

# Donation Drive

## PROJECT REPORT

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### Group Members:

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# Introduction

A platform for raising funds for a medical emergency or social cause by gathering voluntary financial contributions by engaging individuals, businesses, charitable foundations or governmental agencies.

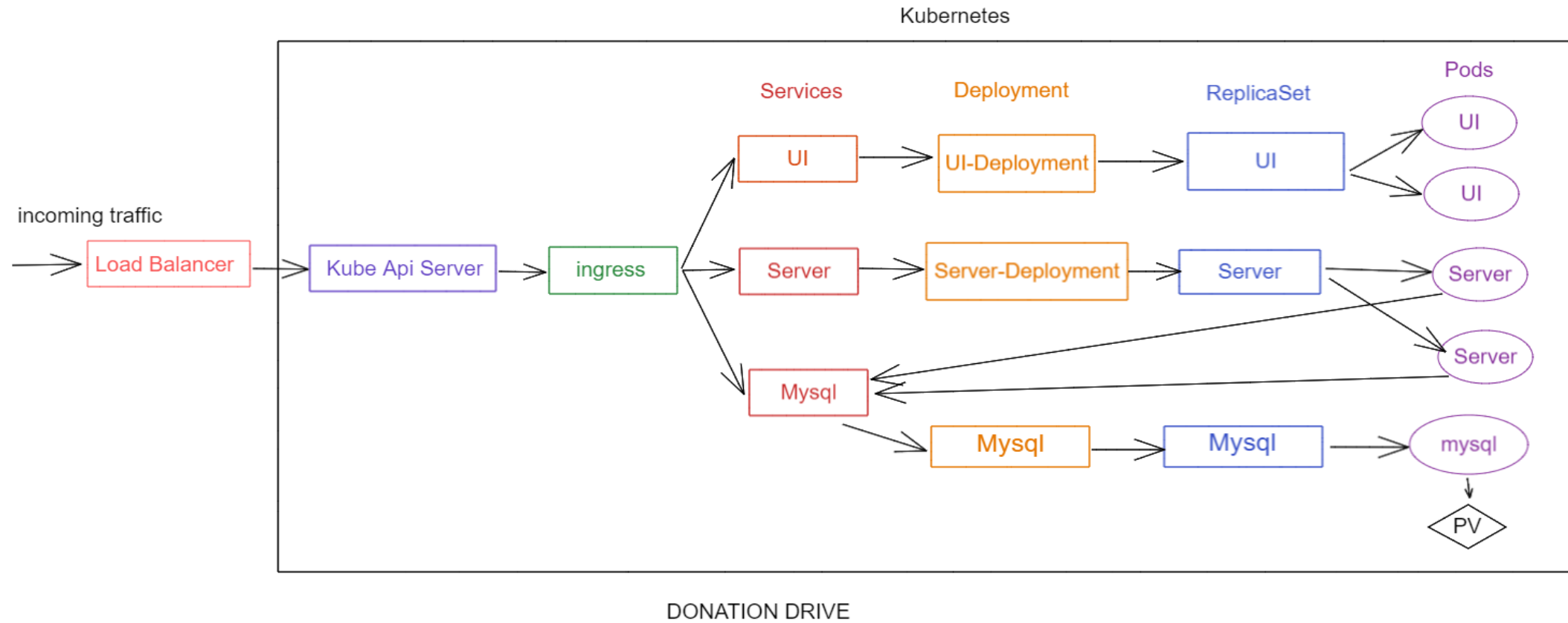
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# Features

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- 1. Login/Signup:** Users can signup/login before creating a post or making a donation
- 2. Create Post:** It allows the user to create a post for the donation.
- 3. Give donation:** The user can donate a certain amount to the post.
- 4. Check donations:** Users can check the donations made and who donated how much and to whom.
- 5. Check Fundraisers:** Users can check all the fundraisers and donate the one they feel to.

# Project Architecture





# Project Demo

MAIN PAGE

# Main Page 2

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## Start a Fundraiser in three simple steps

- Start your fundraiser**  
It's take only 2 minutes. Just tell us a few details about you and the cause you are raising funds for.
- Share your fundraiser**  
All you need to do is share the fundraiser with your friends and family. In no time, support will start pouring in.
- Withdraw Funds**  
The funds raised can be withdrawn without any hassle directly to your bank account.

Start a Fundraiser for FREE

## Causes you can raise funds for

Be it for a personal need, social cause or a creative idea - you can count on us for the project that you want to raise funds for.



