

# **Roopairs: Software Requirements Specification version 1.0**

Toopairs  
*Computer Science Department  
California Polytechnic State University  
San Luis Obispo, CA USA*

October 10, 2019

# Contents

<b>Revision History</b>	<b>3</b>
-------------------------	----------

<b>Credits</b>	<b>3</b>
----------------	----------

<b>1 Introduction</b>	<b>4</b>
-----------------------	----------

1.1 Purpose . . . . .	4
1.2 Document Conventions . . . . .	4
1.3 Intended Audience and Reading Suggestions . . . . .	4
1.4 Project Scope . . . . .	4
1.5 References . . . . .	4

<b>2 Overall Description</b>	<b>4</b>
------------------------------	----------

2.1 Product Perspective . . . . .	4
2.2 Product Features . . . . .	5
2.3 User Personas . . . . .	5
2.4 User Classes and Characteristics . . . . .	11
2.5 Operating Environment . . . . .	12
2.6 Design and Implementation Constraints . . . . .	12
2.7 Assumptions and Dependencies . . . . .	12

<b>3 Use Cases</b>	<b>12</b>
--------------------	-----------

3.1 Use Case 1: Repair a Home Owner's Appliance . . . . .	12
3.2 Use Case 2: Communication Between Services, Landlords/Caretakers, and Tenants. . . . .	14
3.3 Use Case 3: Landlord Approving and Sending Service Requests to Roopairs Network . . . . .	16
3.4 Use Case 4: Viewing the Status of a Service Job. . . . .	17
3.5 Use Case 5: Caretaker and Tenant Repair an Appliance . . . . .	18

<b>4 System Features</b>	<b>20</b>
--------------------------	-----------

4.1 System Feature 1 . . . . .	20
4.1.1 Description and Priority . . . . .	20
4.1.2 Stimulus/Response Sequences . . . . .	20
4.1.3 Functional Requirements . . . . .	21
4.2 System Feature 2 . . . . .	22
4.2.1 Description and Priority . . . . .	22
4.2.2 Stimulus/Response Sequences . . . . .	22
4.2.3 Functional Requirements . . . . .	23

<b>5</b>	<b>External Interface Requirements</b>	<b>23</b>
5.1	User Interfaces . . . . .	23
5.2	Hardware Interfaces . . . . .	23
5.3	Software Interfaces . . . . .	23
5.4	Communications Interfaces . . . . .	23
<b>6</b>	<b>Nonfunctional Requirements</b>	<b>24</b>
6.1	Performance Requirements . . . . .	24
6.2	Security Requirements . . . . .	24
6.3	Software Quality Attributes . . . . .	24
<b>A</b>	<b>Issues List</b>	<b>24</b>

## Credits

Name	Date	Role	Version
Adam Berard	October 10, 2019	Author of 2.4 and Revisor and Co-Author of 4	1.0
Tommy Bergmann	October 10, 2019	Author of 1.1 and 1.4	1.0
Cesar Chacon	October 10, 2019	Co-Author of Section 2 and Appendix A	1.0
Eeron Grant	October 10, 2019	Author of Section 2.6 and 2.8, Co-Author of Horizontal Prototype	1.0
Sarah MacDougall	October 10, 2019	Lead Author of Horizontal Prototype, Jira Manager	1.0

## Revision History

Name	Date	Reason for Changes	Version
Adam Berard	October 10, 2019	Revised certain items from 4.1.3.	1.0
Tommy Bergmann	October 10, 2019	Thematic changes to 2.3	1.0
Cesar Chacon	October 10, 2019	Section 2.1, 2.2, 2.5	1.0
Eeron Grant	October 10, 2019	Reviewed Section 3	1.0
Sarah MacDougall	October 10, 2019	Section 3.5, 6	1.0

# 1 Introduction

## 1.1 Purpose

The SRS contains the limitations and requirements for the Roopairs-PolyRents application, covering all functional and nonfunctional features that are expected in version 1.0. This document will be used as a reference by the development team for what product they are expected to make.

## 1.2 Document Conventions

TBD

## 1.3 Intended Audience and Reading Suggestions

TBD

## 1.4 Project Scope

The primary purpose of this application is to connect landlords to service providers to make the process of fixing appliances both quick and easy. Further information is available in the team's Vision and Scope document.

