



#AGiveAwayApp

Application Name: **#GiveAwayApp**

Team Name: **Sunshiners**

Program Name: **Hack FSE using Java Stack**

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1.0 Introduction

#GiveAway application comes with moto of bringing smiles and sense of contentment to its users through Giving Away their belongings to benefit the needy.

It's a responsive/mobile-friendly website. With the help of this application, users will register and post registration they will be able to put in requests for offering their belongings. At the time of putting in the handout request on the website, the user will have to fill in details about their belonging along with their pictures clicked by them. The user has option to select at which Collection/Inventory Centre they will submit their belongings. These Collection/Inventory Centers can be treated as different Cognizant's premises present across our country. These requests can be approved/rejected by application administrators. Once their requests are approved by application administrators upon scrutiny, users will get a mail mentioning date-time frame during which they can submit their belonging.

User can view from their dashboard, the list of offering requests they have placed and their current status. In other words, all the history details for the user will be readily available in user's dashboard.

Outreach volunteers will be collecting the items from Collection/Inventory Centers, and will be forwarding them to the needy Schools/NGOs with whom they are engaged. To benefit the needy, the choice of selection of School kids, the School or any NGO is completely under the periphery of Outreach members and is beyond the scope of this application.

In this flow of items from volunteering user, to Collection/Inventory Centre, to Outreach Volunteer, and then to needy Schools/NGOs, at every instant the volunteering user will be updated with the current status in form of email. The latest status can be viewed by the user in the dashboard by logging into the application.

1.1 Purpose

Q: Why should we have this #GiveAwayApp?

This application is targeted to increase the reach of Outreach. It brings people from all over India, even outside from our organization, to come forward and contribute in the extraordinary program for noble cause called 'Outreach' by Cognizant.

The moto of developing this application is to avail a single platform where people can give their belongings and the outreach volunteers can make this reach to the places where they are needed.

This application aims to surpass the reach of our 'Outreach' program and bring people from outside of Cognizant, enabling them to donate their belongings for a noble cause.

User can register and post registration they will be able to put in requests for offering their belongings view





from their dashboard, the list of offering requests they have placed and their current status. In other words, all the history details for the user will be readily available in user's dashboard.

Outreach volunteers will be collecting the items from Collection/Inventory Centers, and will be forwarding them to the needy Schools/NGOs with whom they are engaged.

The application also aims to provide engagement programs where interested users can volunteer for Outreach events. They will be able to see what all events are about to happen in the home page itself.

This document will help a large group of people to understand the design of our application and also the variety of roles involved with different set of tasks enabled for them. It will give a clear picture of end to end flow with the idea of who is offering the product who is requesting to receive the item, who are approving the request. This document will let users know what all technical approaches we have taken while developing on a high level.

1.2 Scope

Q: Okay! So what's the scope exactly for this #GiveAwayApp?

The scope is the limit of skies, where we put in pieces together to bring the rain of happiness for needy people.

#GiveAwayApp Application comes with a purpose of benefitting the society at all levels. One who are enough eligible to donate, others who want to benefit the society by taking the help who are capable enough and providing to that level of society who lacks.

Based on the objective of the application, the application will support users with different roles. For different roles/type of users, user interface offered by the application will be different.

List of type of users/roles that application will be supporting are:

Volunteering User: Register, Post Register Will Request to Offer items, Show the history activities

Outreach Volunteer User: Register, Post Register Will Request to collect items

Application Administrator User: Approve/Reject User, maintain to and fro of Item from receiving till making it available to the outreach volunteer, updating all the necessary Application based components.

Our Prime goal is to make this platform go online as this donation happens regularly within outreach but took lots of manual effort. We the volunteers have to ask people if they can donate, have to communicate on what items they can provide, where they can submit, whom they can contact. This application will have an answer for all these queries.

As different users are taking part in the system, their respective roles will help to reduce the risk from





registering over the application to providing the item to the needy. Application admin are always in charge of maintaining the system.

1.3 Technology Used to Develop the Project

Q: Technology? How is the Level Sir?

We have all the latest tools in our armory which will be used at its best in its best form.

Microservices, is a software designing technique. It is an architectural style which structures an application as a collection of loosely-coupled services. It has many benefits, like improving modularity and making developers life easy by making developing, testing, and debugging steps easy. It also helps in CI/CD. This article will be mainly focused on RESTful microservices, however, most of the tools/techniques can be used regardless of languages/architectures.

Now let us see a few technologies and tools used in this application:

1. Project Management Tool:
 - a. Apache Maven:
2. Framework/Tools (For Service Development):
 - a. Spring Boot:
 - b. Spring Cloud:
 - i. Netflix Eureka:
 - ii. Netflix Zuul:
 - iii. Hystrix:
 - c. Spring JPA:
 - d. Spring Security:
 - e. Spring AOP:
 - f. Slf4j/Log4J2:
 - g. Spring Mail:
3. Framework/Tools for UI Development:
 - a. Angular 7:
 - b. Bootstrap 4:
 - c. ChatJS:
4. Testing Framework/Tool:
 - a. Junit:
 - b. Jasmine + Karma:
 - c. JMeter:
5. CI/CD:
 - a. Jenkins:
6. Code Coverage Report:
 - a. Sonar Scanner:
7. Deployment Environment:





- a. Docker:

1.4 Project Design

Before you ask for the Design, let us tell you honestly, it's a bit complex. But its complex with all the simplicity we could bring together. Please let us explain...

Based on the introduction of the theme and objective of the application, the application will support users with different roles. And for different roles/type of users, user interface offered by the application will be different.

List of type of users/roles that application will be supporting are:

1. Volunteering User
2. Outreach Volunteer User
3. Application Administrator User

1. Volunteering User

- Volunteering users will sign-up for this application and post registration they will be able to put in requests for offering their belongings to needy. Account for Volunteer Users will be activated instantly.
- At the time of putting in the handout request on the website, the user will have to fill in details about their belonging along with their pictures clicked by them. The user has option to select at which Collection/Inventory Centre they will submit their belongings. These Collection/Inventory Centers can be treated as different Cognizant's premises present across our country.
- These requests can be approved/rejected by application administrators. Once their requests are approved by application administrators upon scrutiny, users will get a mail mentioning date-time frame during which they can submit their belonging.
- User can view from their dashboard, the list of offering requests they have placed and their current status. In other words, all the history details for the user will be readily available in user's dashboard.



