

# Object Oriented Analysis and Design

## Project Deliverable 1

### Instructor:

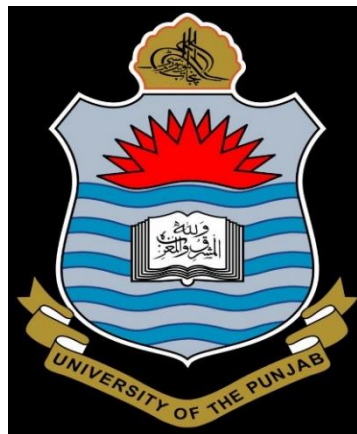
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***--- The project is organized using UP Artifacts ---***

## **VISION**

### **Revision History**

<b>Version</b>	<b>Date</b>	<b>Description</b>
Inception draft	Nov 12, 2021	First draft. To be refined primarily during elaboration phase.

### **Introduction**

We envision to have a food saving application, MyFood, with ability to connect food donors and receivers. The intermediate organization will ensure successful food transaction. Our aim is to avoid food wastage as much as possible and deliver it to the needy people.

### **Positioning**

#### **Business Opportunity**

Traditional food saving methods don't provide a wider platform to communicate donors and beneficiaries along with verification of successful food transaction. Organization working on saving food need an application to facilitate them as well food donors and beneficiaries. Having a wider platform to resolve this issue will influence marketplace.

#### **Problem Statement**

Food wastage is a worldwide issue that should be prevented. Food that wastes at different places (wedding occasions, in restaurants and hotels, hospitals etc.) can be supplied to poor people in government or private welfare societies, Islamic religious institutions, creches and the needy people who actually need that.

#### **Product Position Statement**

Food Donor, intermediate organizations and the beneficiaries will be able to communicate. Being the first food saving application in Pakistan will differentiate it from upcoming competitors.

## **Stakeholders**

### User / Market Demographics

- Food Saving organizations
- Food Donors (marriage hall mangers, restaurants, hotels, hospitals, rich people)
- Food Recipients (welfare societies, religious institutes, poor people)

### Non-User

- Project Manager
- Development Team

## **Key High-Level Goals**

Goals	Priority	Problems and Concerns	Current Solution
Fast and complete food transaction within food preserving time.	High	Late informed about extra food. Multiple food requests, decide which one to fulfill first. Traffic transport issues.	Stay update anytime, prior more needy people, use private transport

## **User-Level Goals**

**Donors:** Register, login, logout, request donation, verify donation, donation history, contact

**Food Saving Management:** Login, logout, approve registration requests, verify food transaction, transaction history, handle contacts

**Beneficiary:** Register, login, logout, request food, food receiving history, contact

## **Product Overview**

Food Save Application is a network application. Donors, beneficiaries and management can use this application on their mobile phones.

## **Summary of Benefits**

<b>Supporting Feature</b>	<b>Stakeholder Benefit</b>
System will first register each user to validate login facilities for him/her.	Getting pre-data about users of application.
Login / logout facility for each user (donor, beneficiary, management).	Privacy and data security maintenance.
Food donor can upload the details of extra food.	Management will get notification about food available at particular place/user.
Beneficiaries can request for food using application.	Management will be notified about food need for particular place/user.
User can view history according to his role.	History of all food transactions (successful + failed) will be in record of management.
Users can contact food saving organization through contact feature in application.	Handling issues of users will help to enhance performance.

## **Feature List**

- Registration
- Login / Logout
- Food Donation
- Request Food
- History (donation, receiving, transaction)
- Contact Us

## **Feasibility**

### **Timeline:**

Having smart developing team, the project will be feasible in timeline.

### **Technical:**

The project is technically feasible. We will use Java for frontend and any MySql for backend.

### **Financial:**

Being a socially welfare project, people donations will make project financially feasible.

# Actors and Goals

## Primary Actors

- Food Donors
- Food Saving Management / Organization
- Beneficiaries

## Secondary Actors

- Database system

## Offstage Actors

- Transportation service (for carrying food)
- Poor people

Actors	Goals
Food donor	Inform management about extra food on time.
FS management	Complete food transaction successfully from source to destination.
Beneficiary	Receive required amount of food on time.
Database system	Persistently handle all database functions and food transactions.
Transportation service	Want to provide maximum service to earn more.

