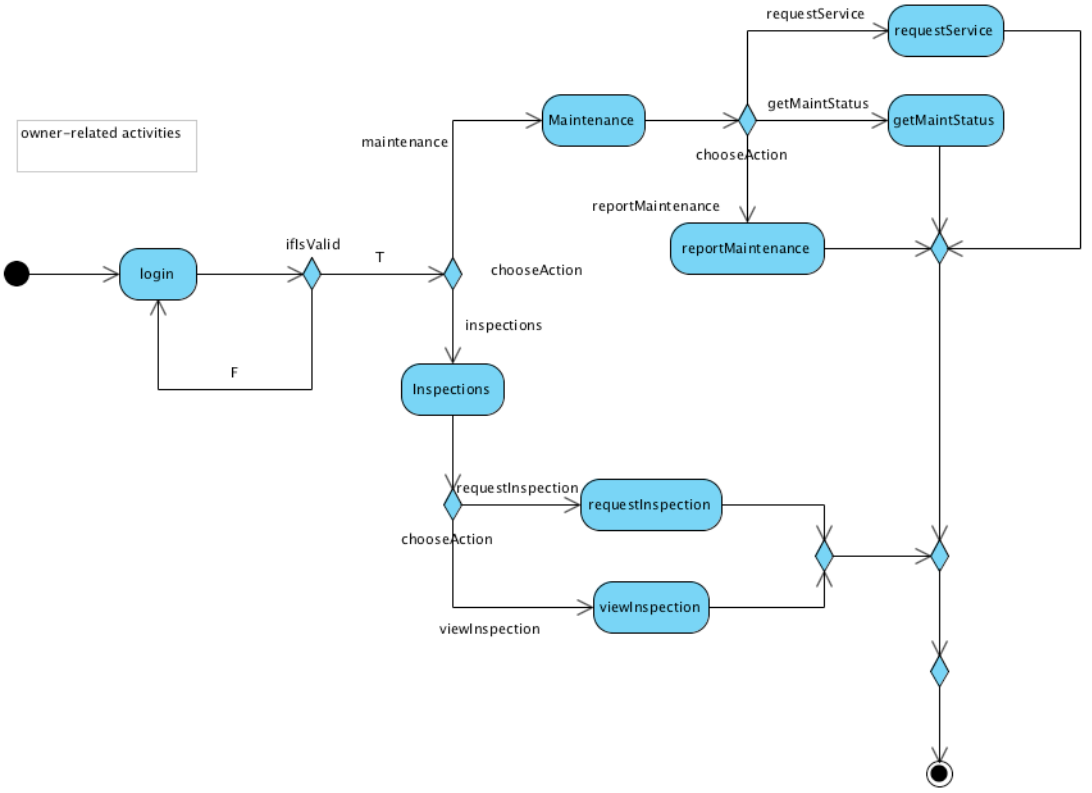
Name	Type	Description	Possible value
firstName	string	First name value – used for managers, owners, and tenants	John
lastName	string	Last name value – used for managers, owners, and tenants	Smith
email	string	Email address – used for managers, owners, and tenants	john@anyisp.com
phone	int	10-digit phone number – used for managers, owners, and tenants	8435551234
SSN	int	9-digit social security number – used for owners and tenants	123456789
address1	string	Primary street address	1 Anywhere St
address2	string	Secondary street address – used primarily for apartments	Apt 10
city	string	City of address	Charleston
state	string	2-letter abbreviation of state of address	SC
zip	int	5-number zip code of address	29401
name	string	Name of an association	Bay Club
president	Owner	Association owner who serves as president of the association board	John Smith
vicePres	Owner	Association owner who serves as vice-president of the association board	James Jones
secretary	Owner	Association owner who serves as secretary of the association board	Michael Harris
treasurer	Owner	Association owner who serves as treasurer of the association board	Carol Johnson
atLarge	Owner	Association owner who serves as an at-large member on the association board – each association may have multiple at-large members	Richard James
property	Property	Property object that is under management; may or may not be part of an association – association can have multiple properties	112 Palm
manager	Manager	Manager object that describes an employ of management agency – can manage multiple properties	Lindsey Black
owner	Owner	Owner object that describes a property owner – may own multiple properties	Jon Wilcox
address	Address	Address object that describes a property location	112 Palm Blvd Isle of Palms, SC 29451
isRented	boolean	Boolean value for whether or not a property is rented – false by default	false
tenant	Tenant	Tenant object that describes a person who is renting a property	Andrew Lincoln