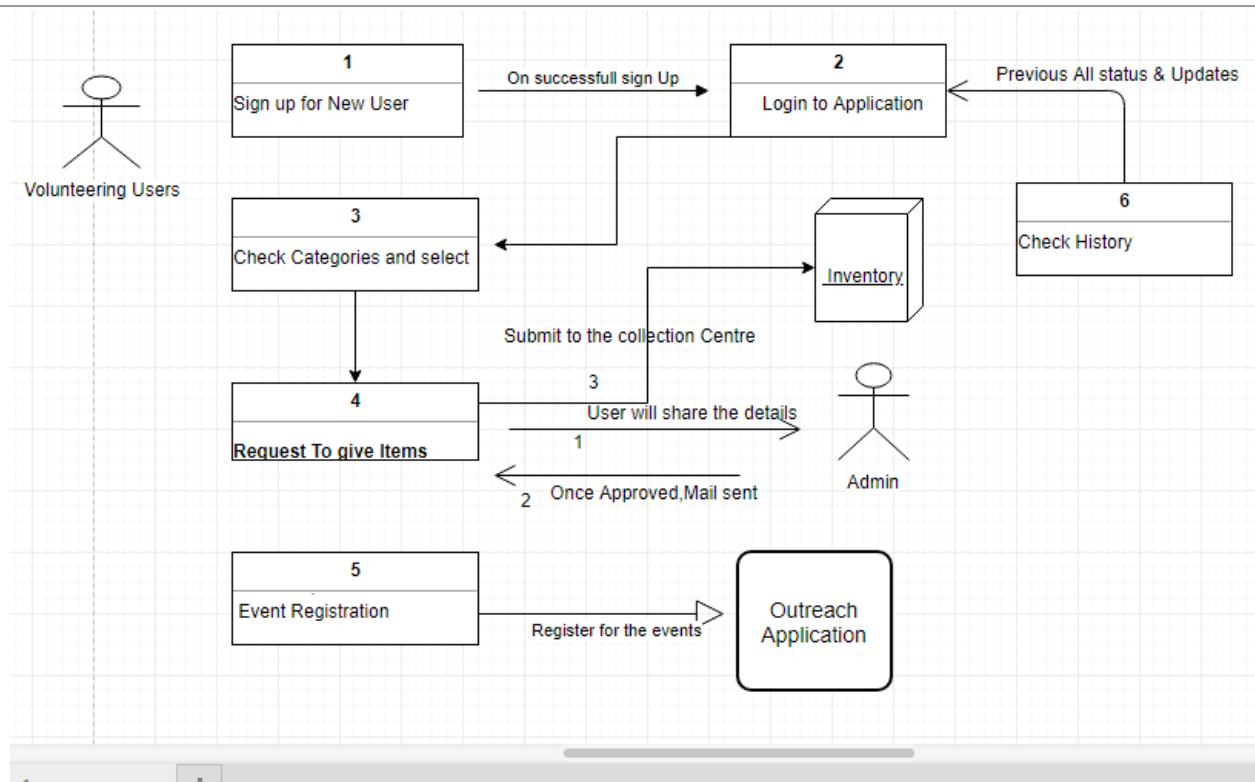


Figure 1: Use Case Interaction Diagram for Volunteering Users

1.0 Outreach Volunteer User

- Outreach Volunteer users will sign-up on the application. Upon activation of their account, they will be able to login into the application. The activation of Outreach volunteer users accounts will be done by Application Administrators. Upon activation, Outreach Volunteer user will get an intimation using email.
- Once Outreach Volunteer logs into the application, user will be able to see the dashboard made specifically for Outreach Volunteer users where they can see what all items are present in different Collection/Inventory Centre.
- They can view Inventory details and can place request for items in inventory as per the needs they have analyzed and for which they will be volunteering. These requests for items need to be approved by Application Administrators.
- Once item requests are approved, inventory status would be updated, and so will the request status for the Outreach Volunteering user. Outreach Volunteering user will be intimated via email. Outreach Volunteer user can work on the assignment and update the request mentioning where and for whom they have used the items from inventory.
- Outreach Volunteering users can view list of requests made by them, and their current status in their dashboard. In other words, all the history details for the Outreach Volunteering user will be





readily available in user's dashboard.

- Outreach Volunteer users can also put in requests for offering their belongings to needy, the same way like a Volunteering User has option to do. All the features applicable for a Volunteering User is also applicable for an Outreach Volunteering User.
- Collection of items from the inventory and delivering it to the needy ones is manual and the application is not offering shipment use cases, and is aligned to the way at present Outreach Volunteers are currently working in Cognizant.
- Outreach Volunteer user can generate report based on the list of requests they have worked upon and which all people/NGOs have benefited from his work.

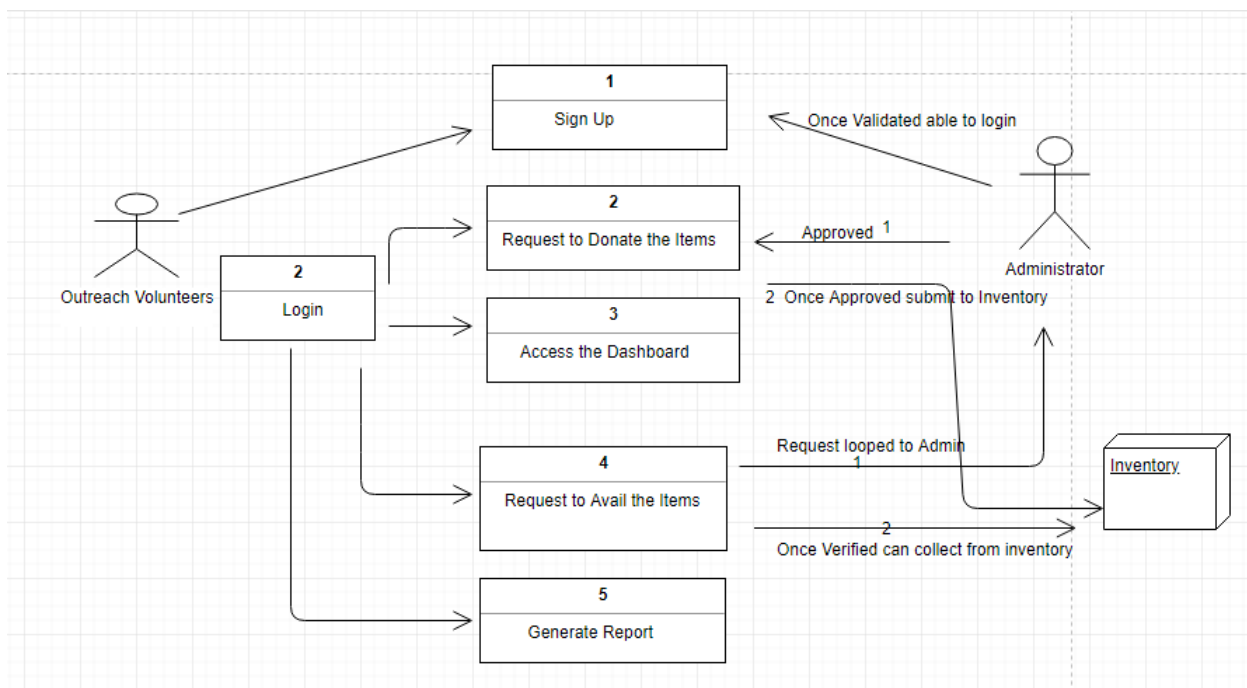


Figure 2 : Use Case Interaction Diagram for Outreach Volunteer Users

1.1 Application Administrator User

- There will be one hard coded administrator user credentials in the database. Using this credentials, the first administrator user can login, and view the admin user creation dashboard as well as inventory details dashboard. The first user can create other Application Administrator users.
- Application Administrator User will have option to see list of users belonging to different role. Administrator will be playing the vital role in maintaining the application as they have the right to deactivate the user based on violations of code of conduct.





- Application Administrator users can approve/reject offering requests of Volunteering User. An email with details will be sent to the Volunteering user.
- Application Administrator users can approve/reject account creation requests for Outreach Volunteer Users. An email with details will be sent to the Outreach Volunteering user.
- Application Administrator users can approve/reject item collection requests from inventory by Outreach Volunteering user. An email with details will be sent to the Outreach Volunteer user. If approved, the Outreach Volunteering User can collect requested items from Inventory/Collection Centre for the distribution to the needy.
- Application Administrator users can check status of items in Inventory/Collection Centre and can do necessary updates.
- Application Administrator users can generate several reports:
 - Report for items collected in inventory for a particular Collection Centre during a time span.
 - Report for any Outreach Volunteer User on what all request/work has been done by the Outreach Volunteer User during a time span.
- Application Administrator Users only will have access to DB where necessary update can be done as per the need of the application.
- Application Administrator users can post updates about Engagement programs being organized by Outreach.