<https://www.overleaf.com/4196796498nqzrpvskgjvw>

## 1.5 References

TBD

# 2 Overall Description

## 2.1 Product Perspective

The product being developed is a stand-alone software application that will use Roopairs' Service Provider Network to address the issue of landlord and tenant communication based on service job requests. This application will be an extension of the PolyRents website which mainly addresses the issue of finding housing for tenants and managing housing applications for landlords. Our application will be made with React in order to achieve seamless partnership integration with the PolyRents website frontend which is also built with React.

## 2.2 Product Features

The main features of our application will focus on two parties: tenants and landlords.

- 1) Tenants will be able to send service requests to their landlord.
- 2) Landlords and tenants can view past and current jobs.
- 3) Landlords can approve and send job service requests to the Roopairs service provider network.
- 4) Both landlord and tenants will receive notifications when a Job or Job Request status changes.
- 5) Landlords can view reports and analysis on Jobs.

## 2.3 User Personas

Name:	Caretaker "Uncle" Carl Mahoe
Age:	51
Occupation:	Warehouse worker at Trader Joes
Years Caretaking:	3.5years
Hometown:	Monterey,CA
Character:	Rugged, Comedic, and Casual
Bio:	Carl's cousin Jim Wallet grew up in Monterey. Jim had acquired 5 houses and 2 small apartment blocks in the area. But Jim is already employed as an executive at Capital Insurance. So Carl lives a small, rundown house by the beach, rent free in return for acting as a caretaker for Jim's properties.
Goals/Needs:	Goal: trip to the Bahamas Goal: restore a Volkswagen bus or old motorhome as a fallback for retirement Needs: more time in his day, a way to minimize the time it takes to address tenant complaints and repair requests.

Frustrations/Fears/Challenges:	<p>Any costs for repairs eventually come out of Jim's pocket, but Carl knows he's expected to keep costs to a minimum and justify all repairs. He struggles to keep track of too many different jobs, so he prefers to work with the same one or two plumbers for all 7 properties. He keeps a bunch of hand-written and printed receipts in a few manila folders on his desk. Sometimes it takes him 20 minutes to find a certain paper, but he knows it's in one of those folders. He'd be furious if he lost a receipt and had to pay for something out of pocket.</p> <p>Doesn't know when repair requests will come in, so he doesn't feel like he can take long trips anywhere. Nowadays, he's never gone for more than 3 days at a time.</p>
Preferred Channels:	Cell Phone (Strongly prefers voicemail over text), Home Phone, yahoo Email
Motivations:	Gets to live by the beach rent free Has a pretty easy yet stable living situation
How can we help?	We can help Carl manage repair requests quickly, and when he wants to take trips, he'll be able to manage some of his responsibilities remotely. We also try to help Carl better organize his contacts and future messages, and even allow him to upload photos of physical documents if he prefers to keep his current system.

Name:	Tenant Anzaldúa Miyamoto
Age:	34
Occupation:	Desk Employee at Wells Fargo
Hometown:	Rio de Janeiro, Brazil
Character:	Nervous, Polite
Bio:	<p>Ms. Miyamoto is a Brazillian immigrant who has lived in several different countries throughout her life. She grew up with a Chilean father and Japanese mother adopting both languages from her parents, however, her English is very limited. She is currently in America hoping to gain her citizenship. She currently is renting a home in El Paso, Texas with her Haitian husband Dominique Fluer. She is raising 3 children, 2 of whom are her biological children and the remaining is the child of her husband's deceased brother.</p>