# Signup/Login Page

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SIGNUP

LOGIN

First name\*

mike

Last name\*

tyson

Email\*

mike.tyson@boxer.com

Password\*

\*\*\*\*\*

SIGNUP

# Raise Funds

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### Enter Details for fundraising

Title\*

cancer

Cause\*


sunlight

Needed Amount\*

10000000

End Date\*

10/02/2021



Category\*

Animal

RAISE FUNDS



# Donators Page

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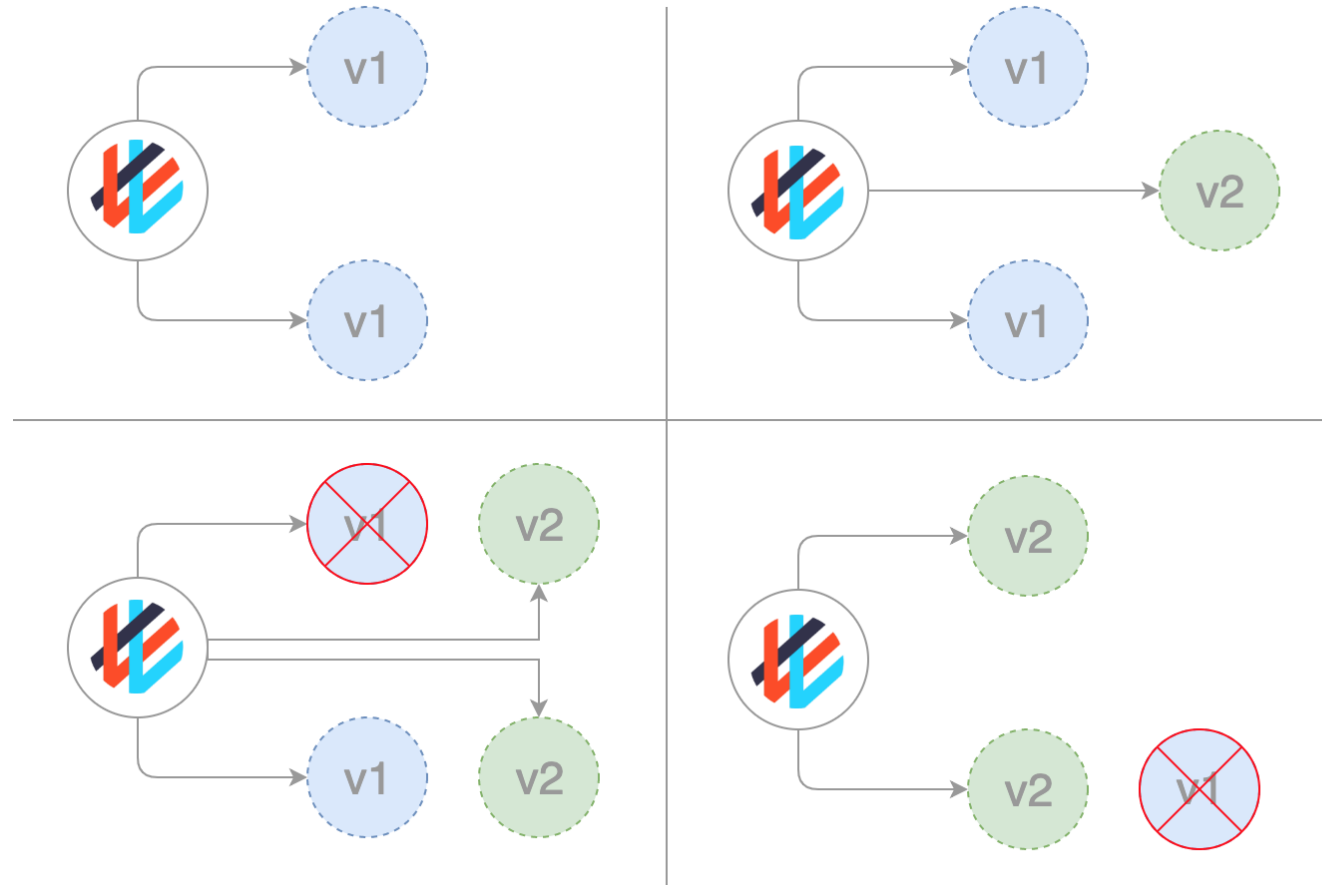
## Donators

A list of great people who helped the needy.

