Product Requirements

Team   X-Mates

Brief problem statement

These days, the Internet has become very popular among people from different ages around the world. The Internet helps people to communicate, connect with each, share knowledge, and even shop online. All the tools provided by the Internet make the share of information easier to its users. However, the physical objects, such as tools, represent a barrier that the Internet cannot break down.

We represent a funding group (**Investiny Corp.**) contracted to make applications for the advantage of communities all around the nation. The product we present is called **Tool Share**. The main idea of **Tool Share** is to empower neighbors in a community to have the capability to share the common tools that most people use. The effective use of the application makes the task of sharing and obtaining tools simple to anybody. The **Tool Share** product is planned to improve and develop the communities by providing a simple system for sharing items between neighbors. We envision this to primarily comprise of tool exchanges however the implementation must be easily expanded to have items of various types.

We want a product which its emphasis is on simple of use and ease of navigation. The system provides capability for users to arrange and communicate with other users based on their preferences through email. Also, the system displays statistics on Tool Share's user activities.

The team will create a web application of tools sharing to help neighbors in a community to borrow and lend tools from each other which will be based on the zip codes. The web application supports people in the community in their area to communicate with their neighbors to find the proper tools they need at their home. Users are able to edit their personal account and their information and post tools on the website. Borrower requests will go to the owner who has the tools at his/her home and the owner can approve the requests.

Stakeholders

Investiny Corp. Board of Directors

The board of directors is the governing body for the project and determine the mission and purpose of the project. Furthermore, the board of directors is securing adequate financial requirements for the project which includes product costs and funding to fulfil project mission. One of the duties of the board of directors is that ensuring effective project planning and focusing to succeed the project forward to meet the mission. However, the board of directors is not including in implementation and planning of the project. There are numbers of roles for the board of directors is that giving approval for project deliverables, supporting the product with plans and strategy and assigning the project team members.

Investiny Corp. Product Owner

Product owner is the responsible for understand the customers with their needs, project success and he/she has to be empowered to make the necessary decisions regarding to product. The product owner is the representative of the customer for the Tool Share product requirements. In addition, the product owner has a vision of where to take the product as well as has the responsibility to support the project along with the board of directors, helps to facilitate product decisions. There are some of the responsibilities of the product owner including:

- Tacking the project progress.
- Collecting and analyzing data to validate the goal.
- Defining the features of the product.
- Collaborate with the development team.
- Determine what features will be in the product release.

Software Engineering Team

Software Engineering Team is the responsible to keep monitoring the product daily regarding of the performance and progress related to software product's life-cycle. Some of their responsibilities are:

- Defining the project requirements.
- Implementation and execution for the project.
- Product testing and evaluation.
- Specify the responsibilities and tasks between team members.
- Planning and organizing the project.

Beta Testing Team

The Beta Testing Team will participate with project in later stages to conduct acceptance testing in order to determine if the project requirements are met. Also, they will be responsible for testing the application, this will be done in the last steps of the production in order to satisfy the customer acceptance test for the company. The team will assesses the product from different points of view and provide feedback on product release.

Users

The target user:

- Must have previous experience with the use of computers and browsing the internet. Should have filled out online forms. May have experience purchasing and selling products online.
- Must have an electronic device, preferably a computer, with an active internet connection and an updated browser.
- Must be willing to share personal information such as address and some sort of contact information such as email address or telephone number.
- Must be interested in making a better neighborhood by borrowing and lending tools of frequent use with other neighbors who live in the same area.
- Must be willing to serve as a share zone manager in case it is the first time a zip code is used in the system.
- Must periodically check the system in case a neighbor is requesting to borrow a tool.
- Must always provide genuine and current information about the tools to be shared and about the personal information that is shared.