Goals/Needs:	<ol style="list-style-type: none"> <li>1. Goal: To gain U.S. citizenship.</li> <li>2. Goal: Live in California.</li> <li>3. Goal: Support family in Brazil after financial situation has stabilized.</li> <li>4. Need: Full recovery of security deposit after the time of her lease has ended.</li> </ol>
Frustrations/Fears/Challenges:	<ol style="list-style-type: none"> <li>1. She fears of losing a significant amount of her Security Deposit from damages.</li> <li>2. She currently struggles speaking English to most people in her area.</li> <li>3. She is raising 3 children whom are all under the age of 11 years.</li> <li>4. Her property's caretaker is often hostile with their family; this is not the case with her landlord.</li> </ol>
Preferred Channels:	Cell Phone, House Phone, Email
Motivations:	<ol style="list-style-type: none"> <li>1. Gain citizen so she can help her family back in Brazil.</li> <li>2. Supporting her husband to the best of her ability.</li> <li>3. Granting her children a chance at a stable life.</li> <li>4. Achieve the American Dream.</li> </ol>
How can we help?	<p>We can help by providing her the resource to easily report damages and request services to her current home. Since she is consistently occupied with her work and family, she finds it difficult to report these to her home's landlord. It is also pretty difficult for her to communicate with the landlord or property caretaker due to the language barrier so she resolves this issue with her oldest child of 10 years. Providing Mrs. Miyamoto with a platform to request these services can severely reduce the issues of the language barrier and can allow her to report and request services in a very efficient and convenient manner.</p>

Name:	Tenant Frat Boy Fred
Age:	21
Occupation:	Third year Business student
Years Renting:	3 years

Hometown:	San Diego, CA
Character:	Rowdy
Bio:	Fred is a third year at the University of Arizona who has been a part of his fraternity since his first semester at the school. He has lived in the house that him and his frat friends rent since his sophomore year. While the house isn't the fraternity's main house, parties still get thrown at the house and there are people coming through the house all the time. As such the house is rarely clean and the appliance all get heavily used (as they have been for years.)
Goals/Needs:	To graduate with above a 2.0 GPA and to party with his friends as much as possible before college ends. His goal is to graduate from U of A with above a 2.5 GPA, but he is not too sure if he can maintain his current party boy lifestyle and also get above a 2.5 GPA
Frustrations/Fears/Challenges:	Fred gets frustrated by how slow the dishwasher and washing machine work since there are so many people using them it would be nice if they were a bit faster. A challenge he faces is trying to find a time the washing machine isn't being used, or trying to fit his dishes in the dishwasher since it is always so full because it is so slow and can only do a few loads a day.
Preferred Channels:	Text (and only text)
Motivations:	He is motivated by the promise of a good job and eventually to take over at his dad's custom machinery company if he can graduate. He has made a deal with his dad that if he went to college and graduated with above a 2.0 GPA, then he would get a high ranking job right off the bat and eventually take over the company when his dad decided to retire.



How can we help?	We can help by giving Fred an easy way to request either servicing on the washing machine and dishwasher or a way to request upgrades in some of the old appliance at the house. This will only get used by Fred if it is entirely through an application so he doesn't have to take time out of his day to call people and organize a time to show his landlord the problems and deal with the service man and payments. It needs to be as simple as snapping a photo of the appliance maintenance or replacements are wanted, shooting the request off to the landlord with a few sentences about the problem and then being completely done (minus agreeing to a time with the service company) as the rest of the work will be done by the landlord
------------------	---

Name:	Landlord George Gomez
Age:	45
Occupation:	Landlord of Valencia Apartments
Years as Landlord:	10 years
Hometown:	Boulder, CO
Character:	Strict, punctual, serious
Bio:	George decided to move to San Luis Obispo, California with his wife when he was 25 years old with no kids. He wanted a job that wouldn't take too much effort from him to manage while also making a decent amount of money. He was offered the position as landlord for his organized and strict personality that the owners appreciated. He has been doing it would a decade now and now has a set of twins that will graduating high school and entering college soon.
Goals/Needs:	George wants to minimize his workload as much as possible. He wants to focus more time towards his family as his kids are leaving for college soon. He will also need to maximize his revenue per time worked in order to pay for their college tuition and fees.

Frustrations/Fears/Challenges:	At the beginning of the school year, each year, he is overwhelmed with paperwork and maintenance requests on the apartments. He also has to manage with maintenance requests on his own. His twin daughters used to help manage some office business but, with them gone, he will need more help soon and he does not want to hire someone new.
Preferred Channels:	Prefers call or email. Text is inappropriate between him and his tenants)
Motivations:	He is motivated to send his daughters to good schools while also keeping him and his wife financially stable for the upcoming year.
How can we help?	We can help by taking away the paperwork from his workload. We can also streamline tenant and landlord communication with community announcements, maintenance requests automation, and/or reports or issues.