Name	Email	Amount	Donated to
A K	abhi@gmail.op	10000000	G M
A K	abhi@gmail.op	10000	G M
A K	abhi@gmail.op	200000	G M
A K	abhi@gmail.op	1000000	G M
A K	abhi@gmail.op	100000000	G M
A K	abhi@gmail.op	100000000	G M
A K	abhi@gmail.op	1000000	G M
A K	abhi@gmail.op	10000000	G M
A K	abhi@gmail.op	200000	G M
A K	abhi@gmail.op	500000	G M

# Deploying on Production

We have followed rolling deployment strategy which slowly replaces previous versions of an application with new versions of an application by completely replacing the infrastructure on which the application is running.



ui-deployment-5fdf698846-9x8xd	1/1	Running	0	40m
ui-deployment-5fdf698846-9x8xd	1/1	Terminating	0	40m
ui-deployment-5fdf698846-2jxtv	0/1	Pending	0	0s
ui-deployment-5fdf698846-2jxtv	0/1	Pending	0	0s
ui-deployment-5fdf698846-2jxtv	0/1	ContainerCreating	0	0s
ui-deployment-5fdf698846-9x8xd	1/1	Terminating	0	40m
ui-deployment-5fdf698846-2jxtv	0/1	ContainerCreating	0	1s
ui-deployment-5fdf698846-9x8xd	0/1	Terminating	0	40m
ui-deployment-5fdf698846-9x8xd	0/1	Terminating	0	40m
ui-deployment-5fdf698846-9x8xd	0/1	Terminating	0	40m
ui-deployment-5fdf698846-2jxtv	1/1	Running	0	3s

# Implementation of rolling deployment

# Toolsets used

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## **Git and GitHub**

Git is a version control system to keep track of changes to files and projects over time. GitHub is a cloud-based hosting service that hosts Git repositories online, making it easier for developers to share code. Repositories are folders which contain intentional snapshots of progress called commits.



# GitHub snapshots (Merger PR's)

The screenshot shows the GitHub interface for the repository 'abhianuj / donation\_drive'. The top navigation bar includes the GitHub logo, a search bar, and links to 'Pull requests', 'Issues', 'Marketplace', and 'Explore'. The repository name and 'Public' status are displayed. On the right, there are buttons for 'Stop ignoring' (0), 'Fork' (2), and 'Star' (0). Below the navigation bar, a tabbed interface shows 'Code', 'Issues', 'Pull requests' (selected), 'Actions', 'Projects', 'Wiki', 'Security', 'Insights', and 'Settings'. The 'Pull requests' tab is active, showing a list of pull requests. The search bar at the top of the list contains 'is:pr is:closed'. A green button 'New pull request' is visible. The list of pull requests includes:

- ☐ 0 Open ✓ 23 Closed
- ☐ Pipeline implemented with k8s integration ✓  
#25 by Gourab1998 was merged 1 hour ago
- ☐ added signup step in test  
#24 by avinash-rao was merged 20 days ago
- ☐ Avinash selenium  
#23 by avinash-rao was merged 21 days ago
- ☐ readme updated  
#22 by Gourab1998 was merged 24 days ago
- ☐ docs added  
#21 by Gourab1998 was merged 24 days ago
- ☐ Sonar finished ✓  
#20 by Gourab1998 was merged on Oct 19, 2021
- ☐ Unit tests

# GitHub snapshots (Branches used)

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Default branch					
main	Updated 1 hour ago by Gourab1998	✓	Default		
Your branches					
bb	Updated 3 months ago by gourabatsap	26   0	New pull request		
aa	Updated 3 months ago by gourabatsap	26   0	New pull request		
unit_tests	Updated 3 months ago by I524896	30   0	#19 Merged		
fundraising_and_donations	Updated 3 months ago by I524896	57   0	#10 Merged		
login_signup	Updated 3 months ago by I524896	62   0	#8 Merged		
View more of your branches >					
Active branches					
gourab	Updated 20 days ago by avinash-rao	15   2	New pull request		
avinash_selenium	Updated 20 days ago by avinash-rao	17   0	#24 Merged		
bb	Updated 3 months ago by gourabatsap	26   0	New pull request		
aa	Updated 3 months ago by gourabatsap	26   0	New pull request		
unit_tests	Updated 3 months ago by I524896	30   0	#19 Merged		
View more active branches >					
Stale branches					
doners_list	Updated 3 months ago by I524896	76   0	#1 Merged		