System requirements

For the application, our team expresses system requirement as the following:

- The project shall be using Python version 3.4.3 as programming language.
- The project shall be using Django version 1.8.3 as a framework.
- The project shall be using SVN as a source controlled.
- The project shall be suing SQLite 3.7.11 as a back-end database.
- The project shall be compatible with the most recent web browsers versions.
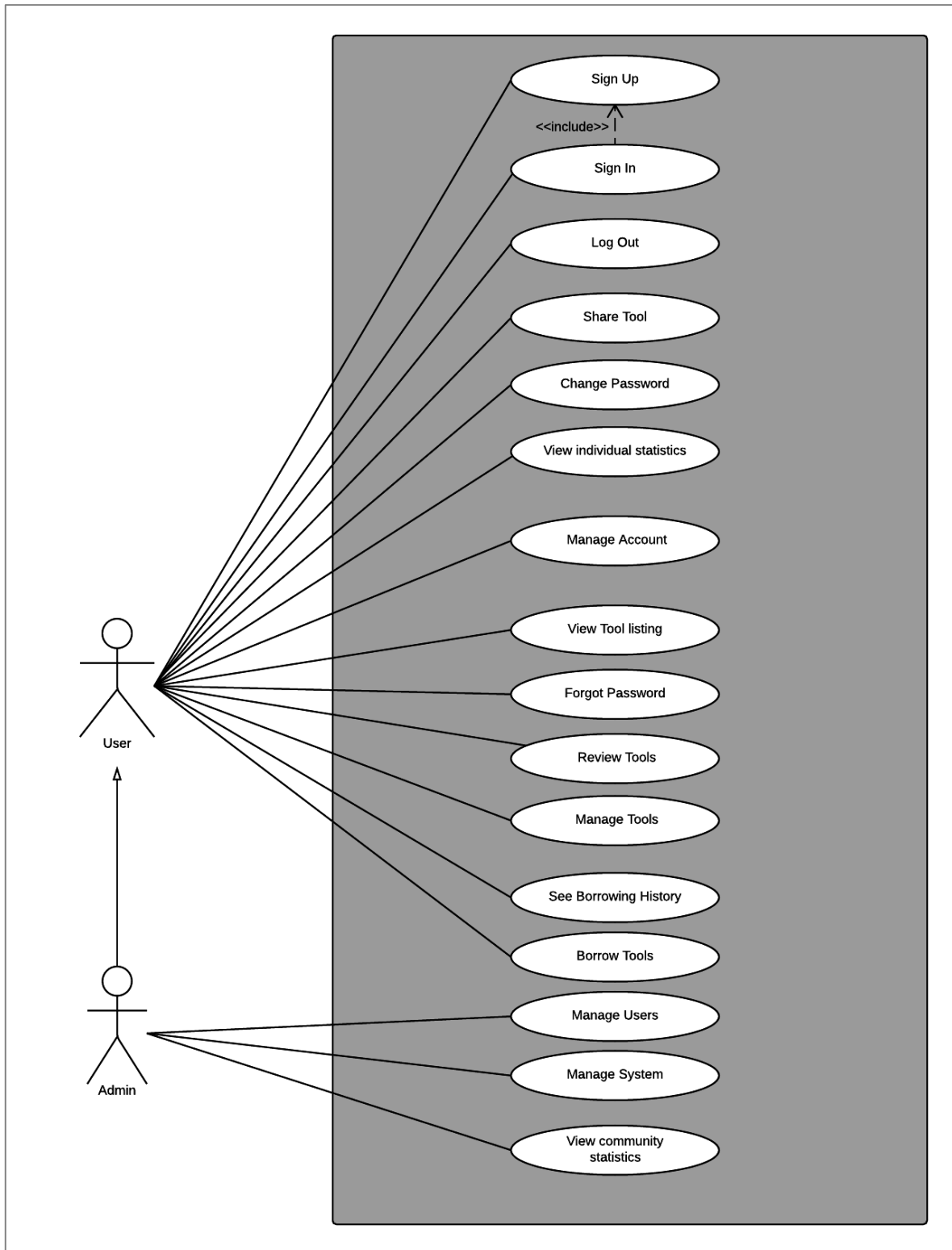
Feature requirements