Name:	Tenant Dwayne Martin
Age:	28
Occupation:	Assistant to the Regional Manager at Best Buy
Years Renting:	6 years
Hometown:	Newark,NJ
Character:	Diligent, focused, career-focused
Bio:	Dwayne was raised as a middle child of 7 children on a small farm house but always wanted to venture out and live in a more urban setting. With an interest in technology but unable to go to college, he started working at a Best Buy rising through the ranks hoping to one day be a manager. For many years after moving out of his parents house, Dwayne has always been plagued trying to find and maintain good housing in the city on a budget. He is now looking for anyway he can spend more time on his career and less on distractions.
Goals/Needs:	He wants to spend less time having to ask his forgetful landlord to perform repairs on his apartment and sometimes having to do the repairs himself. He is also annoyed by the fact he needs to take time off of work in order to show the repairmen what is broken in his apartment himself.

Frustrations/Fears/Challenges:	He is worried that the time he has to take off work in order to maintain his apartment is negatively affecting his opportunity to get a promotion. He is also frustrated having to call his landlord during work to remind her to find plumbers/electricians when necessary since otherwise she forgets and doesn't make service requests by the time he gets home from work.
Preferred Channels:	Cell phone or email
Motivations:	He is motivated above all to receive a promotion and eliminating any barriers getting in the way of this.
How can we help?	We can offer Dwayne a way to request repairs for his apartment that will ensure that the landlord won't forget what needs to be requested. We can also offer Dwayne a way for him to be able to go to work when a repair is being done by allowing him to show where in his apartment the repair needs to be done.

## 2.4 User Classes and Characteristics

Identify the various user classes that you anticipate will use this product. User classes may be differentiated based on frequency of use, subset of product functions used, technical expertise, security or privilege levels, educational level, or experience. Describe the pertinent characteristics of each user class. Certain requirements may pertain only to certain user classes. Distinguish the favored user classes from those who are less important to satisfy. You might use a table like this:

User Class	Description
Landlord	The landlord will be the user with the most permissions and actions available. They will be in charge of most of the transaction and may even initialize it on occasion instead of the tenant.
Care-Taker	The care-taker will be a middle man for the tenant and the landlord. If the landlord doesn't wish to partake in any of the work of hiring someone, the caretaker will be able to take over the role of a landlord.
Tenant	This is the lowest ranked of the user classes and all they are able to do is request repairs/replacements and help schedule what time the service company will come.

## 2.5 Operating Environment

The application will operate with React or ReactNative. Our frontend application will be using the Roopairs' Service Provider Network API as the backend and will also be integrated with the PolyRents environment built with React.

## 2.6 Design and Implementation Constraints

The Roopairs Landlord/Tenant application must be built using the Roopairs API. It must also be able to integrate well with PolyRent's website which is built on React. Naturally, this means our application will be restrained to using ReactJS or React Native. We must also make the application simple to use for older generations of people to be able to effectively use the user interface; a simple design is desired.

## 2.7 Assumptions and Dependencies

Since this application will now be integrated with PolyRents, we will assume (at this point) that there will be some integration with PolyRents API if provided access. We assume that PolyRents and Roopairs are going to addressing issues with landlord and tenant relationships. This applications primary purpose is to allow the two users a platform for accessing services. We assume that financial transactions will either be addressed by the service and landlord or that the transactions will be addressed via the Roopairs API.

# 3 Use Cases

## 3.1 Use Case 1: Repair a Home Owner's Appliance

Use Case ID:	1
Use Case Name:	Repair a Home Owner's Appliance
Created By:	Adam Berard
Last Updated By:	Eeron Grant
Date Created:	October 6, 2019
Date Last Updated:	October 8, 2019
Actors:	Landlord, Caretaker, Service Representative
Description:	A wealthy family's refrigerator has not been maintaining standard refrigeration temperatures. This has resulted in numerous food to spoil quicker than expected. Fortunately, the family is wealthy due to financial responsibility along with the fact that both parents are very successful realtors.

