

HelpBridge: Hope in Times of Crisis

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Project Title : HelpBridge - Bridging Hope in Times of Crisis

HelpBridge is a desktop-based donation management system developed to support communities during critical situations such as natural disasters, pandemics, and extreme poverty. In times of crisis, aid efforts often suffer from poor coordination, lack of transparency, and delays in reaching the affected individuals. HelpBridge aims to solve these issues by providing a centralized platform that efficiently connects donors with support seekers through structured processes and user roles.

The system includes four major roles: **Admin**, **Volunteer**, **Citizen**, and **Support Seeker**. Admins manage the platform by adding volunteers, manage users, and monitoring system activities. Volunteers are responsible for creating and managing crisis events, verifying aid requests and donations, and updating distribution status. Citizens can register, log in, and contribute items, funds, or services, while also tracking the progress of their donations. Support Seekers can register and request help based on their needs, and later track the status of their requests.

HelpBridge ensures secure login and role-based access, verified donation workflows, and transparent tracking of all activities. Its goal is to reduce delays, prevent mismanagement, and build a reliable channel for humanitarian aid, making crisis response faster, more effective, and trustworthy. By bringing structure to chaos, HelpBridge empowers communities to respond quickly and compassionately during times of urgent need.

User Roles & Functionalities:

- **Admin**

1. Login securely
2. forget password
3. Manage volunteers by CRUD operations
4. Manage users (citizens and support seekers)
5. Monitor all platform activities

- **Volunteer**

1. Login (provided by admin)
2. Create and manage crisis events by CRUD operation
3. Verify and approve donations and aid requests
4. Update distribution status
5. View history and records of all contributions