No.	User Story Name	Description	Release
1	Registration	User shall provide personal information and preferences to the System upon registering and becoming a user. (For example: Last name or Pickup Arrangements). System will create a new Share Zone upon registration of User with previously unregistered zip code. Upon registration System will associate user with an already created Share Zone based on zip code.	R1
2	Account Management - change personal information	User shall be able to change personal information after registration (for example: change address). System will warn User if changing of community and effect any necessary changes to the item list.	R1
3	Account Management - change user preferences	User shall be able to change preferences after registration (for example: pickup arrangements).	R1
4	Community Shed creation	System will create a new Community Shed upon registration of User with previously unregistered zip code. A Shed has a physical location where tools from several Users can be stored. Shed creator becomes Coordinator of said shed.	R1
5	Tool Management – registration	User can register a tool by providing items information. (For example: Picture, Category, Name, Description, Special instructions, etc.). System will require a unique field to distinguish between similar tools (for example: two laser blasters but mine has "Buzz A 113" edged on its handle).	R1

6	Sharing – from Home	User can set a previously registered tool to be shared from home. Tool cannot be shared from two places simultaneously. User must physically have possession of tool prior to sharing it.	R2
7	Sharing – from Community Shed	User can set a previously registered tool to be shared from a Community Shed. Tool cannot be shared from two places simultaneously. User must physically move the tool to Shed prior to being allowed to share it.	R2
8	Sharing – change location of tool	User can change a previously registered tool to be shared elsewhere.	R2
9	Sharing – change availability	User can change availability of a tool (for example: on blackout dates when he/she will be using the tool, or be away/unwilling).	R2
10	Sharing – approving a borrower	System will notify User upon a request to borrow his/her tool. User owner of tool must approve the borrower when his/her tool is not at a Community Shed. System will notify borrower of decision by owner and update tools status if necessary.	R2
11	Tool Listing – availability	User can request from System a list of all tools and their availability. List shall be sorted by System. Only tools in User's Share Zone will be visible.	R2

12	Borrowing - request	User can select to borrow a tool if available. User owner of tool will need to "Approve" or "Reject" the request to borrow unless tools is in a Community Shed were it is always automatically approved. Upon rejection, owner of tool must provide a small reason for "Reject". System will send notification email to borrower including reason or message where applicable.	R2
13	Borrowing – arrangements	User sharing a tool.	R2
14	Borrowing - returning	Borrower will return tool pickup location unless otherwise agreed with tool owner. User owner of tool will need to notify to the System that tool has been "Returned" unless request to borrow was made from a Community Shed were it will be notified by Shed Coordinator. System will update availability of a returned tool.	R2
15	Tool Management – deactivation and reactivation	User can deactivate a tool they previously added to the System. The tool is not shown by default, but the system still retains the information about the tool. A tool may be re-activated at any time. System will require confirmation in case of possible conflicts.	R1
16	Tool Management – Status	User owner of tool can request from System a list of registered owned tools and their status.	R1
17	Community Statistics	User can request a list of statistics for their specific Share Zone. Upon request System will verify association and display such listing. Statistics that may be included: - most active lenders - most active borrowers - most used tools - most recently-used tools	R2
18	Individual Statistics	User can request a list of statistics for their tools. Upon request System will verify association and display such listing. Statistics that may be included: - most used tools - most recently-used tools	R2

19	Notification System	User can be notified for his/her shared tools that are requested by other users. User can see an icon with all the notifications received. The system will notify the borrower about the decision of the owner (if the request was approved of rejected).	R2
20	Review tools	User can rate the tools that he/she returned. This will help other users take a better decision when they are going to borrow a tool. System can display the reviews of the users who previously used the tool.	R2
21	Log Out	Users can log out from the system. This terminates the session and they cannot have access to their account.	R1
22	Change password	Users can change the password they use to access the system. System allows user to change their password if they decide to change it.	R2
23	Forget Password	Users are able to reset their password in case they forgot it. System allows user to change their password by sending an email with a new password to log in the System so they can change the password.	R2
24	Borrowing History	Users can see the tools they have borrowed, the time, and the users who lent them the tool. Users can also see the tools they have lent and the users who have borrows their tools.	R2

Use case diagram

Use case description

Use Case Number:	UC-01
Use Case Name:	Sign Up
Overview:	User shall provide personal information and preferences to the System upon registering.
Actor(s):	User
Pre-condition(s):	- System has been setup and configured. - System is running and open for registrations. - Registrant has accessed website via URL.