# JUnit

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```
[INFO] -----  
[INFO]  T E S T S  
[INFO] -----  
[INFO] Running com.microservice.fundraiser.Utills.PostMapperTest  
[INFO] Tests run: 1, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 1.087 s - in com.microservice.fundraiser.Utills.PostMapperTest  
[INFO] Running com.microservice.fundraiser.Utills.DonationMapperTest  
[INFO] Tests run: 1, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0.007 s - in com.microservice.fundraiser.Utills.DonationMapperTest  
[INFO] Running com.microservice.fundraiser.controller.UserControllerTest  
[INFO] Tests run: 3, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0.199 s - in com.microservice.fundraiser.controller.UserControllerTest  
[INFO] Running com.microservice.fundraiser.controller.PostsControllerTest  
[INFO] Tests run: 3, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0.033 s - in com.microservice.fundraiser.controller.PostsControllerTest  
[INFO] Running com.microservice.fundraiser.controller.DonorControllerTest  
[INFO] Tests run: 4, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0.106 s - in com.microservice.fundraiser.controller.DonorControllerTest  
[INFO]
```

The JUnit logo, featuring the word "JUnit" in a stylized font. The "J" is green, and the "Unit" is red.

# Apache Maven

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Maven is a build automation tool used primarily for Java projects. It addresses two aspects of building software: how software is built, and its dependencies. An XML file describes the software project being built, its dependencies on other external modules and components, the build order, directories, and required plug-ins. Maven dynamically downloads Java libraries and Maven plugins from one or more repositories such as the Maven 2 Central Repository and stores them in a local cache.





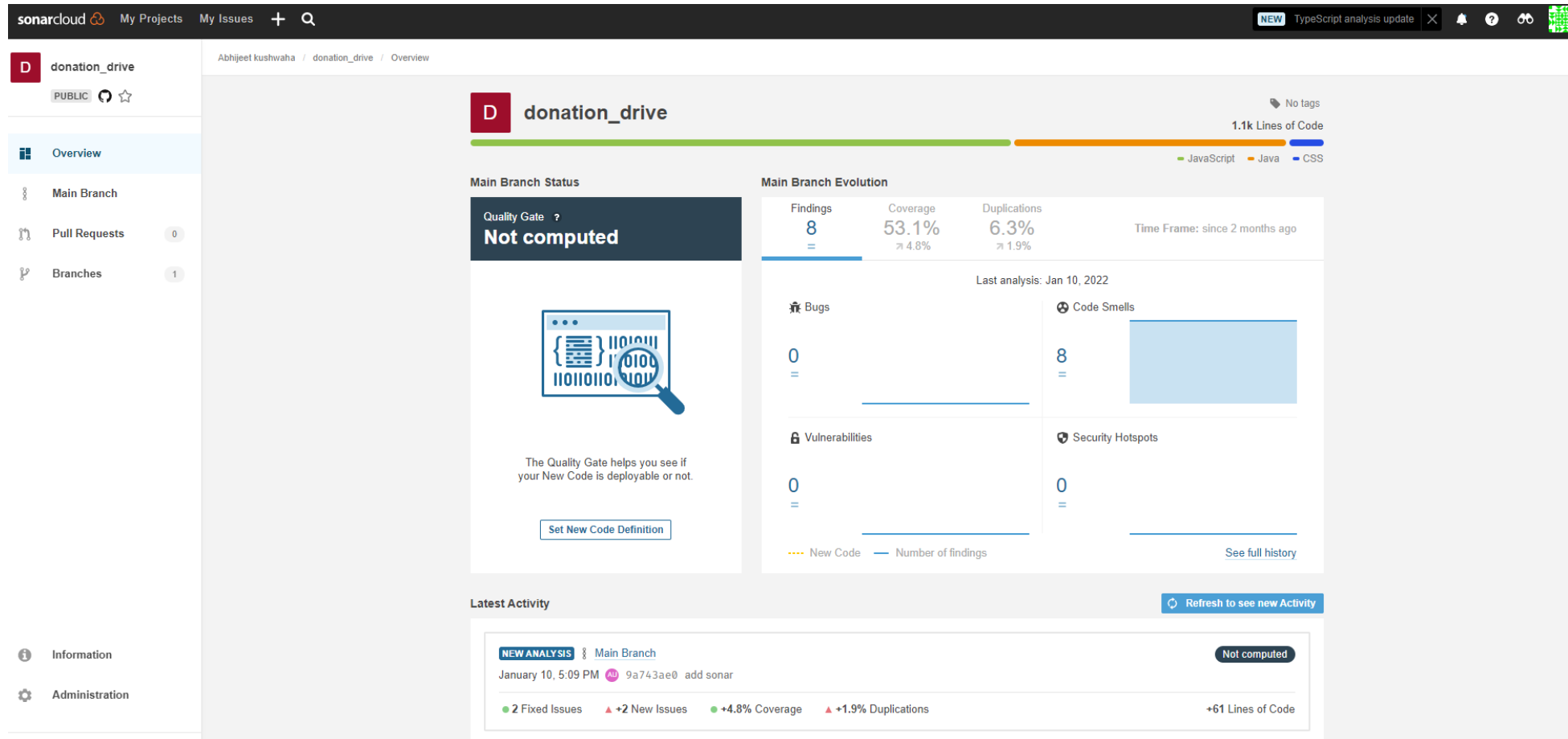
# SonarQube

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SonarQube is an open-source platform for continuous inspection of code quality to perform automatic reviews with static analysis of code to detect bugs, code smells, and security vulnerabilities.



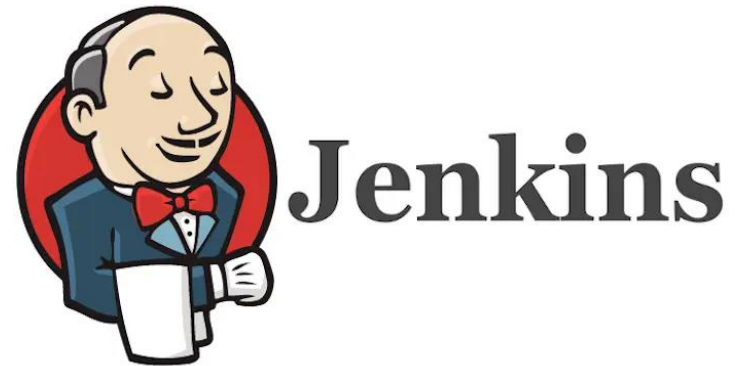
# Sonar Cloud



# Jenkins

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Jenkins is an open source automation server which enables developers around the world to reliably build, test, and deploy their software. It helps automate the parts of software development related to building, testing, and deploying, facilitating continuous integration and continuous delivery.