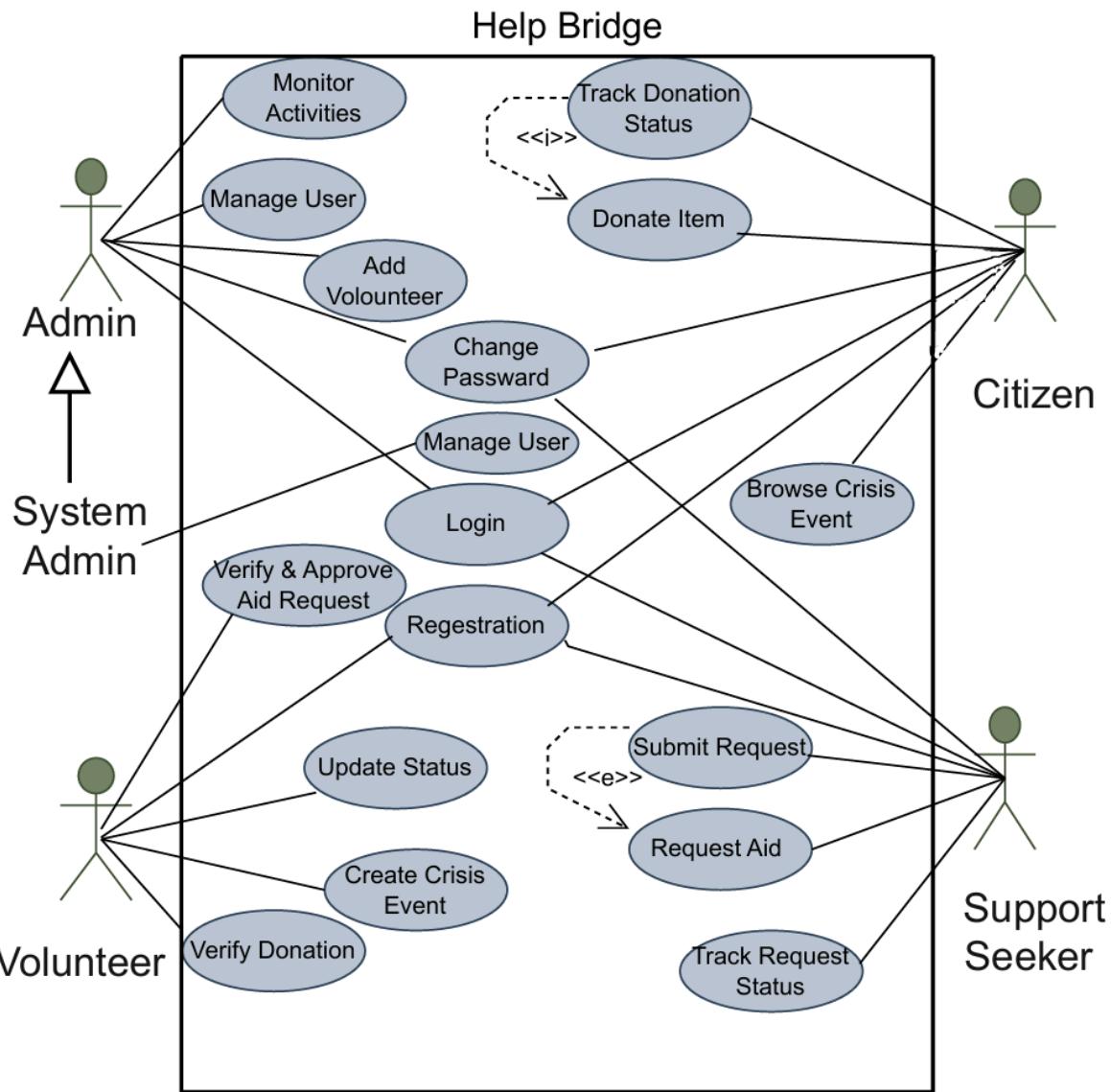
- **Citizen**

1. Register and log In

2. Forget password
 3. Donate items, funds, or services
 4. View donation history and current status
 5. Browse crisis events
- **Support Seeker**
 1. Register and log In
 2. Forget password
 3. Submit aid requests based on their needs
 4. Edit or update submitted requests
 5. Track request status (pending, approved, fulfilled)

HelpBridge makes relief efforts more effective by handling the entire process—from registration to approval and tracking. This organized approach delivers quick, transparent support when communities need it most.

Use Case Diagram:



User Story:

As A/An	I Want To	So That
Admin	Securely log in	I can access system management feature
	Recover password (Forgot Password)	I can regain access if I forget my credentials
	Manually add volunteers	Only trusted people can manage events
	Manage users	Only verified users can use the platform
	Monitor all platform activities	I can ensure proper use and performance
Volunteer	Securely log in	I can perform assigned task
	Create and manage crisis events	Citizen can donate to those in need
	Verify and approve donations	Only permitted contributions are accepted
	Verify and approve aid request	Support is given to valid seekers
	Update the distribution status	Users are informed about aid delivery
Citizen	Register and Log In	I can participate in donations
	Recover password if forgotten	I can always regain access to my account
	Donate items, funds or services	I can help affected people
	View donation history and current status	I can see how my help is being used
	Browse crisis events	I can choose where and how to donate
Support Seeker	Register and log in	I can request for help
	Recover password if forgotten	I can regain access to request aid when needed
	Submit aid request based on my needs	I can receive support
	Edit or update submitted aid requests	I can make corrections if my situation changes
	Track the status of my request	I know when and how I will get help

Product Requirement Document (PRD):

Goal and Objective	The goal of the HelpBridge project is to develop a secure, transparent, and user-friendly platform that connects donors, volunteers, and support seekers to enable efficient crisis response and aid distribution. This platform aims to centralize all donation and support activities, ensuring transparency through real-time tracking of donations and aid requests. It allows easy registration and role-based access for citizens, support seekers, volunteers, and admins. Volunteers can manage crisis events, verify aid and donations, while admins monitor all platform activities to ensure accountability and effective governance during times of crisis.
Client Information	
Product Type	Web Application
Domain	Web2
Access Layer	Admin, Volunteer, Citizen and Support Seeker
Design Required	Yes

Phase	Item No	Specification [Role]	User Story	Tags
Phase: 1		Auth Feature		
Feature 1	1	Login [admin] [volunteer]	I want to Securely log in so that i can access system management feature	Login
Feature 2	2	Register [citizen] [support seeker]	I want to Securely Register so that i can access feature	Register