Scenario Flow:	**Main (success) Flow:**
	1. User clicks Join Us from the home page.
	2. System requests personal information.
	3. User provides personal information.
	4. System verifies required information is provided.
	    • If information is invalid System displays message. Return to Step 2.
	5. System requests user's preferences.
	6. User provides user preferences and clicks Sign Up button.
	7. System verifies required information is provided.
	    • If information is invalid System displays message. Return to Step 5.
	8. If user's zip code is new to the System, system requests information to create new Share Zone and Community Shed.
	9. User provides information about the new shared zone and community shed.
	10. System verifies required information is provided.
	    • If information is invalid System displays message. Return to Step 8.
	11. System sends confirmation email of registration.

Alternate Flows:	After Step (2) System will display the option to cancel the registration process. The following steps would occur: 1. User selects option to cancel during registration. 2. System returns to main screen.
Post Condition:	User has completed registration successfully. System stores user's information.

Use Case Number:	UC-02
Use Case Name:	Sign In
Overview:	User provides credentials to Sign In on the system.
Actor(s):	User
Pre-condition(s):	- User shall be registered in the system. - User shall be in the Sign In page.
Scenario Flow:	**Main (success) Flow:** 1. User provides email and password and clicks Sign In. 2. System verifies the credentials. • If information is invalid System displays message. Return to Step 1. 3. System redirects user to Dashboard.
Alternate Flows:	Not applicable
Post Condition:	User has been Signed In to the system successfully.

Use Case Number:	UC-03
Use Case Name:	Manage Account
Overview:	User shall be able to change personal information after registration, for instance, address and password. Also, User shall be able to change preferences such pickup arrangements.
Actor(s):	User
Pre-condition(s):	- User must be Signed In to the system.
Scenario Flow:	**Main (success) Flow:** 1. User clicks My Profile from the menu. 2. System takes the user to My Profile page. 3. User clicks Update button. 4. System takes the user to Update Profile page and requests user personal information. 5. User inputs the desired changes and clicks Save button. • If information is invalid System displays message. Return to Step 4. 6. System saves changes and redirects to My Profile page.
Alternate Flows:	After step (3) user selects to cancel changes of account information. 1. System redirects user to My Profile page. After step (5) user inputs a zip code and there isn't a shared zone with that zip code. 1. System redirects user to Create Shared Zone page.
Post Condition:	User has saved the personal information in the system successfully.

Use Case Number:	UC-04
Use Case Name:	Manage Tools
Overview:	User shall be able to register the tools that they want to share and to set the pickup time for the tool. User can deregister a tool they previously added to the System setting the status to unavailable.
Actor(s):	User
Pre-condition(s):	- User must be Signed In to the system. - The tool is physically available.

Scenario Flow:	**Main (success) Flow:**
	1. User clicks My Tools from the menu.
	2. System displays My Tools page.
	3. User can click on Add New Tool or click on one of the tools from the list of tools to modify it.
	   • If user clicks Add New Tool the system will prompt the user to enter the information for the new tool.
	   • If the user clicks on one of the existing tools from the list of tools, the system will show the user the information about that tool.
	4. User provides the tool information and clicks Save or Update. If
	5. System redirects user to My Tools page.

Alternate Flows:	After Step (3) user clicks Cancel button. 1. System redirects user to My Tools page.
Post Condition:	User has saved the information about the tool in the system successfully and the user shall be able to see the new added tool or the changes that have been made.