Preconditions:	<ol style="list-style-type: none"> <li>1. The refrigerator is unable to maintain standard refrigeration temperatures.</li> </ol>
Postconditions:	<ol style="list-style-type: none"> <li>1. The refrigerator is now functioning properly.</li> </ol>
Normal Flow:	<p>1.0 Caretaker Requests Service for Home</p> <ol style="list-style-type: none"> <li>1. Landlord instructs the live-in family assistant to sign up for Roopairs with him.</li> <li>2. System displays menu of available food items and the daily special.</li> <li>3. Family assistant signs up with Roopairs as a Caretaker.</li> <li>4. Family assistant requests service of choice on Roopairs.</li> <li>5. Landlord approves of the request and the service family assistant has chosen.</li> <li>6. The service accepts the requests and sends a representative to give the service.</li> <li>7. The service is successfully given.</li> <li>8. Landlord, family assistant, and the service representative mark the request as complete.</li> </ol>
Alternative Flows:	<p>1.1 Landlord Declines Caretakers Request (branch after step 4)</p> <ol style="list-style-type: none"> <li>1. Landlord declines family assistant's request for a service of choice.</li> <li>2. Return to step 3.</li> </ol> <p>1.2 Service Declines Request (after step 5)</p> <ol style="list-style-type: none"> <li>1. The service declines the request.</li> <li>2. Return to step 3.</li> </ol> <p>1.3 Service has Not Been Successfully Given Via Cancellation (after step 7)</p> <ol style="list-style-type: none"> <li>1. The service or Landlord cancel the service.</li> <li>2. Return to step 3.</li> </ol> <p>1.4 Task is never marked as completed (after step 7)</p> <ol style="list-style-type: none"> <li>1. Task is never marked as complete by any actor.</li> <li>2. Roopairs app will persistently prompt the users about the status of the job after an allotted time.</li> <li>3. If choice is never made, status of job will be set to canceled.</li> </ol>

Exceptions:	1.0.E.1 A ‘landlord’ cancelling the request and a service company requesting a cancellation fee.
Priority:	High
Frequency of Use:	Thousands of users per day.

### 3.2 Use Case 2: Communication Between Services, Landlords/Caretakers and Tenants.

Use Case ID:	2
Use Case Name:	Communication Between Services, Landlords/Caretakers, and Tenants.
Created By:	Eeron Grant
Last Updated By:	Eeron Grant
Date Created:	October 6, 2019
Date Last Updated:	October 8, 2019
Actors:	Landlord, Caretaker, Service Representative, Tenant
Description:	This use case is to give all parties involved with requesting, approving, and providing services a means of communication. This will properly keep all users informed and effectively reduce communication barriers.
Preconditions:	1. Tenant and Primary Caretaker already have chat room prior to the request.
Postconditions:	1. The chat box is completely closed after and given time deadline as determined by the landlord. 2. The chat box data is still preserved.
Normal Flow:	2.0 Service is Requested and Successfully Completed

	<ol style="list-style-type: none"> <li>1. Tenant sends request for service.</li> <li>2. Primary caretaker chooses service to provide.</li> <li>3. Service pends request.</li> <li>4. Service accepts requests and transaction is made.</li> <li>5. Service is opted to choose a representative for communicating with the primary caretaker and tenant.</li> <li>6. Representative is included into 3 new chat rooms: 1 including all three, 1 for the representative and tenant, and one for the representative and primary caretaker.</li> <li>7. When service has been marked as completed, chat box will remain open for a select amount of time defined by the primary caretaker.</li> <li>8. Once the allotted time has passed, the chat box closes. Data is still preserved.</li> </ol>
Alternative Flows:	<p>2.1 Job Transaction Completed but Primary Caretaker/Tenant Reports Problem With the Job (branch after step 7)</p> <ol style="list-style-type: none"> <li>1. Chat box remains open until issue is resolved?</li> <li>2. Once issue is marked as resolved, chat box remains open for allotted time.</li> </ol>
Exceptions:	<p>2.0.E.1 Service Denies Request (at step 4)</p> <ol style="list-style-type: none"> <li>1. Return to Step 2</li> </ol> <p>2.0.E.2 Service Denies Request (at step 4)</p> <ol style="list-style-type: none"> <li>1. Return to Step 1</li> </ol> <p>2.0.E.3 Landlord removes pending Service (any step after 4)</p> <ol style="list-style-type: none"> <li>1. Return to Step 2</li> </ol>
Includes:	None
Priority:	High
Frequency of Use:	Approximately Thousands of Users
Business Rules:	TBD
Assumptions:	Assume that 30 tenants and landlords already have chat-rooms amongst each other.
Notes and Issues:	TBD