Feature 3	3	Recover password [admin] [citizen] [support seeker]	I want to Recover password (Forgot Password) so that I can regain access if I forget my credentials	Recover Password
Phase: 1		Dashboard		
Feature 1	4	Menu	-[Admin] Dashboard menu: Add Volunteer, Monitor Activities, Manage Users, View Reports - [Volunteer] Dashboard menu: Verify Donation, Approve Request, Update Status, View Assigned Events -[Citizen] Dashboard menu: Donate Item, Track Donations, Browse Crisis Events -[Support Seeker] Dashboard menu: Submit Request, Track Request, Update Request, Contact Volunteer	Dashboard
Phase: 1		Donation and Request management		
Feature 1	5	Manage Donations [Citizen]	I want to donate items and track my donation history so that I	Donation Management

			can monitor my contributions	
Feature 2	6	Manage Requests [Support Seeker]	I want to submit and update requests so that I can get help when needed	Request Management
Feature 3	7	Handle Requests [Volunteer]	I want to approve, verify, or reject requests so that I can ensure only genuine needs are fulfilled	Volunteer Task Management
Phase: 1		Crisis & Event Management		
Feature 1	8	Manage Crisis Events [Admin]	I want to create and manage crisis events so that donations and requests are organized effectively	Manage Crisis Events
Feature 2	9	Browse Events [Citizen]	I want to browse ongoing crisis events so that I can choose where to donate	Browse Crisis Events
Feature 3	10	Request Help [Support Seeker]	I want to submit requests under a specific crisis event so that I can receive the right aid	Request under Crisis Event
Phase: 1		Reporting & Transparency		
Feature 1	11	Generate Reports [Admin]	I want to view donation summaries and	Admin Reports

			request summaries so that I can evaluate overall system performance	
Feature 2	12	Generate Reports [Volunteer]	I want to view lists of verified donations and handled requests so that I can track my contributions	Volunteer Reports
Feature 3	13	Generate Reports [Citizen]	I want to view my personal donation history so that I can track my impact	Citizen Reports
Feature 4	14	Generate Reports [Support Seeker]	I want to view my request history so that I can keep track of the support I received	Support Seeker Reports

Development Model

For our **HelpBridge** project, we will use **Scrum** as the main development model to manage work in sprints and deliver features incrementally.

Effort estimation:

Here, E= Effort in person-months or person-years(the amount of time, personnel devote to a specific project)

t= Project duration in months & years

B= Productivity Factors

P= Productivity Parameter

Assuming, t= 4 month

B= 3

P= 375 LOC per person month

LOC= 6000

$$\begin{aligned}\text{Effort Estimation} &= [\text{LOC} \times \text{B}^{0.33}/\text{P}]^3 \times (1 \times \text{t}^4) \\ &= [6000 \times 3^{0.33}/375]^3 \times (1 \times 4^4) \\ &= 48\end{aligned}$$

COCOMO :

here, PM= Person-months needed for project

SLOC= Source lines of code

P= Project complexity (1.04-1.24)

DM=Duration time in months

T=SLOC-dependent coefficient(0.32-0.38)

ST=average staffing necessary

For semi-detached software project type:

Coefficient <Effort Factor>=3.0

P=1.12

T=0.35

$$\begin{aligned}\text{Effort}=PM &= \text{Coefficient } <\text{Effort Factor}> * (\text{SLOC}/1000)^P \\ &= 3 * (6000/1000)^{1.12} \text{ Person/Month} \\ &= 22.32 \text{ Person/Month}\end{aligned}$$