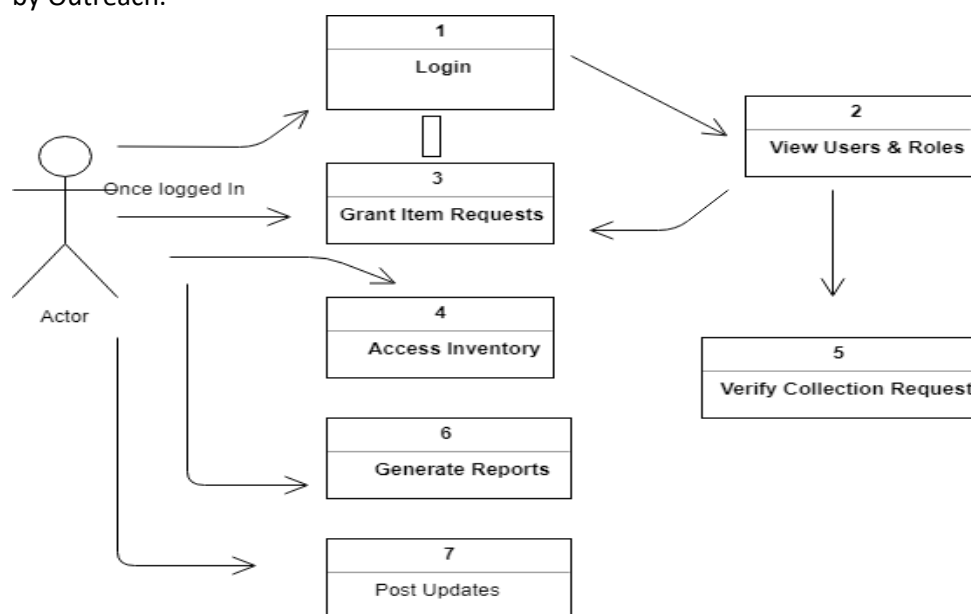
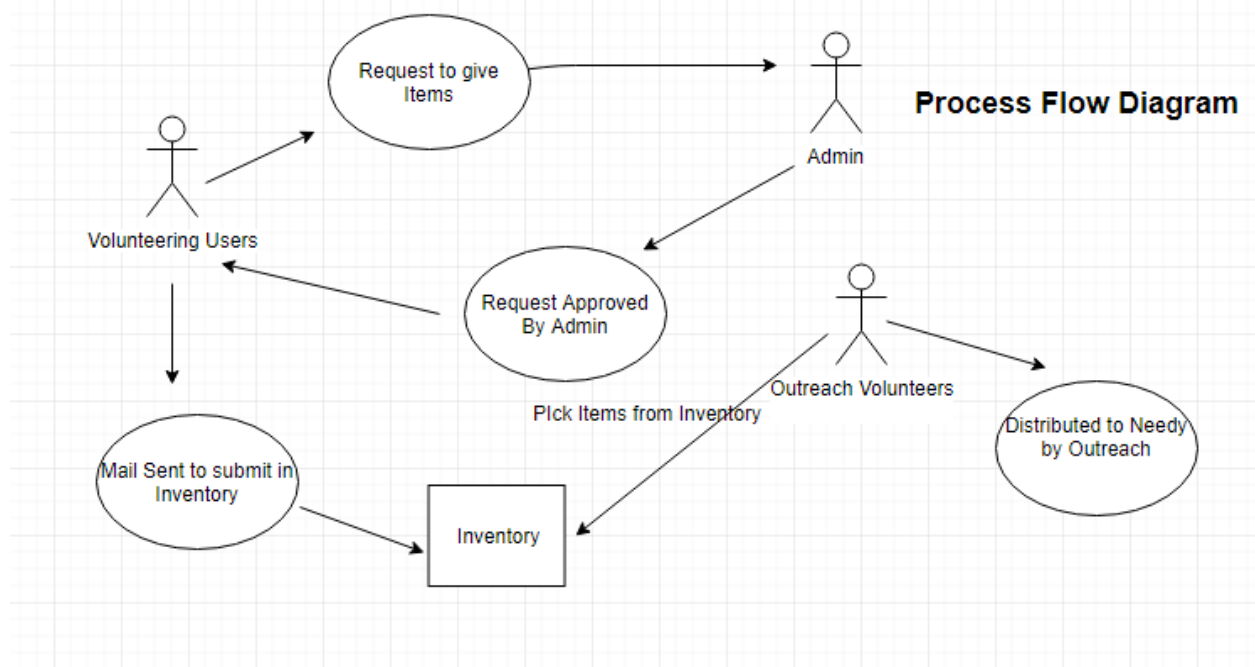


Figure 3- Use Case Interaction Diagram for Application Administrator

1. Process Flow Diagram for #GiveAwayApp





2. Micro Service Architecture Implementation Overview

The application will be based on Micro Service Architecture, where in each individual working module is segregated as a separate Micro Service.

At present the #GiveAwayApp is going to implemented with 4 micro services, namely:

- User Management System
- Inventory Management System
- Mail Delivery System
- Event Management System
- Reporting System

The architecture is so designed, that it is very much easier to scale in future for enhancements and has scope for easier integration with newer micro services and third party user applications as well.

The #GiveAwayApp follows the standard micro service architecture as shown below:



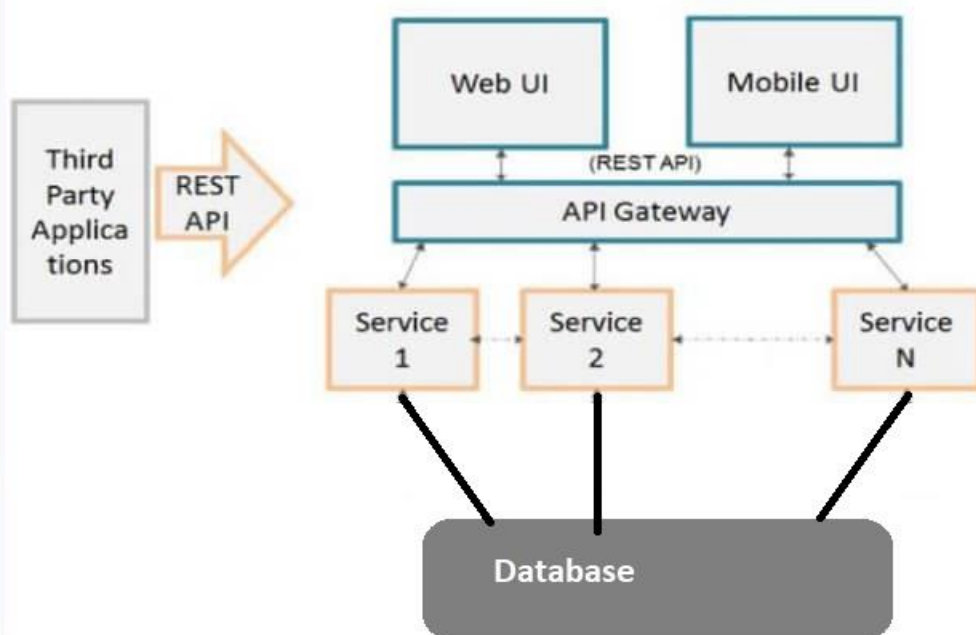
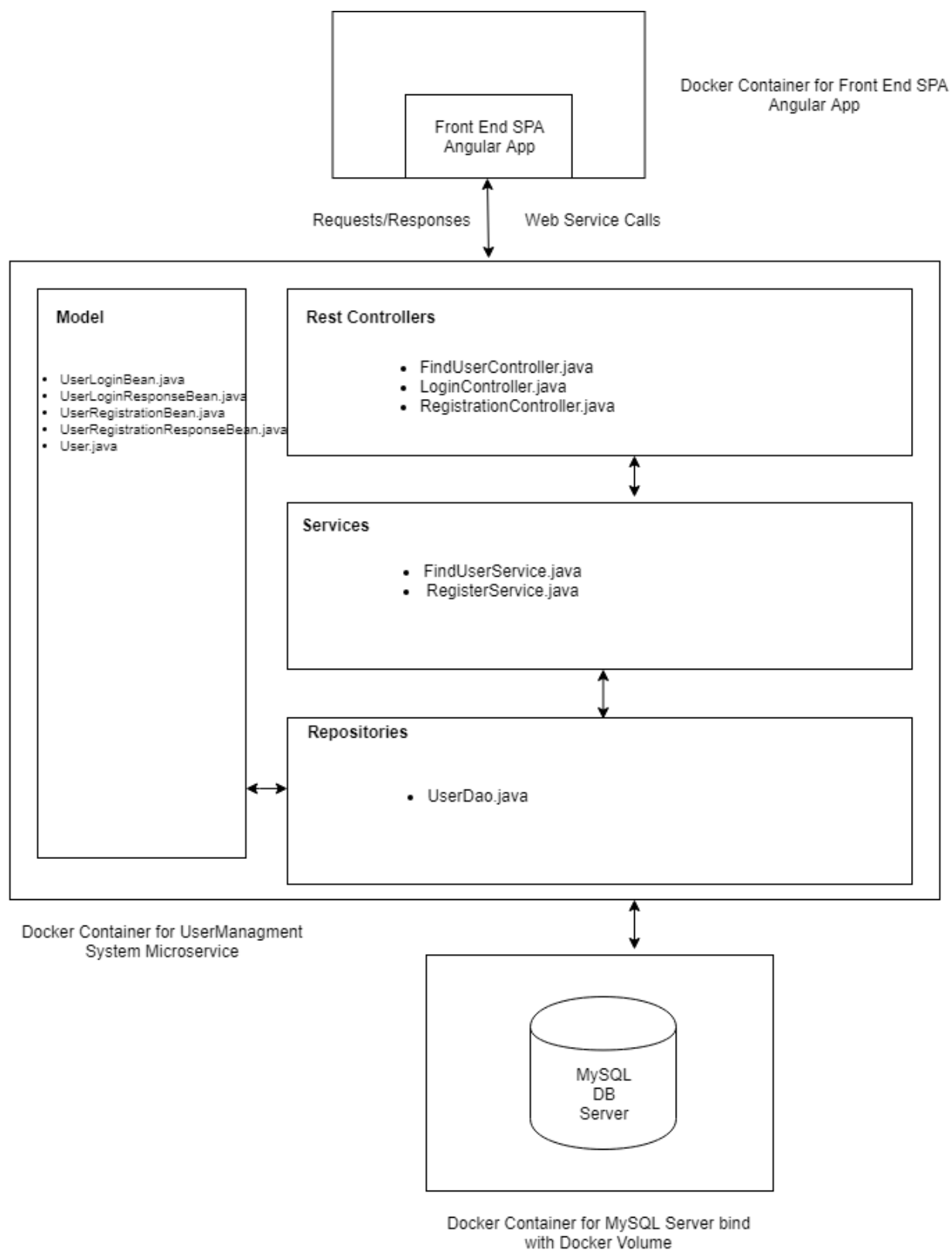