Use Case Number:	UC-05
Use Case Name:	Share tools
Overview:	The User is sharing his/her tool from house or from the community shed. They can share only from one place. The shed zone coordinator can change the status of the tool if it is broken or returned or missing.
Actor(s):	User
Pre-condition(s):	- User must be Signed In to the system. - The tool is registered in the user-owner's tool list. - Tool shall not have unresolved status.
Scenario Flow:	**Main (success) Flow:** 1. The user selects Tool sharing options. 2. System shows the user's list of registered tools available for sharing. 3. From the list of available tools, user selects the tool that he/she wants to share or user changes the current location of shared tool. 4. System confirms the changes made by the user.
Alternate Flows:	After step (3) user selects to cancel the tool to share. 1. System redirects the user to the Dashboard.
Post Condition:	The system saved the new sharing information and it is available for the borrowers.

Use Case Number:	UC-06
Use Case Name:	View community statistics
Overview:	User shall be able to request a statistic of his/her shared zone. System uses previous reservation to create a list of statistics for user requests. User shall also be able to see other users' individual statistic.
Actor(s):	Admin
Pre-condition(s):	- User must be Signed In to the system.
Scenario Flow:	**Main (success) Flow:** 1. User selects statistic option to view statistic. 2. System displays the available statistic.
Alternate Flows:	Not applicable.
Post Condition:	System displays to user the available statistic page.

Use Case Number:	UC-07
Use Case Name:	View individual statistics
Overview:	User shall be able to request a statistic of his/her tools. System uses previous reservation to create a list of statistics for user requests.
Actor(s):	User
Pre-condition(s):	- User must be Signed In to the system.

Scenario Flow:	**Main (success) Flow:**
	    1. User selects statistic option to view statistic.
	    2. System displays the available statistic.

Alternate Flows:	Not applicable.
Post Condition:	System displays to user the available statistic page.

Use Case Number:	UC-08
Use Case Name:	View tool Listing
Overview:	User shall be able to search tools and view tools detail based on user's share zone.
Actor(s):	User
Pre-condition(s):	- User must be Signed In to the system.

Scenario Flow:	**Main (success) Flow:**
	    1. User clicks on Borrow option from the menu.
	    2. System displays the list of available tools.
	    3. User selects a specific tool to see the details.
	    4. System displays the details of the selected tool.

Alternate Flows:	Not applicable
Post Condition:	System displays to user the tool listing page.

Use Case Number:	UC-09
Use Case Name:	Borrow Tools
Overview:	Borrower shall select a tool from the available items and wait until his/her requests is approved by the owner to pick up the tool. Once the borrower is done using the tool, he/she shall return it to the pickup location unless a different returning location is specified.
Actor(s):	User
Pre-condition(s):	- User must be Signed In to the system. - User must be in tool listing page.
Scenario Flow:	**Main (success) Flow:** 1. Borrower selects a tool to borrow and submits a borrowing request. 2. The system shall notify the owner of the tool and inform the borrower that the request was sent. 3. Owner approves the request. 4. System shall notify the borrower that the borrowing request was approved and shall change the availability status of the tool to unavailable. 5. When the borrower returns the tool to the owner, the owner shall change the status of the tool to available.
Alternate Flows:	After step (2) user-owner rejects the borrowing request. 1. System prompts the owner to enter a reason for rejecting the request. 2. Owner gives a reject reason to the system and submits. 3. System shall notify the borrower that his/her request was rejected and shall display the reason of rejection.
Post Condition:	System shall display the tool with an available status to be borrowed again.

Use Case Number:	UC-10
Use Case Name:	Review tools
Overview:	Borrower shall be able leave a review for a tool previously borrowed.
Actor(s):	User
Pre-condition(s):	- User must be Signed In to the system. - User has previously returned a borrowed tool. - User owner must have changed the status of the tool to available.
Scenario Flow:	**Main (success) Flow:** 1. System shall notify the user that a new review of the tool he/she returned is available. 2. The user shall select the tool review displayed by the system. 3. The system shall prompt the user with a form to fill out. 4. The user shall leave a comment and a rating for the review and submits the review. 5. The system shall notify the user that the review was successfully saved.
Alternate Flows:	After step (1) user decides not to leave a review. 1. System shall not display the notification of the tool review to the user.
Post Condition:	System shall display the review of the tool on the tool listing.