```

7      agent{
8          docker { image 'node:16.13.1-alpine' }
9      }
10     steps {
11         dir("ui"){
12             sh 'npm install -g eslint'
13             sh 'npm install eslint-plugin-react --save-dev'
14             sh 'eslint . --fix'
15         }
16     }
17 }
18 stage('Server Lint') {
19     agent{
20         docker {
21             image 'maven:3.8.1-adoptopenjdk-11'
22         }
23     }
24     steps {
25         dir("server"){
26             sh 'mvn pmd:pmd'
27         }
28     }
29 }
30 }
31 }
32 stage('Unit Test') {
33     parallel {
34         stage('Ui') {
35             agent{
36                 docker { image 'node:16.13.1-alpine' }
37             }
38             steps {
39                 dir("ui"){
40                     sh 'npm install'
41                     sh 'npm run test'
42                     stash includes: 'coverage/**', name: 'uiunit'
43                 }
44             }

```

# Jenkinsfile(Declarative Syntax)

[https://github.com/abhianuj/donation\\_drive/blob/main/Jenkinsfile](https://github.com/abhianuj/donation_drive/blob/main/Jenkinsfile)

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# Babel

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**Babel** is a free and open-source JavaScript transpiler that is mainly used to convert ECMAScript(ES6+) code into a backwards compatible version of JavaScript that can be run by older JavaScript engines. Babel is a popular tool for using the newest features of the JavaScript programming language.



# Docker

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Docker is a set of platform as a service (PaaS) products that use OS-level virtualization to deliver software in packages called containers.

Containers are isolated from one another and bundle their own software, libraries and configuration files; they can communicate with each other through well-defined channels.

Because all of the containers share the services of a single operating system kernel, they use fewer resources than virtual machines.



We have used multi-stage docker files which gives the following benefit

- Smaller image size
- Faster builds
- Better Caching
- Lesser number of applications in production so less attack surface to exploit

## UI Dockerfile

```
1 FROM node:16-buster-slim as build
2 WORKDIR /app
3 ENV NODE_ENV production
4 COPY ui/package.json ui/.env ./
5 RUN npm install --only=prod
6 COPY ui ./
7 RUN npm run build
8
9 FROM nginx:stable-alpine
10 COPY --from=build app/build /usr/share/nginx/html
11 EXPOSE 80
12 CMD ["nginx", "-g", "daemon off;"]
```

## Server Dockerfile