Figure 4 Micro Service Architecture Diagram

- I. User Management System: This micro service targets all the operations related to users who would be using this application. The architecture and flow of this service is self-explanatory through the diagram depicted below:





This micro service is responsible for:

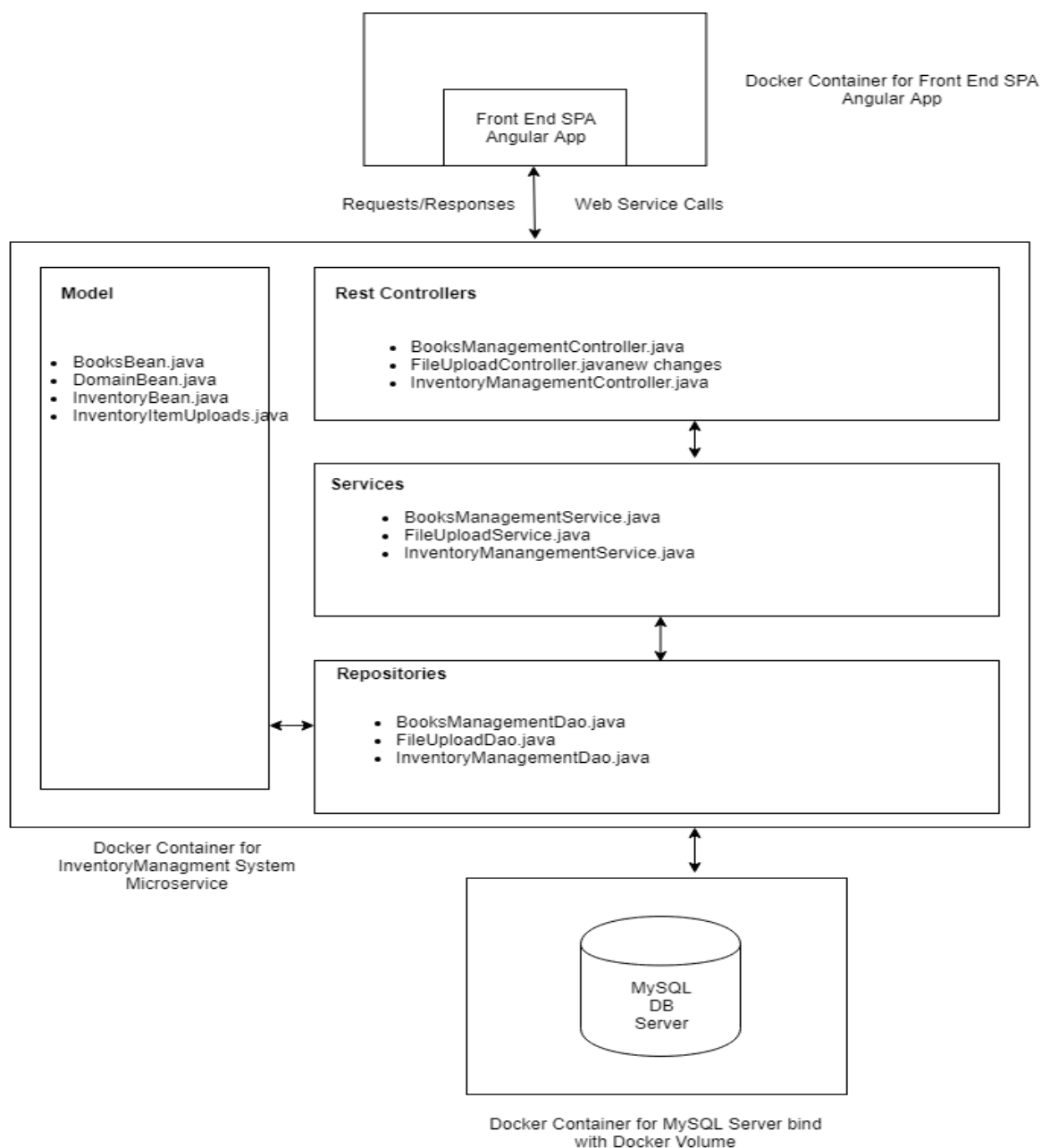
- Registration of new users.
- Authentication and Authorization of users for login.
- Activation of user accounts.





- d. Deactivation of user accounts.
- e. Serving response for different user roles which is used to present different UI for different user roles.

II. Inventory Management System: This micro service targets all the operations related to management of inventory which is the core of this application. The architecture and flow of this service is self-explanatory through the diagram depicted below:



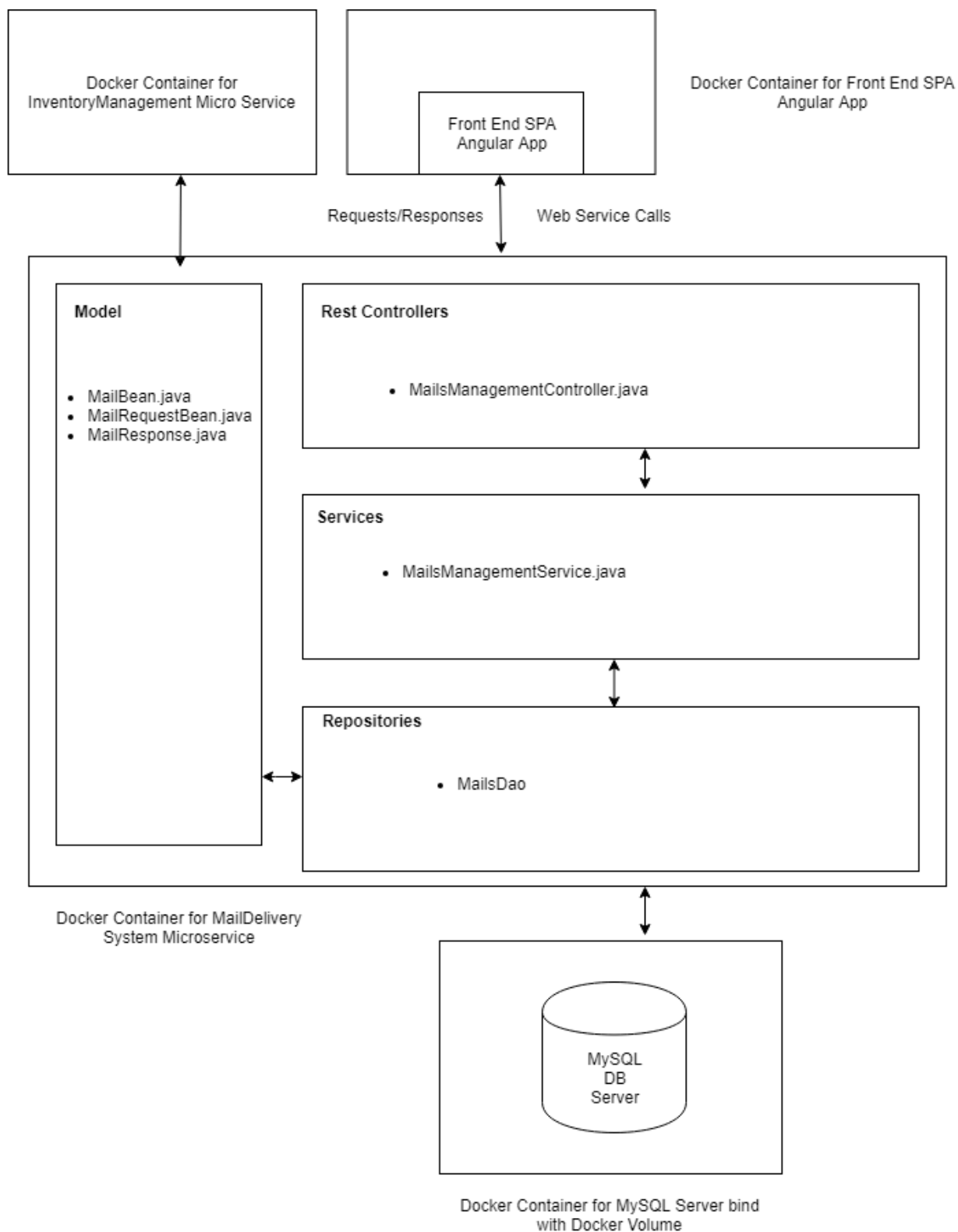
This micro service is responsible for:

- a. Placing requests for belongings from users.
- b. Approval/Rejection of placed user requests.
- c. Updating status of inventory items at every stage.





- III. Mail Delivery System: This micro service targets all the operations related to messaging/mailing and intimating the users using this application at every stage in the application. The architecture and flow of this service is self-explanatory through the diagram depicted below:

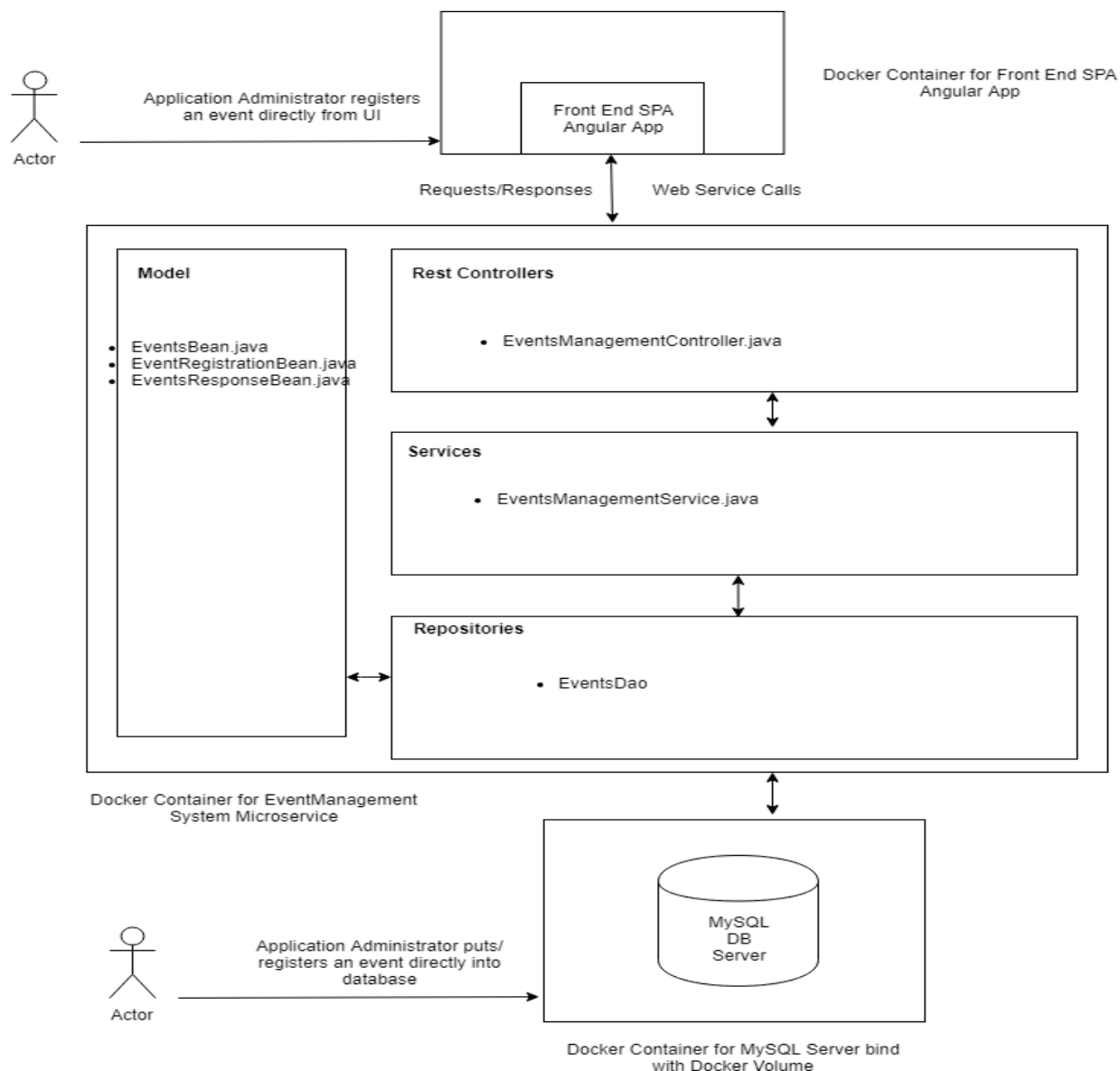




This micro service is responsible for:

- a. Sending mails to user's registered mail.
- b. Maintaining records of sent messages.

IV. Event Management System: This micro service targets all the operations related to managing events related operations targeted for this application. The architecture and flow of this service is self-explanatory through the diagram depicted below:



This micro service is responsible for:

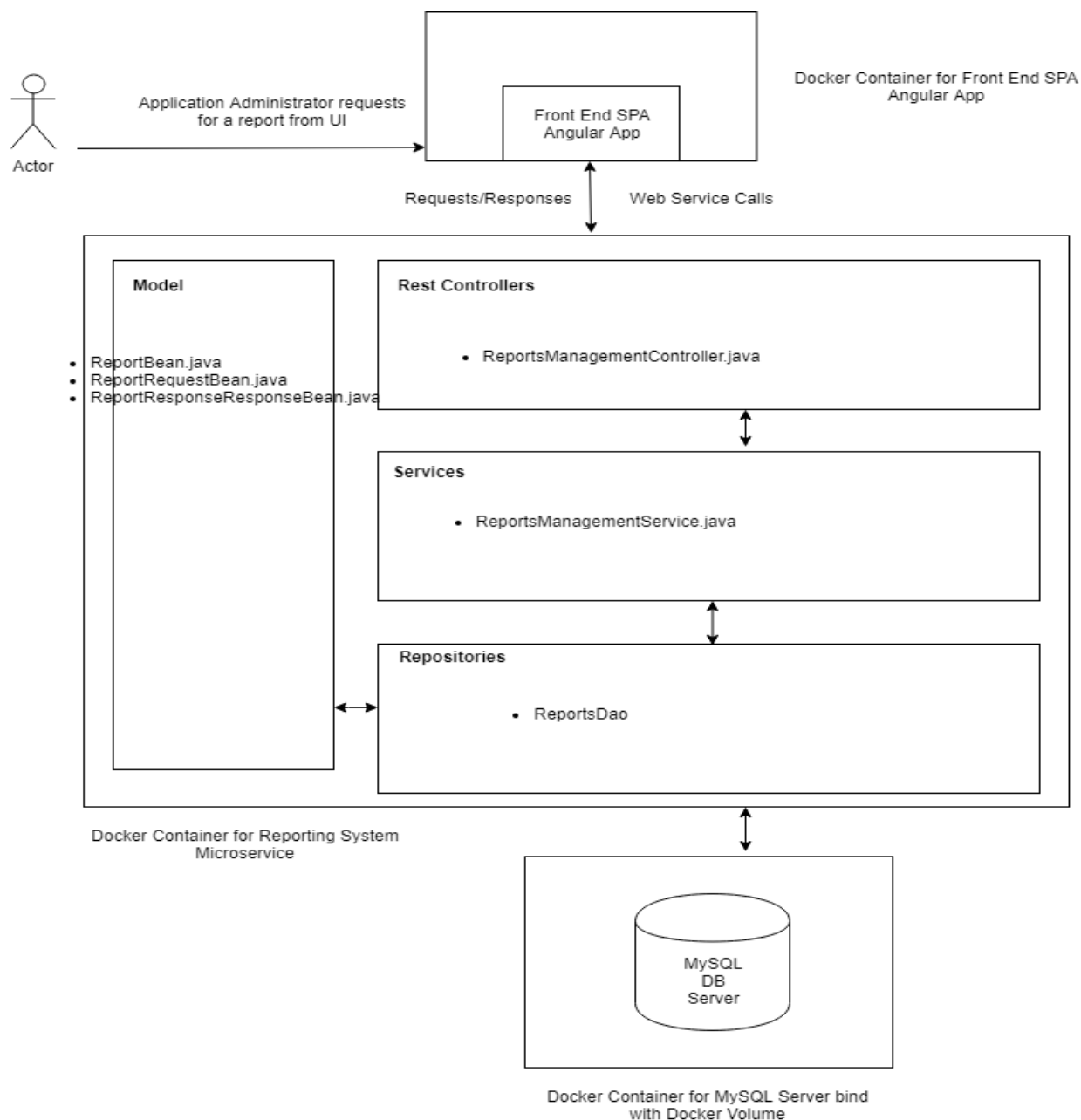
- a. Creation of new events.
- b. Scheduling of events.





c. Exposing event details.

- V. Reporting System: This micro service targets all the operations related to generating different types of reports offered by the application. The architecture and flow of this service is self-explanatory through the diagram depicted below:



This micro service is responsible for:

- a. Report for items collected in inventory for a particular Collection Centre during a time span.





- b. Report for any Outreach Volunteer User on what all request/work has been done by the Outreach Volunteer User during a time span.

3. Database Design

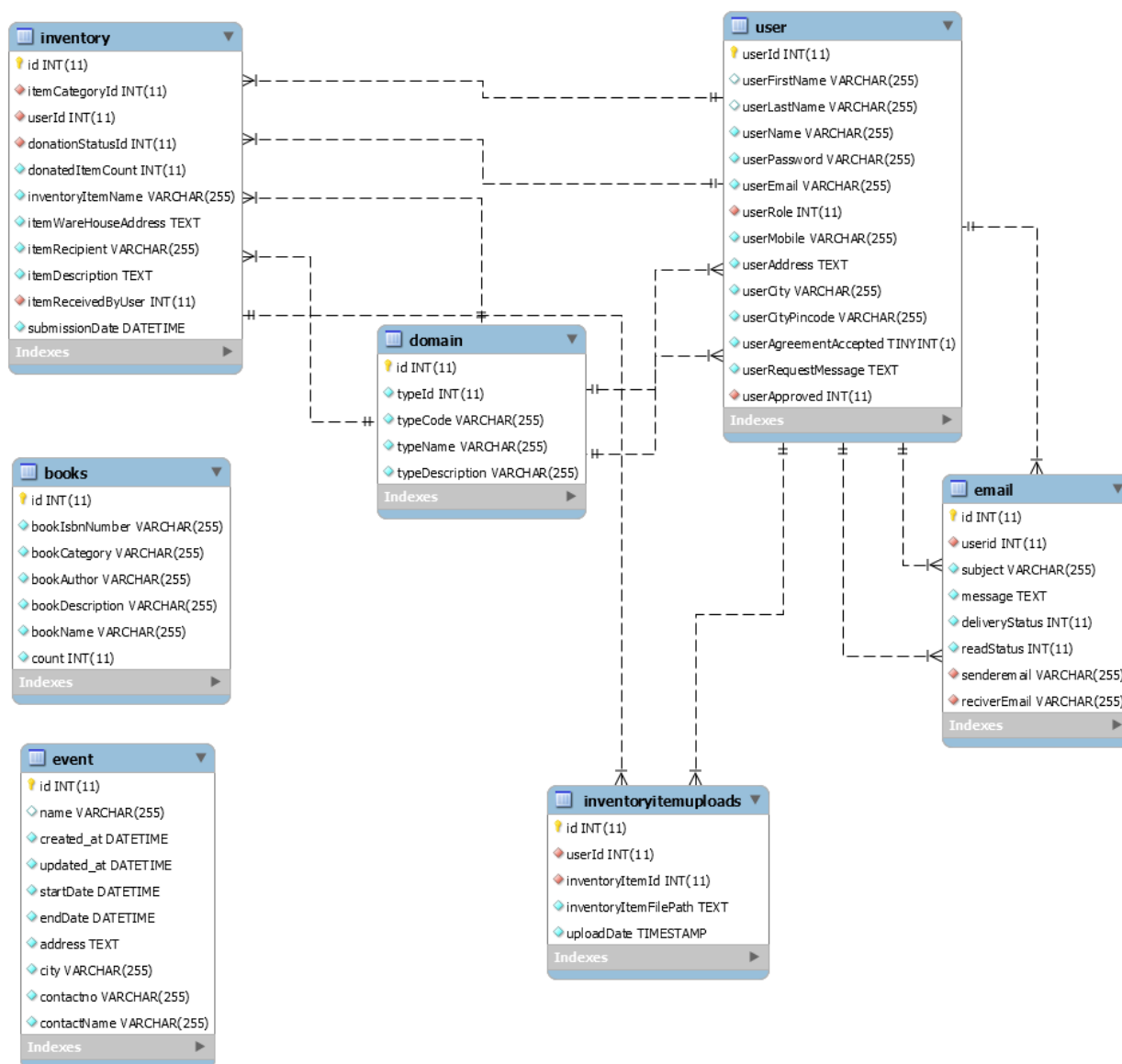


Figure 5: Database Design Diagram





1.5 User Interface

*Let us take you towards a better change through our #GiveAwayApp.
Please scroll over to continue...*





Home Page: Home page will show the Events created in chronological order.