# Use Cases

- UC1: Request Registration
- UC2: Request Login/log out
- UC3: Request Donation
- UC4: Approve Donation
- UC5: Request Food
- UC6: Approve food Delivered
- UC7: Show History
- UC8: Contact Us

# Use Cases (Casual Format)

## UC1 (Request Registration):-

**Use Case:** Request Registration

**Actors:** Donor, Beneficiary

**Type:** Primary

**Description:** If someone (donor, needy) wants to use service provided by application, he can request for registration to organization. The organization will approve whether this requester is valid to use service or not.

## UC2 (Request Login/logout):-

**Use Case:** Request Login/logout

**Actors:** Donor, Beneficiary, FSM

**Type:** Primary

**Description:** If someone (donor, needy, FSM) wants to enter to application, login credentials are required. For this, it is necessary for user to register himself first.

## UC3 (Request Donation):-

**Use Case:** Request Donation

**Actors:** Donor

**Type:** Primary

**Description:** If an entity (person, restaurant, wedding hall manager etc.) has some food to donate. they will request the donation form. Their registration is necessary to donate food.

#### **UC4 (Approve Donation):-**

**Use Case:** Approve Donation

**Actors:** FS Management

**Type:** Primary

**Description:** If the food pick-up location is in the range of organization, they will approve the donation. If the food pick-up location is out of range, the organization will provide the location of a nearby refrigerator installed by the organization at different places to drop the food there.

#### **UC5 (Request Food):-**

**Use Case:** Request Food

**Actors:** Beneficiary

**Type:** Primary

**Description:** If an entity (person or welfare institute etc.) wants food, they will request the food form. Their registration is necessary to request for food. Login credentials will be properly checked before requesting.

#### **UC6 (Approve Food):-**

**Use Case:** Approve Food

**Actors:** FS Management

**Type:** Primary

**Description:** If food is completely delivered to beneficiary by management, they will approve the food transaction successfully. History of users will update according to success of this use case.

## UC7 (History):-

**Use Case:** History

**Actors:** Donor, Beneficiary, FSM

**Type:** Primary

**Description:** User will request to show history according to its role. Donor will see history of its donations. Beneficiary can see history of its received food requests. FSM can see history of successful food transactions.

## UC8 (Contact Us):-

**Use Case:** Contact Us

**Actors:** Donor, Beneficiary

**Type:** Primary

**Description:** If users are facing issue in working of application or in management of organization, they can contact FSM via email or phone contact.

## Glossary

Term	Definition	Aliases
Beneficiary	People who get benefit from our application.	
Creshes	Welfare places for orphan people.	
Food Save Management	Organization who is the owner of this application.	FSM



# Major Requirements

*--- This area covers functional requirements ---*

- User (donor, beneficiary) will be able to register himself.
- User will be able to login / logout once registered to application.
- Donor will be able to provide food information for donation.
- Beneficiary will be able to request for food providing food required information.
- Food Save Management will be able to approve donation and food requests.
- System will be able to save donation, receiving, food transaction histories separately.

## Supplementary Specifications (FURPS+)

*--- This area covers non-functional requirements ---*

### Functionality

- ***Logging and Error handling***

System login errors will be handled persistently. Input validation errors will be handled and checked.

- **Security**

All usage requires authentication service. System will not allow unauthorized user to enter.

### Usability

#### ***Human Factor***

- Text size 12 (visibility at an arm's length)
- Two Color scheme – White, blue
- Language flexibility – English, Urdu
- Understandable user Interface

## **Reliability**

### ***Recoverability***

- If there is some issue in data saving in database, then temporarily data will be saved in files and will save to database later.
- System uses internet for communication. If internet connection disables, registered users still be able to donate / request food via system's built-in facility. The transaction data will be saved when connection enables.

## **Performance**

- User wants quick approval to his request (donation / food), food save management will approve this request as soon as food will be arranged for beneficiaries. This approval should take less than half day.

## **Supportability**

- ***Adaptability***

Different food save organizations have different way of working. So, system can be little bit changed according to requirement.

## **Implementation Constraints**

- Development team is expert only in java and mysql. So, insist to implement in same technology. But, it will prove long-time and beneficial.