Development Time= DM= 2.50*(PM)^T

= (2.50*22.32) Month

= 7.41 Month

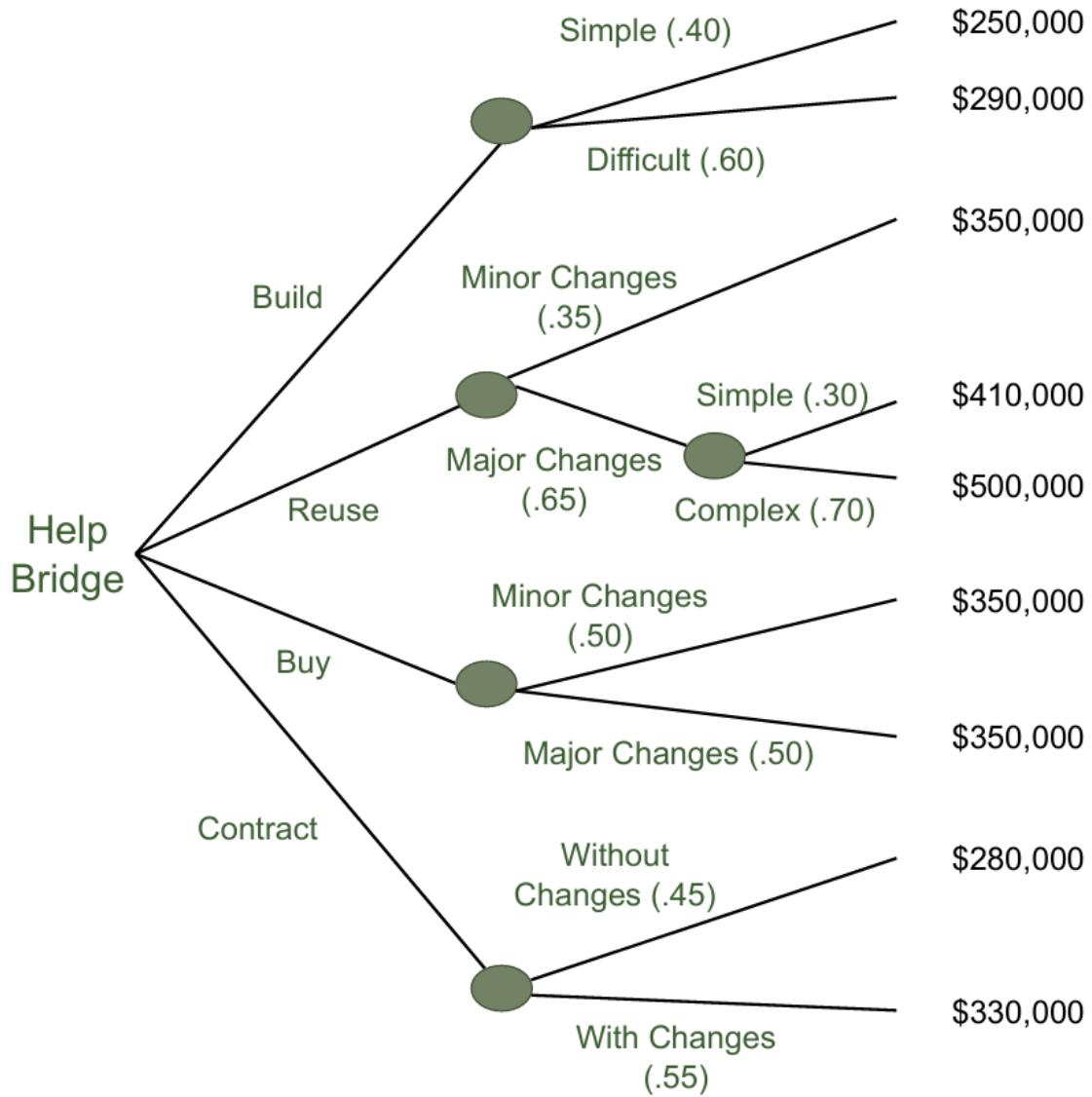
Required Number Of People, ST= PM/DM

$$=22.32/7.41$$

$$=3.01$$

$$=4$$

Make Buy Decision:



Calculate Expected Cost:

Expected Cost = (Path Probability) * (Estimated Path Cost)

Build:

Expected Cost = $0.40 * (\$250K) + 0.60 * (\$290K) = \$274K$

Reuse

Expected Cost = $0.35 * (\$350K) + 0.65 * 0.30 * (\$410K) + 0.65 * 0.70 * (\$500K) = \$430K$

Buy

Expected Cost = $0.50 * (\$350K) + 0.50 * (\$350K) = \$350K$

Contract

Expected Cost = $0.45 * (\$280K) + 0.55 * (\$330K) = \$308K$

EVA Excel File:

[Eva Calculation.xlsx](#)

Here,

Given Total Task= 120

Effort Estimated= 1806 Person Day

BCWP= 572

BCWS= 666

ACWP= 527.50

Budget At Completion:

BAC= 1806

Schedule Performance Index:

SPI= BCWP/BCWS = $572/666 = 0.86$

Schedule Variance:

$$SV = BCWP - BCWS = 572 - 666 = -94 \text{ person-day}$$

Cost Performance Index:

$$CPI = BCWP / ACWP = 572 / 527.50 = 1.08$$

Cost Variance:

$$CV = BCWP - ACWP = 572 - 527.50 = 44.5 \text{ person-day}$$

$$\% \text{ schedule for completion} = BCWS / BAC = 666 / 1806 = 36.86\%$$

$$\% \text{ complete} = BCWP / BAC = 572 / 1806 = 31.67\%$$