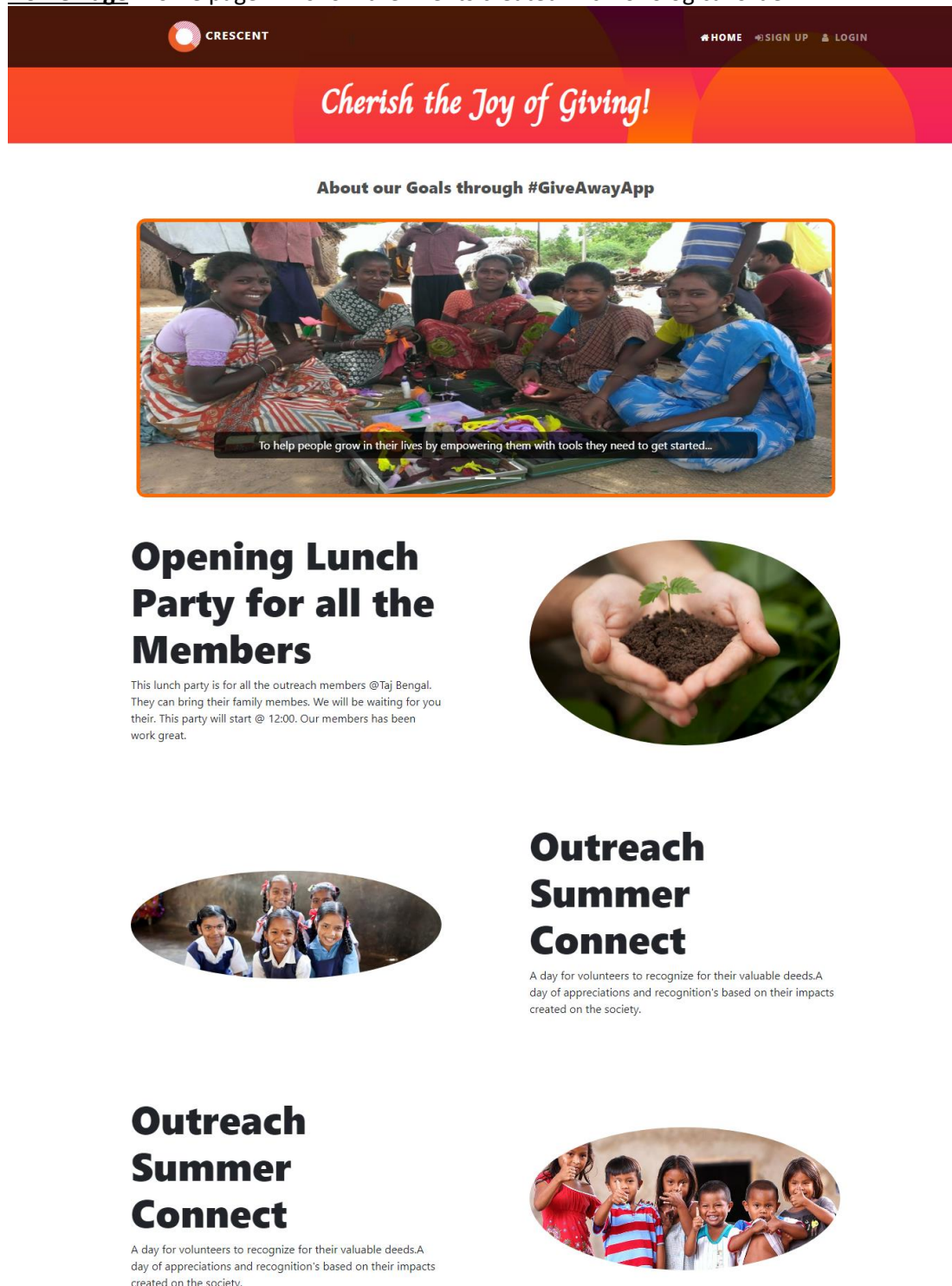


Figure 6 : Home Page





Screen-1 : Login Page : Users login to the application using their credentials. If credentials provided are valid, then they are logged into the application and the home page equips its self with bunch of options that are only available if a user has logged in.

CRESCENT HOME SIGN UP LOGIN

Cherish the Joy of Giving!

Login

Username:

Password:

Login

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Screen-2 : SignUp : A User have to register him/ her for any transaction in application. While registering, if the user has selected the type of user as Volunteering user, then the account is activated instantly and post registration user gets the confirmation modal to continue with the application through logging in.

☐ For rest of the users, account doesn't get approved instantly. The application administrator has to approve user registration request for Outreach Volunteer users and Application Administrators.



SignUp

First Name:

Last Name:

User Name:

Email address:

Password:

Confirm Password:

Role:

Mobile No.:

Address:

City:

Pin Code:

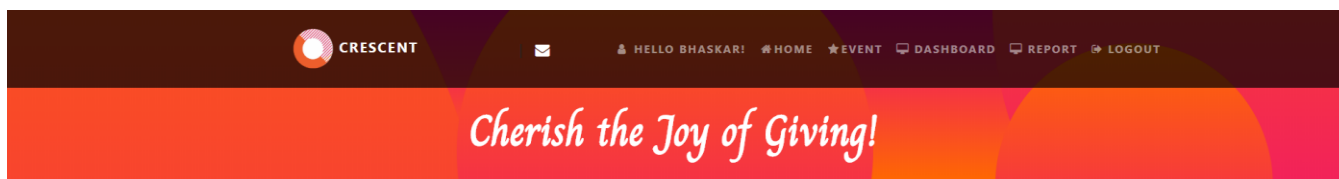
☐ I agree.....

Registration





Screen-3 : Inbox : This screen is for showing the mail send to the User for any type of communication done at different level of transaction . Ex: Registration.



Inbox


Subject	Message	From	Date
Test sub	Test Mail	admin@crecent.com	2019-03-11
Crecent Regestration Successfull!	Hi Bhaskar, Your regestration to...	admin@crecent.com	2019-03-12







1 to 2 of 2 < > Page 1 of 1 > >





Screen-4: Event Submission: From this screen Application administrator can create events with image on GiveAway app, which will/may be organized by Outreach people. This will help in increasing user engagement.

 CRESCENT

 HELLO BHASKAR!  HOME  EVENT  DASHBOARD  REPORT  LOGOUT

Cherish the Joy of Giving!

STEP 1 : Upload Event Image

Choose File

No file chosen

Upload

STEP 2 : Add Event Details

Event Name:

Description:

Event Start Date:

mm/dd/yyyy

Event End Date:

mm/dd/yyyy

Address:

City:

Mobile No.:

Contact Person:

Create Event


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
Screen-5 : Dashboard : This Screen is provide the facility to the use to submit giveaway item and request for the available inventory items for needy people. Admin got the control panel for all his/ her work. Form Approving/ rejecting the Giveaway request to approving/ rejecting the register Users.


Tab-1: Register a GiveAway : This tab is use to submit the request for Giveaway item donation.


 CRESCENT





HELLO BHASKAR!

 HOME

 EVENT

 DASHBOARD

 REPORT

 LOGOUT

Cherish the Joy of Giving!

Dashboard

[Register a GiveAway](#) [Your GiveAway Requests](#) [Notifications](#) [Inventory](#)

#GiveAway for a noble cause

Please select the item category:

Item Name:

Enter Item Name, eg: Watch

Item Description:

Enter Item Description of your item

Count of items you wish to donate:

for eg: 1

Select City for Collection Center:

Kindly select one picture of the item for upload:

Choose Files

No file chosen

Submit Request

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Tab 2: Your Give Away Requests : This will show the Request dome by the user for Item submission in Inventory.

HELLO BHASKAR! HOME EVENT DASHBOARD REPORT LOGOUT

Cherish the Joy of Giving!

Dashboard

[Register a GiveAway](#)[Your GiveAway Requests](#)[Notifications](#)[GiveAway Users](#)[Inventory](#)

Your #GiveAway Requests

Token Number	Item Picture	Item Name	Item Description	Current Status
VUTVPLE		Book1	Test Book 1	Rejected
QZFGEE7		Shirt	Test Shirt 2	WaitingForAdminApproval
KHWGGOR		Black Blanket	Test Blanket 1	ItemCollected
MODSYXC		Book2	Test Book 2	ItemDonatedToNeedy
VEEQODD		Novel	Chetan Bhagat Novel	ItemDonatedToNeedy
W13AT4T		BBBB	BBBB	WaitingForAdminApproval
3SLUJTT		ddd	ddddddfsf	WaitingForAdminApproval
BMZQEHR		yyyyy	yyyy	WaitingForAdminApproval
MSDNIVF		yyyyy	yyyy	WaitingForAdminApproval
32UZKUK		yyyyy	yyyy	WaitingForAdminApproval
C6C90UX		e	123213	WaitingForAdminApproval
UWSNFDO		1	dsfsadf	WaitingForAdminApproval
B8IDDOE		asdfsadf	asdfsadfsadfs	WaitingForAdminApproval
PXVOJH4		ewrewrew	1	WaitingForAdminApproval

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Tab-3: Notifications : This screen is for showing the mail send to the User for any type of communication done at different level of transaction . Ex: Registration.

HELLO BHASKAR! HOME EVENT DASHBOARD REPORT LOGOUT

Cherish the Joy of Giving!