Use Case Number:	UC-11
Use Case Name:	Manage System
Overview:	User shall have administrator privileges. The user shall be able to update information about the registered users, tools, shared zones, and community sheds. User shall also be able to disable registered users, tools, shared zones, and community sheds.
Actor(s):	Admin
Pre-condition(s):	- User must be Signed In to the system.
Scenario Flow:	**Main (success) Flow:** 1. User selects what he/she wants to update or disable (users, tools, shared zones, and community sheds). 2. System displays the list of elements. 3. User clicks on a specific element. 4. System displays the details about the selected element. 5. User updates the information about the selected element. User can update the details or disable the element. User submits the changes. 6. System confirms that the changes were saved and redirects the user to the list of the elements.
Alternate Flows:	After step (4) user selects to cancel the tool details. 1. System redirects the user to the administration page.
Post Condition:	System saves all the changes made by the user.

Use Case Number:	UC-12
Use Case Name:	Manage User
Overview:	The user shall be able to update users' information. User shall also be able to grant admin privileges to other users.
Actor(s):	Admin
Pre-condition(s):	- User must be Signed In to the system.
Scenario Flow:	**Main (success) Flow:** 1. User selects the user administration option. 2. System displays the list of users. 3. User clicks on a specific user. 4. System displays the details about the selected user. 5. User updates the information about the selected user and submits the changes. 6. System confirms that the changes were saved and redirects the user to the list of the elements.
Alternate Flows:	After step (4) user selects to cancel the tool details. 1. System redirects the user to the administration page.
Post Condition:	The system has saved all the changes.

Use Case Number:	UC-13
Use Case Name:	Log out
Overview:	The user shall be able to log out from the system.
Actor(s):	User
Pre-condition(s):	- User must be Signed In to the system.
Scenario Flow:	**Main (success) Flow:** 1. User clicks the Log Out option from the menu. 2. System redirects user to Sing In page.
Alternate Flows:	Not applicable
Post Condition:	The user has logged out from the system successfully.

Use Case Number:	UC-14
Use Case Name:	Update password
Overview:	The user shall be able to update current password in the system.
Actor(s):	User
Pre-condition(s):	- User must be Signed In to the system. - User shall be in the Update Profile page.
Scenario Flow:	**Main (success) Flow:** 1. User clicks the Change Password button. 2. System redirects user to Change Password page and prompts user to enter the new password. 3. User provides new password and clicks Save button. 4. System verifies required information is provided. • If information is invalid System displays message. Return to Step 2. 5. System saves changes and redirects user to My Profile page.
Alternate Flows:	After step (2) user selects to cancel the tool details. 1. System redirects the user to My Profile page.
Post Condition:	The user has changed password in the system successfully.

Use Case Number:	UC-15
Use Case Name:	Reset Password
Overview:	The user shall be able to set a new password in the system.
Actor(s):	User
Pre-condition(s):	- User must have previously signed up in the system. - User must be in the Sign In page

Scenario Flow:	**Main (success) Flow:**
	1. User clicks Forgot Password option.
	2. System redirects user to Forgot Password page and prompts user to enter the email.
	3. User provides email and clicks Reset Password button.
	4. System verifies the email provided.
	   • If email is invalid System displays message. Return to Step 2.
	5. System sends an email with a link to the user to reset the password.
	6. User clicks the link in the email.
	7. System prompts the user to enter new password.
	8. System verifies the information provided.
	   • If information is invalid System displays message. Return to Step 7.

Alternate Flows:	After step (2) user selects to cancel the tool details. 1. System redirects the user to the home page.
Post Condition:	The user has reset password in the system successfully.

Use Case Number:	UC-16
Use Case Name:	See Borrowing History
Overview:	The user shall be able to see a history of borrowed and lent tools.
Actor(s):	User
Pre-condition(s):	- User must be Signed In to the system.
Scenario Flow:	**Main (success) Flow:** 1. User clicks History option from the menu. 2. System displays the list of previous borrowed/lent tools. 3. User selects a specific tool to see the details. 4. System displays the details of the selected tool.
Alternate Flows:	Not applicable.
Post Condition:	System displays to user the borrowing history page.