### 3.3 Use Case 3: Landlord Approving and Sending Service Requests to Roopairs Network

Use Case ID:	3
Use Case Name:	Landlord Approving and Sending Service Requests to Roopairs Network.
Created By:	César Chacon
Last Updated By:	Eeron Grant
Date Created:	October 7, 2019
Date Last Updated:	October 8, 2019
Actors:	Landlord, Caretaker, Tenants
Description:	The landlord has received a service request to fix a refrigerator from one of his tenants. The landlord views the request and sends the requests to the Roopairs service providers network and receives back 5 recommendations.
Preconditions:	<ol style="list-style-type: none"> <li>1. The landlord and tenant have not yet communicated about the problem with the refrigerator.</li> </ol>
Postconditions:	<ol style="list-style-type: none"> <li>1. The landlord has sent the job requests to Roopairs and has chosen a service provider to handle the job.</li> </ol>
Normal Flow:	<p>3.0 Service is Requested and Successfully Completed</p> <ol style="list-style-type: none"> <li>1. Tenant sends request for service.</li> <li>2. Landlord/Caretaker receives a notification about the service request and sends it to the Roopairs network.</li> <li>3. Roopairs responds with 5 vetted service providers</li> <li>4. Landlord/Caretaker chooses a service.</li> </ol>
Alternative Flows:	<p>3.1 Landlord/Caretaker Cancels Tenants Request (branch after step 2)</p>
Exceptions:	None
Special Requirements:	<ol style="list-style-type: none"> <li>1. The tenant cancels the request for a service after the request has been made.</li> <li>2. The landlord denies a service request.</li> <li>3. The service provider may cancel/pause a job.</li> </ol>
Includes:	None
Priority:	Medium



Frequency of Use:	Per user, once or twice a year.
Business Rules:	TBD
Assumptions:	Assume that 30 tenants and landlords already have chat-rooms amongst each other.
Notes and Issues:	TBD

### 3.4 Use Case 4: Viewing the Status of a Service Job.

Use Case ID:	4
Use Case Name:	Viewing the Status of a Service Job.
Created By:	Tommy Bergmann
Last Updated By:	Eeron Grant
Date Created:	October 7, 2019
Date Last Updated:	October 8, 2019
Actors:	Landlord, Caretaker, Tenant
Description:	Being able to see the status of a service has many applications. From a tenant eager to see the status of their washer to a landlord wanting to know if the servicemen is about to arrive to the destination of the request.
Preconditions:	1. The primary actor does not know the progress of their service request.
Postconditions:	1. The primary actor knows exactly which step of the process the service request is on.
Normal Flow:	4.0 User Successfully Views the Status of their Request 1. The primary actor logs into their Roopairs account. 2. The actor navigates to their active requests. 3. The actor selects the request they wish to view. 4. From this page, the actor views precise status of the request. 5. The actor takes action if necessary.
Alternative Flows:	4.1 A Completed Service is Viewed (branch after step 3) 1. From step 3 of 4.0, the service request is marked as completed.
	4.2 A Service is Canceled (branch after step 3)

	1. From step 3 of 4.0, the service request is marked as canceled.
Exceptions:	4.0.E.1 Service Denies Request (at step 4) 1. If the job is paused or cancelled for any reason, the landlord should be notified by their preferred channel of communication of this and the status of the job should be updated to “Cancelled”
Special Requirements:	1. Request is canceled. 2. Roopairs displays which party canceled
Includes:	None
Priority:	Medium
Frequency of Use:	At least once per a service request
Business Rules:	TBD
Assumptions:	TBD
Notes and Issues:	TBD

### 3.5 Use Case 5: Caretaker and Tenant Repair an Appliance

Use Case ID:	5
Use Case Name:	Caretaker and Tenant Repair an Appliance
Created By:	Sarah MacDougall
Last Updated By:	Sarah MacDougall
Date Created:	October 8, 2019
Date Last Updated:	October 9, 2019
Actors:	Caretaker, Landlord, Service Representative, Tenants
Description:	The landlord has designated his caretaker to manage service requests on his behalf while he is out of the country. The caretaker received a service request to fix a toilet from one of his tenants. The caretaker views the request and sends the requests to the Roopairs service providers network and hires their favorite plumber.
Preconditions:	<ol style="list-style-type: none"> <li>1. The landlord has granted the caretaker repair privileges.</li> <li>2. The landlord won't be able to check their phone for a while.</li> <li>3. The tenants and caretaker have not yet communicated about the problem with the toilet.</li> <li>4. The landlord has a favorite plumber he prefers to hire.</li> </ol>