## **Purchased Components**

- Data of beneficiaries (government welfare societies, hospitals, orphan houses, cresses etc. ) required.

## **Interfaces**

### ***Hardware Interfaces***

- Touch screen device

### ***Software Interfaces***

- Any operating system installed on device

## Domain Rules

ID	Rule	Changeability	Source
RULE 1	<b>Account disables on wrong information:</b> if a user provides wrong information, the organization will give a chance to correct the information after validation. if no positive action is taken, the account will be disabled.	High. Some organizations do not provide this flexibility.	Accounts Policy
RULE 2	<b>Spoiled food:</b> when the food is checked before packing if it is spoiled, food will be given to the organizations that make natural fertilizers.	High. There are several different methods to save food.	Ethical
RULE 3	<b>Valid beneficiary:</b> If some person itself tries to register himself as beneficiary, his requirements will be properly checked and the person will be given warning in case of wrong usage of application.	Low. Wrong use of any application should be avoided.	Ethical

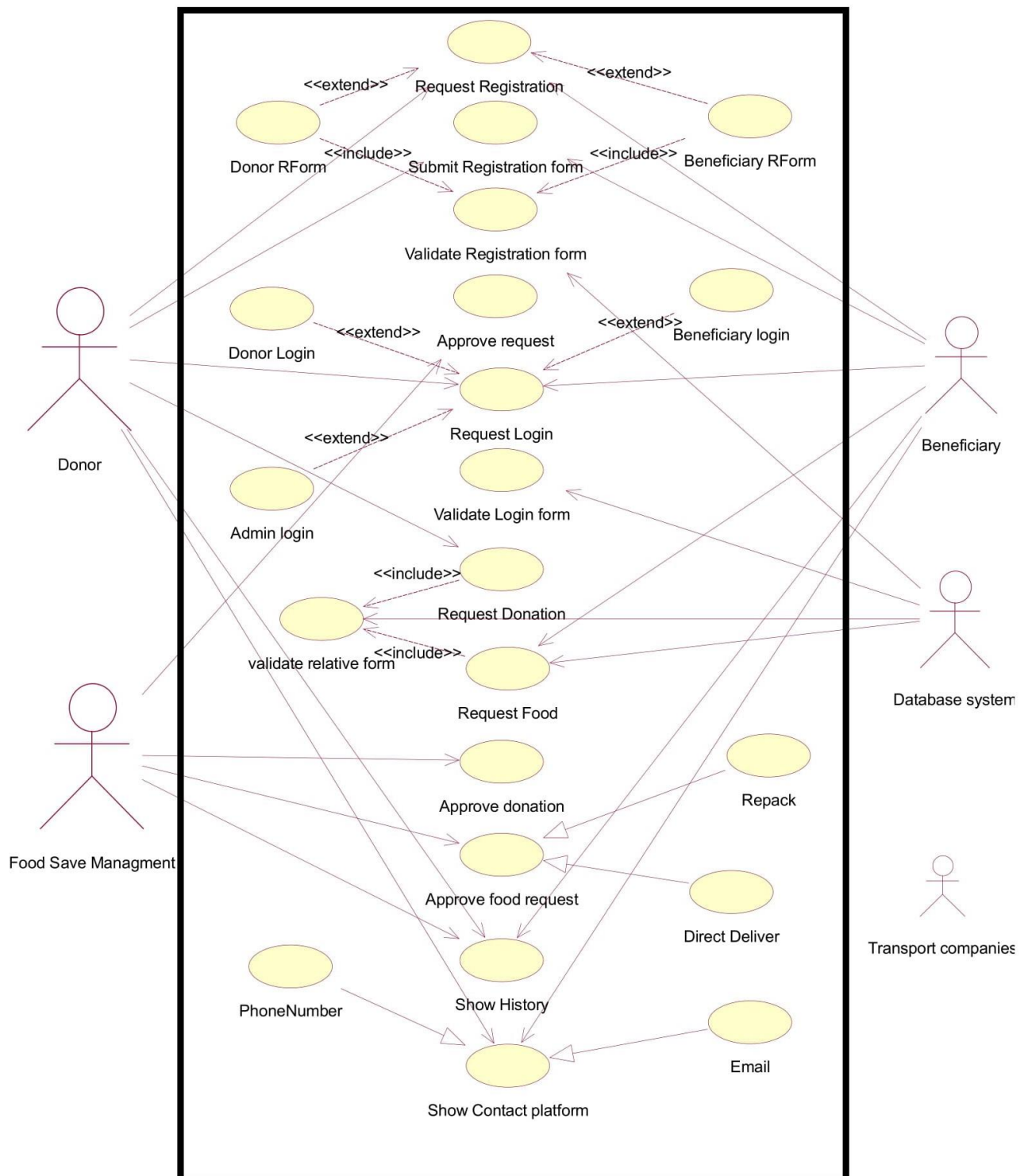
## Risk List

ID	Description	Chances of Risk occurring	Action
RISK 1	Time to complete project can be short	High	Early working and planning
RISK 2	Project can be very costly as it is depending on peoples' funds	High	Raising a social campaign about this need
RISK 3	Donors and Beneficiaries deny to provide their data	High	Explaining the idea and need to them

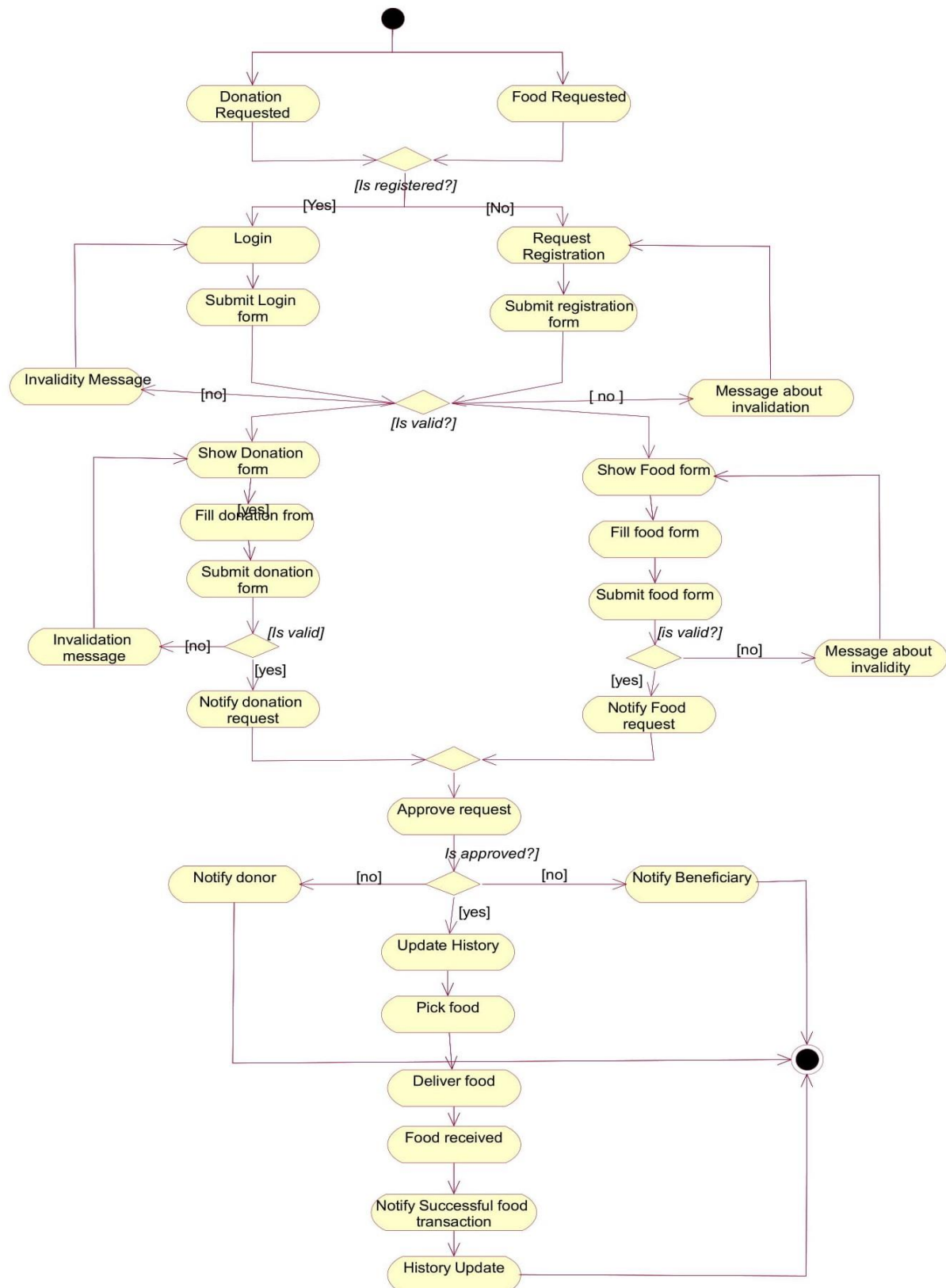
## Business level use case Diagram:



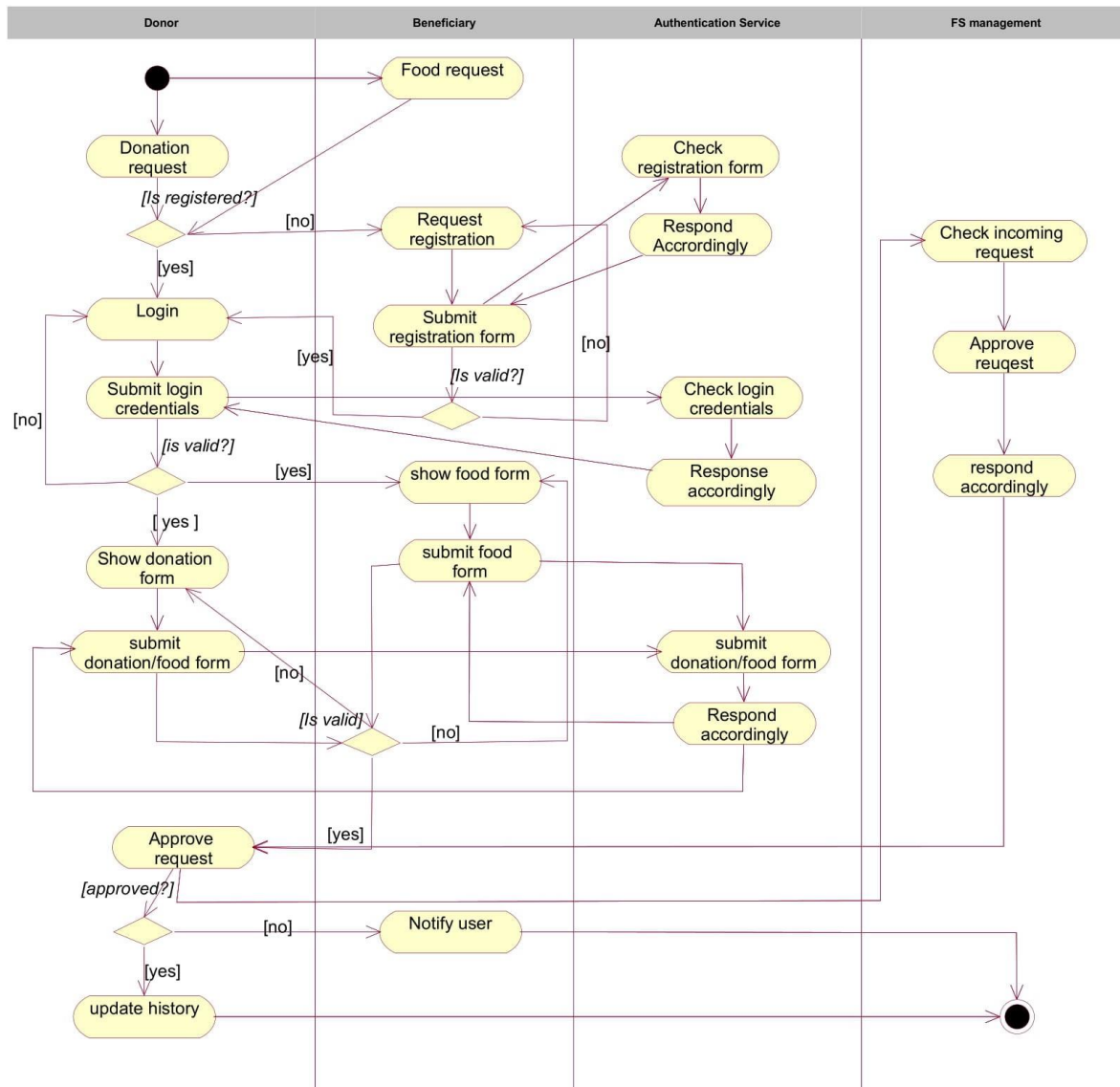
## Analysis level use case Diagram:



## Activity Diagram:



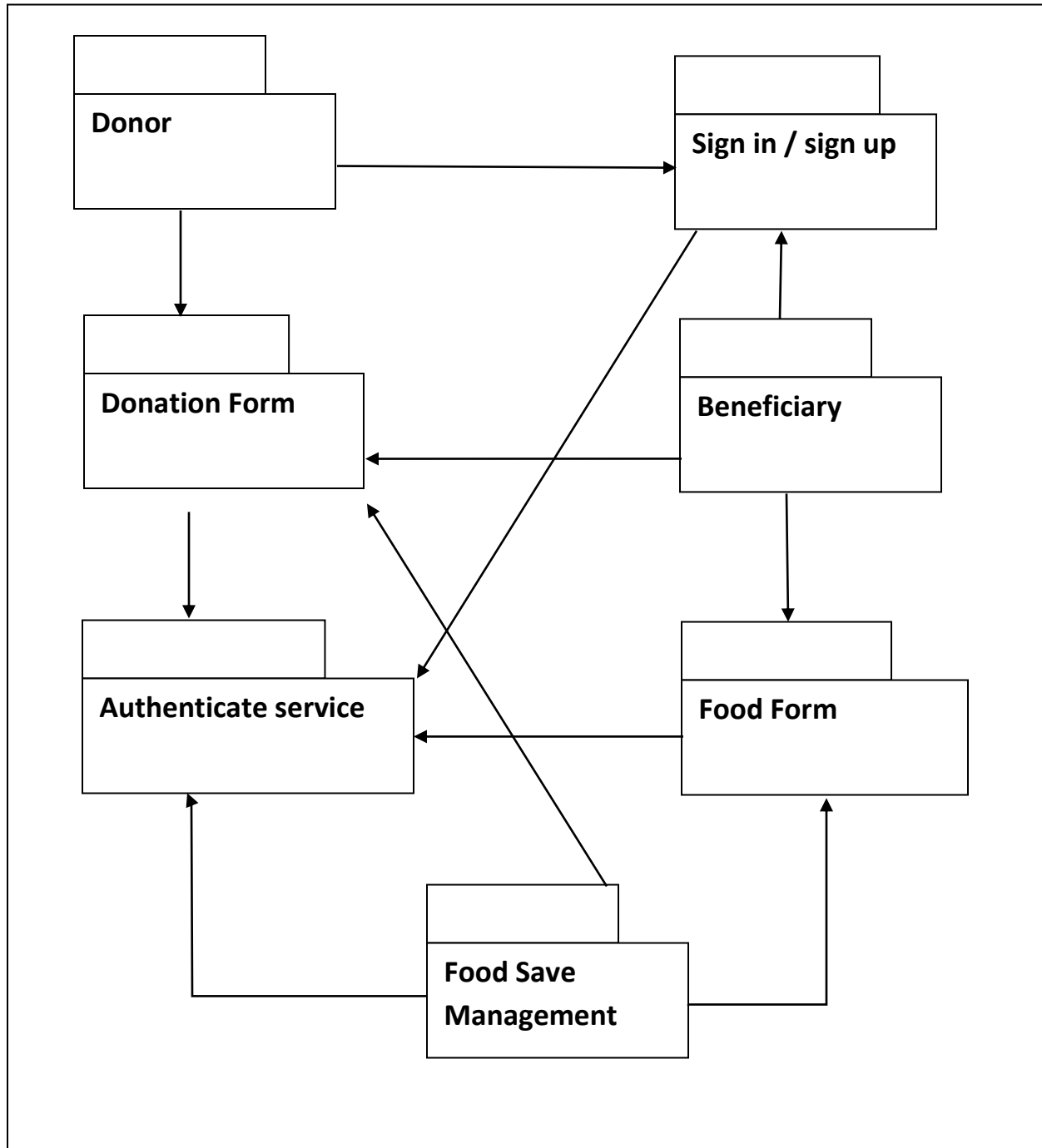
## Activity Diagram with swim lane:



**Swim lane activity diagram for food save application**

## Package Diagram:

Food Saving Application





## Components with Packages:

### Donor

Donor data

Donor History

Donor  
Management

### Sign in / Sign up

Sign in /  
sign up

Authenticate  
credentials

Login history

### Donation Form

Fill form

Authentication

Save  
Application

Process  
request

Approve

### Beneficiary

Beneficiary  
Data

Beneficiary  
History

Beneficiary  
Management

### Authenticate Service

Authenticate  
coming request

Return  
response  
accordingly

### Food Form

Fill form

Authentication

Save  
Application

Process  
request

Approve

### Food Save Management

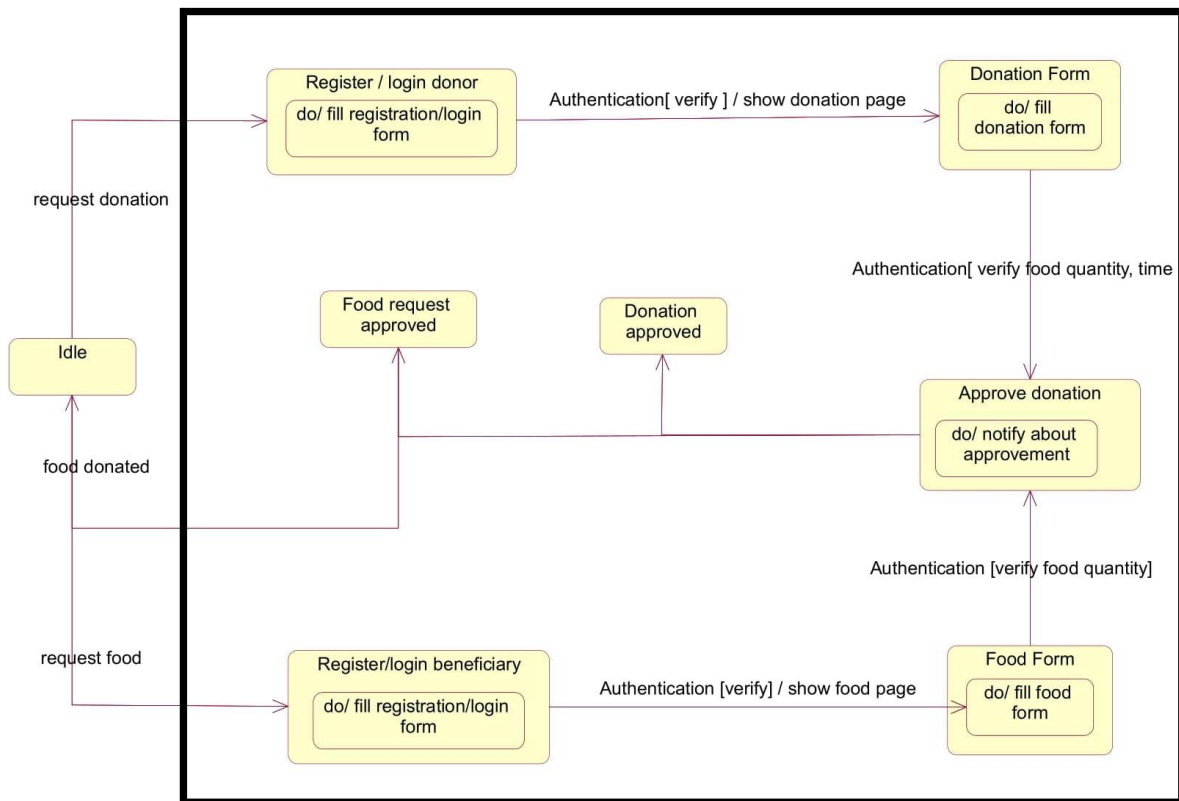
Approve  
donation  
request

Approve food  
request

Notify  
accordingly

Food  
transactions  
history

## State Chart Diagram:



**Food Save Application working**