3.5.3.2. Class Diagram



3.5.4. Activity Diagrams

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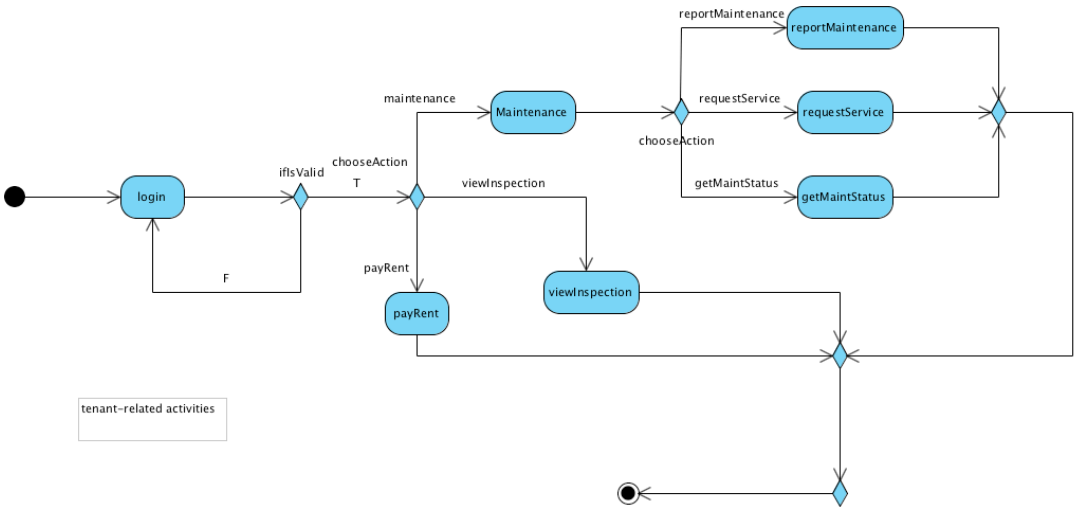
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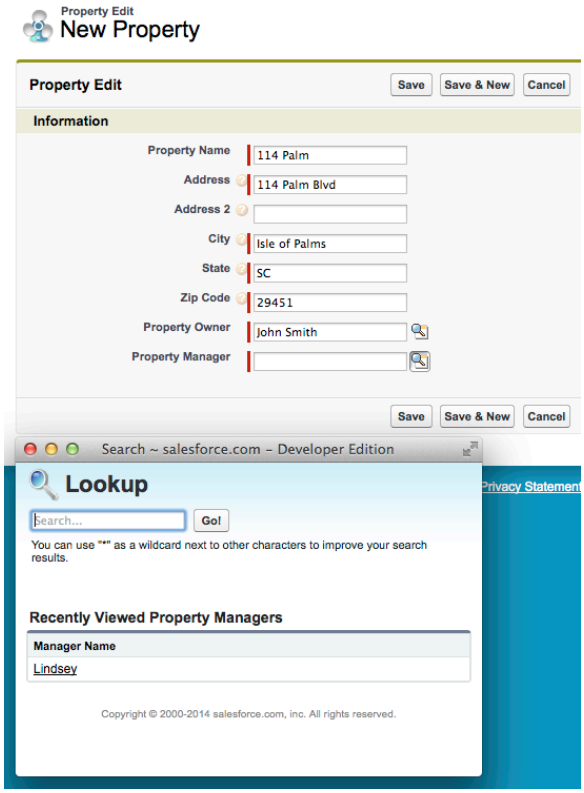
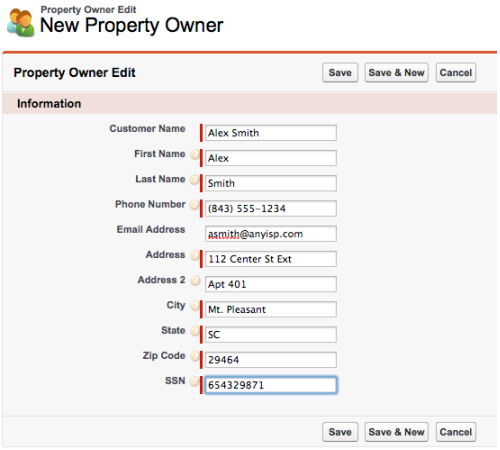
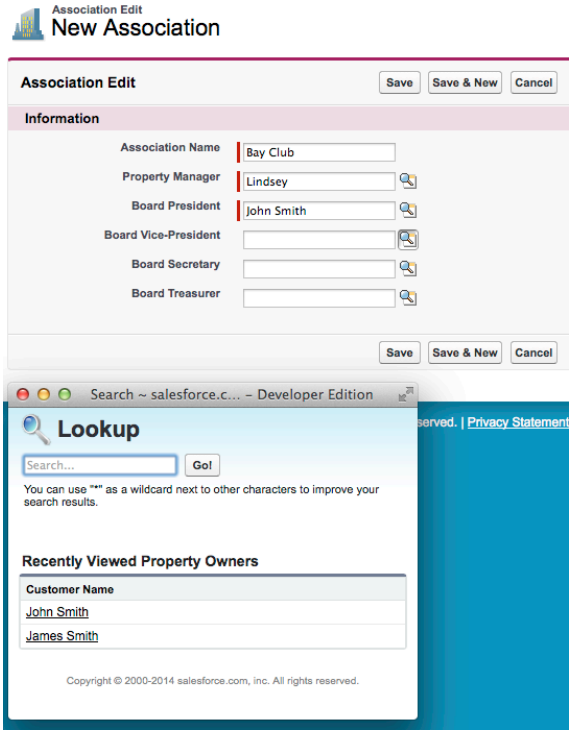
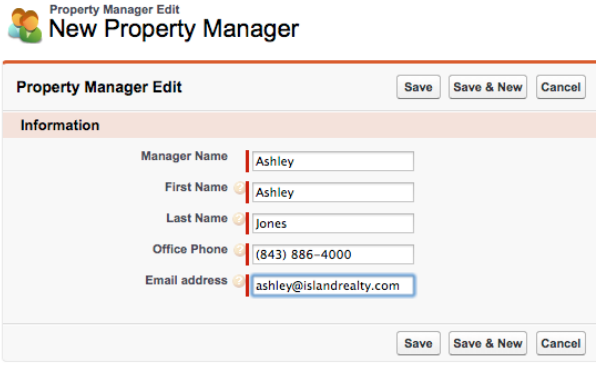
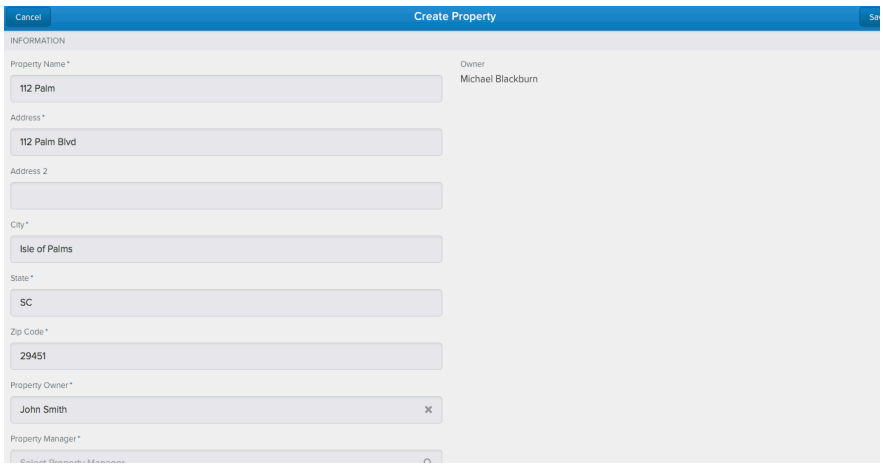
3.5.5. User Interface











4. Glossary

Property Manager	Employee who is assigned management of an individual property or association.
Owner	Property owner – may or may not have multiple properties under management.
Tenant	Renter who rents a property from an owner through management agency.
Property	Individual address that is owned by an owner, rented to a tenant through management service, and managed by property manager employed by service.
Association	A property or group of properties that has a governance agreement and board of governors, and is managed by an employee property manager.
Board Member	Owner of a property that is managed as part of an association, who fills a position on the board of governors.
Board of Governors	Governing board of an association. Minimum positions on a board are president and vice president.

For this project, I integrated with Ronald Z. by using (and altering) his manager object.