Postconditions:	<ol style="list-style-type: none"> <li>1. The caretaker and service representative have processed their job request through Roopairs.</li> <li>2. The landlord can view the updated status of the job / job request and see their conversation and receipts.</li> </ol>
Normal Flow:	<p>5.0 Service is Requested and Successfully Completed</p> <ol style="list-style-type: none"> <li>1. Tenant sends request for service.</li> <li>2. Caretaker receives a notification about the job request.</li> <li>3. The Caretaker selects his favorite plumber and sends them a job request through the repairs network.</li> <li>4. The Service Representative accepts the job request, and the Caretaker can see the job request has updated to a job has been started.</li> <li>5. The Caretaker is notified when the job is completed and pays the Service Representative through Roopairs.</li> <li>6. The landlord finally checks their phone again and has a notification about a new completed job, and is given a description of the job request, the service representative hired, and a receipt from the service company.</li> </ol>
Alternative Flows:	<p>5.1 Caretaker Denies Tenants' Request (branch after step 2)</p> <ol style="list-style-type: none"> <li>1. The Caretaker starts a chat with the Tenants, saying that he used a plunger and that the toilet appeared to be working as good as new.</li> <li>2. The landlord finally checks their phone again and has a notification about a denied job request, is given a description of the job request, and is given access to the related chat.</li> </ol>
	<p>5.2 Service Representative Fails to complete the Job Request (branch after step 4)</p>

	<ol style="list-style-type: none"> <li>1. The Caretaker is notified that the job's status has been stopped and sees that the Service Representative has started a chat, saying that he is unable to repair the toilet and that they will need a new one.</li> <li>2. The Caretaker responds, saying that he will wait for the landlord to decide if he is fine with replacing the toilet instead of repairing it.</li> <li>3. The Caretaker responds, accepting the new terms of the Job. (resume from step 5)</li> </ol>
Exceptions:	None
Special Requirements:	<ol style="list-style-type: none"> <li>1. The tenant cancels the request for a service after the request has been made.</li> <li>2. The landlord denies a service request.</li> <li>3. The service provider may cancel/pause a job.</li> </ol>
Includes:	None
Priority:	Low
Frequency of Use:	Once every couple years.
Business Rules:	TBD
Assumptions:	Assume that the landlord has already granted the caretaker landlord privileges and that the caretaker and tenants already have chat-rooms amongst each other.
Notes and Issues:	TBD

## 4 System Features

### 4.1 System Feature 1

Roopairs Service Request and Approval

#### 4.1.1 Description and Priority

A high priority feature that must be included. This feature allows users to request services that will get approved by a higher authority (landlord/caretaker). Once approved, the system will send the request to a Service provider in which they will choose to provide the service. Once service has been provided, the landlord and service provider will be prompted to complete the status of the job.

#### 4.1.2 Stimulus/Response Sequences

TBD

### 4.1.3 Functional Requirements

1. REQ-1: Landlords should be able to view their current residents. \*Sarah
2. REQ-2: Landlords should be able to approve and send service requests to Roopairs network. \*Cesar
3. REQ-3: Landlords should be able to triage (rank urgency) service requests from tenants. \*Cesar
4. REQ-4: Landlords should be able to search for and hire service companies for approved repair requests. \*Sarah
5. REQ-5: Landlords should be able to open conversations with hired service companies. \*Sarah
6. REQ-6: Landlords should be able to open conversations with their tenants in the app. \*Adam
7. REQ-7: Landlords and residents should be able to view real time status of Jobs and JobRequests. \*Sarah and Cesar
8. REQ-8: Landlords and tenants should be able to view current and past service jobs.
9. REQ-9: Landlords and tenants should be notified when a Job or JobRequest changes status. \*Sarah and Cesar
10. REQ-10: Landlords should be able to cancel a paused job \*Eeron
11. REQ-11: Landlords should be able to log appliances (oven, fridge, toilet, gutters, garage door), including photos, their location, a description. \*Sarah
12. REQ-12: Landlords should be able to review and see reviews of hired service companies. \*Sarah
13. REQ-13: Landlords should be able to grant sub-landlord privileges to other accounts for their caretaker(s). Landlords should be able to specify which privileges to grant. \*Sarah
14. REQ-14: Landlords should be able to view any conversations and receipts from Jobs managed by their caretakers. \*Sarah
15. REQ-15: Landlords should be able to make the payments powered by Roopairs through the application. \*Adam
16. REQ-16: Landlords should be able to view reports and analysis on Jobs. \*Sarah and Cesar