Dashboard

[Register a GiveAway](#) [Your GiveAway Requests](#) [Notifications](#) [GiveAway Users](#) [Inventory](#)

Inbox

Subject	Message	From	Date
Test sub	Test Mail	admin@crecent.com	2019-03-11
Crecent Registration Successful!	Hi Bhaskar, Your registration to...	admin@crecent.com	2019-03-12

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Tab-4: GiveAway Users: This screen is only visible to the Application Administrator Role. This screen is for Approving / Rejecting the registered Users.

HELLO BHASKAR! HOME EVENT DASHBOARD REPORT LOGOUT

Cherish the Joy of Giving!

Dashboard

[Register a GiveAway](#) [Your GiveAway Requests](#) [Notifications](#) [GiveAway Users](#) [Inventory](#)

#GiveAway Users

[Refresh](#)

User Id	User Role	Username	Full Name	User Email
1	appAdmin	bhk	Bhaskar Koley	bhk@gmail.com
5	appAdmin	bhaskarkoley	Bhaskar Koley	bhaskar.koley@gmail.com
7	gwUser	nikhil	Nikhil N	nikhil.n@gmail.com
23	gwUser	swetarani098	SWETA RANI	swer
24	outVolUser	khushbu098	Khushbu kri	khush
43	gwUser	sunny098	Sunny Kumar	sunny@gmail.com

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Tab-5: Inventory : This screen is providing the following facilities to the Users :

- Volunteer Users and Application administrator can see in their dashboard the list of available items in the inventory.
- For any available item in the inventory, volunteer/administrator can request to acquire that item by just few clicks.
- Application administrator is able to see all the raised requests and can approve/reject them. If approved, item count for the requested type gets decreased.
- If the item count requested is equal to the total item count for that category, upon approval of that request inventory count for that category becomes zero.
- Inventory count is maintained at every instance of request->approve/reject cycle.
- Item approved accounts for Outreach volunteer to acquire them and utilize for the need they have analyzed. Once they deliver the items, they update in their dashboard where the item was delivered and is being used.

HELLO BHASKARI

HOME

EVENT

DASHBOARD

REPORT

LOGOUT

Cherish the Joy of Giving!

Dashboard

[Register a GiveAway](#) [Your GiveAway Requests](#) [Notifications](#) [GiveAway Users](#) [Inventory](#)

#GiveAway Inventory Section

All Inventory

Token Number	Item Count	Item Picture	Item Category	Item Name
VUTYPL	2		Book	Book1
02FGEE	10		Dress	Shirt
KHWGGOR	19		Blanket	Black Blanket
M0DSYXC	3		Book	Book2
VEEQ0DD	1		Book	Novel
W13AT4T	1		Book	BBBB
3SLUJTT	21		Gadgets	ddd
BMZQEHR	2		Gadgets	yyyyy
MSDNJVF	2		Gadgets	yyyyy
32UZKUK	2		Gadgets	yyyyy
C6C9OLX	1		Gadgets	e
UWSNFDO	1		Book	1
BBIDDOE	2		Gadgets	asdfsadf
PKVQJH4	1		Toys	ewrewrew
GVSIQYM	5		Book	2

Request

Inventory Requests

Token Number	Item Category	Item Name	Item Description	Requested Item Count
M0DSYXC	Book	Book2	Test Book 2	1
VEEQ0DD	Book	Novel	Chetan Bhagat Novel	1
KHWGGOR	Blanket	Black Blanket	Test Blanket 1	1

Donated

My Tasks

Token Number	Item Category	Item Name	Item Description	Current Status
No Rows To Show				

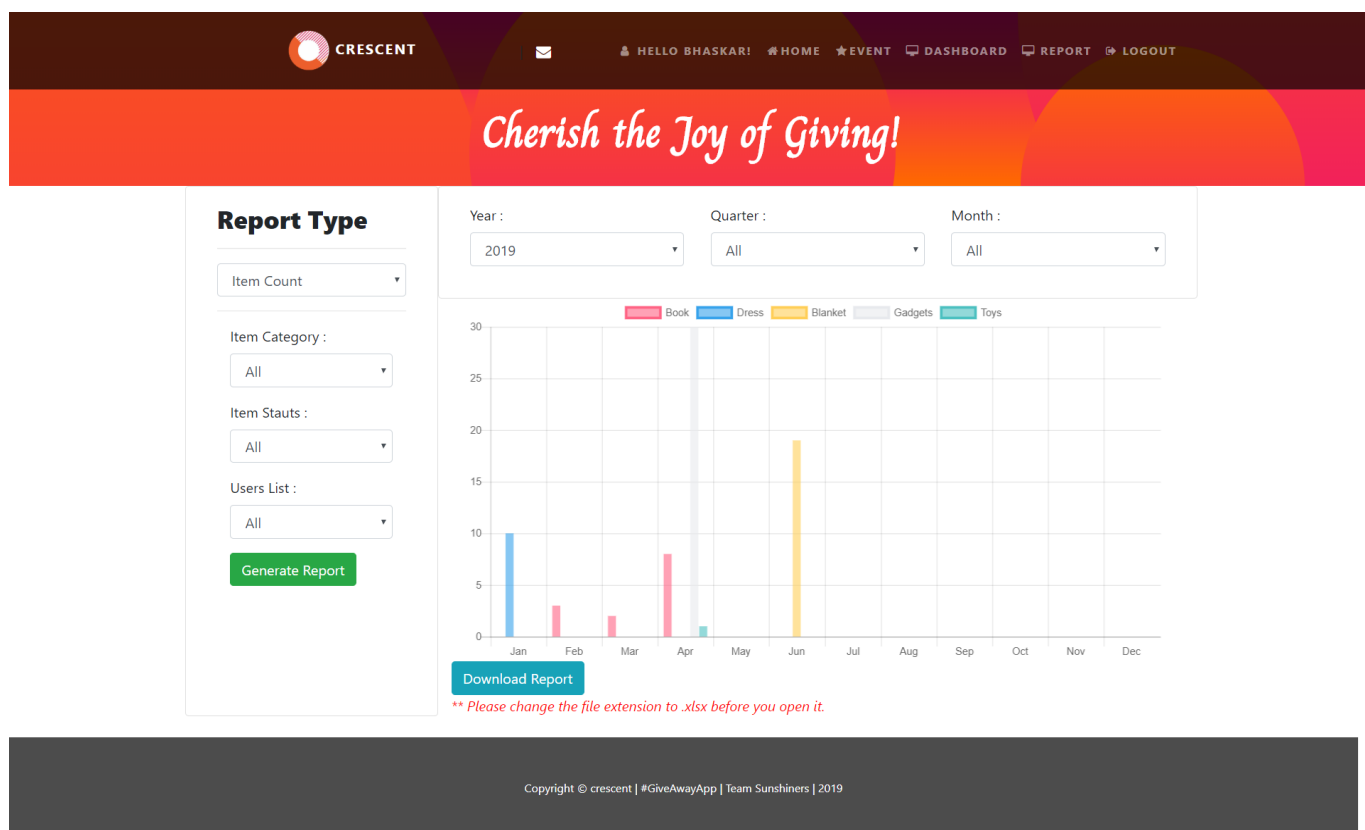
Donated

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Screen-6 :Report Page: GiveAway application provides a comprehensive reporting system which allows admin to get to know the status of inventory at any time. The Reports can be generated by Admin users only. The reporting system has been designed in such a way that it provides report on inventory data based on certain facts such as Item Category, Item Status and Application Users. The report is calculated over the dimension of time, with input parameter such as year, respective quarter and respective month. According to the fact and dimension selection, our reporting system generates a bar graph in the application UI and also generates a detailed excel file with information which helps in projecting the real time data in an immersive way together.





1.6 Future Enhancement of the Project

Q: Any Future Enhancement plans?

Yes. We have a good bunch of them.

Maintaining a Book Library has been kept as a future scope of development in the application, but the application's architecture has been designed in such a way that it is very easier to leverage and scale the application to include a full-fledged Book Library for needy as well. This will help in generating the minimum revenue that can help website run un-interruptedly.

Also, we are in a plan of making this application to be used widely by making it available across different locations. Once we will have the approval we will plan for adding more no of warehouse centers at other locations.