17. REQ-17: Landlords should be recommended at certain points throughout the hiring process be able to send pre-filled out messages to their tenants. For example, after deciding on a price a prefilled message could come up that says “Update: Larry’s Lawnmower Fixers have been selected as the service company that will fix the lawn mower you requested. What days work best for you out of: [list of available days].” \*Adam
18. REQ-18: If a tenant specified a new appliances in a JobRequest, the Landlord should be able to choose to save that new appliance or update a pre-existing appliance. \*Sarah
19. REQ-19: Tenants should be able to send JobRequests for appliances to their landlord, including photos and descriptions. \*Sarah
20. REQ-20: Tenants should be able to select an existing appliance in their JobRequest or be able to create / suggest / specify their own appliance. \*Sarah
21. REQ-21: Tenants should be able to communicate with the service company to set up a time for them to come. \*Adam
22. REQ-22: Tenants should be able to request replacements as well as upgrades from their landlord for appliances. Or at least have that as an option to select when you request maintenance. \*Adam
23. REQ-23: Tenants should be able to track jobs as they are in progress and receive updates from the landlord/caretaker. \*Adam
24. REQ-24: Tenants should be able to rate or comment on different aspects of the service companies performance such as punctuality, cleanliness, efficiency, noise, etc. \*Adam

## 4.2 System Feature 2

Roopairs Landlord, Tenant, and Service Representative Communication via Roopairs Messaging

### 4.2.1 Description and Priority

A medium-high priority feature that has much value to be included. This feature allows landlords, tenants, and service representatives to have a means of communication via the Roopairs platform during the appropriate contexts. This will keep communications about housing and services within the application.

### 4.2.2 Stimulus/Response Sequences

TBD

### 4.2.3 Functional Requirements

1. REQ-1: Landlords should be able to view their current residents. \*Sarah
2. REQ-6: Landlords should be able to open conversations with hired service companies. \*Sarah
3. REQ-10: Landlords should be able to cancel a paused job \*Eeron
4. REQ-12: Tenants should be able to select an existing appliance in their JobRequest or be able to create / suggest / specify their own appliance. \*Sarah
5. REQ-15: The landlord should be able to grant sub-landlord privileges to other accounts for their caretaker(s). Landlords should be able to specify which privileges to grant. \*Sarah
6. REQ-16: Landlords should be able to view any conversations and receipts from Jobs managed by their caretakers. \*Sarah
7. REQ-18: Landlords should be able to view reports and analysis on Jobs. \*Sarah and Cesar

## 5 External Interface Requirements

### 5.1 User Interfaces

TBD

### 5.2 Hardware Interfaces

TBD

### 5.3 Software Interfaces

TBD

### 5.4 Communications Interfaces

TBD

## 6 Nonfunctional Requirements

### 6.1 Performance Requirements

1. Our application should have a quick response time with 5 recommended service providers to the landlord per Job Request. \*Cesar
2. Our application must use the Roopairs API \*Eeron

### 6.2 Security Requirements

1. Our application must handle payments securely and safely so that they are not a security risk. \*Adam
2. Our application must query databases securely. \*Sarah
3. Our application must limit visibility of passwords fields. \*Sarah

### 6.3 Software Quality Attributes

1. Our application should be easy to navigate and understand. \*Thomas

## A Issues List

This is a dynamic list of the open requirements issues that remain to be resolved, including TBDs, pending decisions, information that is needed, conflicts awaiting resolution, and the like.

- 1) Should the application software be developed with React or React Native?
- 2) Will there be a user interface for the service providers?

1.2 Document Conventions

1.2 Intended Audience and Reading Suggestions

1.5 References

5.1 User Interfaces

5.2 Hardware Interfaces

5.3 Software Interfaces

5.4 Communications Interfaces