```
1 From maven:3.8.4-eclipse-temurin-17-alpine as build
2 COPY . .
3 WORKDIR server
4 RUN mvn clean install -Dmaven.test.skip=true -ntp
5
6 FROM openjdk:11-jre-slim
7 COPY --from=build server/target/fundraiser-0.0.1-SNAPSHOT.jar .
8 ENTRYPOINT [ "java", "-jar", "fundraiser-0.0.1-SNAPSHOT.jar", "--spring.profiles.active=prod" ]
```

# Kubernetes

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Kubernetes is an open-source container orchestration system for automating software deployment, scaling, and management.

We have used gardener to provision a free trial cluster in AWS.

[Gardener](#) is an SAP-driven open source project that tackles real-world demands for hyperscale Kubernetes services, regardless of infrastructure.



Gardener



```

apiVersion: apps/v1
kind: Deployment
metadata:
  name: backend-deployment
  labels:
    app: backend
spec:
  replicas: 2
  selector:
    matchLabels:
      app: backend
  template:
    metadata:
      labels:
        app: backend
    spec:
      containers:
        - name: backend
          image: gourabsap/fundraiser-server
          imagePullPolicy: Always
          ports:
            - containerPort: 8080
          env:
            # Use secret in real usage
            - name: MYSQL_ROOT_PASSWORD
              valueFrom:
                secretKeyRef:
                  name: mysql-secret
                  key: MYSQL_ROOT_PASSWORD
---
apiVersion: apps/v1
kind: Deployment

```

# Kubernetes YAML files

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[https://github.com/abhianuj/donation\\_drive/blob/main/k8s.yaml](https://github.com/abhianuj/donation_drive/blob/main/k8s.yaml)

[tps://github.com/abhianuj/donation\\_drive/blob/main/mysql-k8s.yaml](https://github.com/abhianuj/donation_drive/blob/main/mysql-k8s.yaml)

```
C:\Users\I524895>kubectl get all
```

NAME	READY	STATUS	RESTARTS	AGE
pod/backend-deployment-7754f6768c-ptqmk	1/1	Running	0	24h
pod/backend-deployment-7754f6768c-vnv4b	1/1	Running	0	89m
pod/mysql-7446cc569d-dj9bw	1/1	Running	0	24h
pod/ui-deployment-5fdf698846-2jxtv	1/1	Running	0	48m
pod/ui-deployment-5fdf698846-75fr8	1/1	Running	0	24h

NAME	TYPE	CLUSTER-IP	EXTERNAL-IP	PORT(S)	AGE
service/backend-api	ClusterIP	100.70.212.132	<none>	80/TCP	24h
service/kubernetes	ClusterIP	100.64.0.1	<none>	443/TCP	24h
service/mysql	ClusterIP	None	<none>	3306/TCP	24h
service/ui	ClusterIP	100.71.28.97	<none>	80/TCP	24h

NAME	READY	UP-TO-DATE	AVAILABLE	AGE
deployment.apps/backend-deployment	2/2	2	2	24h
deployment.apps/mysql	1/1	1	1	24h
deployment.apps/ui-deployment	2/2	2	2	24h

NAME	DESIRED	CURRENT	READY	AGE
replicaset.apps/backend-deployment-7754f6768c	2	2	2	24h
replicaset.apps/mysql-7446cc569d	1	1	1	24h
replicaset.apps/ui-deployment-5fdf698846	2	2	2	24h

## Different Kubernetes Objects

# Pipeline Stages

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- 1. Linting** - Jenkins can validate, or “lint” a Declarative Pipeline from the command line before actually running it.
- 2. Unit Testing** - Jenkins Pipeline Unit is a testing framework for unit testing Jenkins pipelines. This testing framework lets you write unit tests on the configuration and conditional logic of the pipeline code.
- 3. Stage (Build/Test/Deploy)** - A stage block contains a series of steps in a pipeline. That is, the build, test, and deploy processes all come together in a stage
- 4. CI/CD Pipeline** - CI/CD pipeline introduces automation and continuous monitoring throughout the lifecycle of a software product.

← → ↻ 🏠 ⚠️ Not secure | 10.76.106.45:8080/blue/organizations/jenkins/donation\_drive/detail/jenkins/38/pipeline

✓ donation\_drive < 38

Pipeline

Changes

Tests

Artifacts

↺

✎

⚙️

📁

Logout

✕

Branch: jenkins

Commit: 262d1e9

4m 5s

7 minutes ago

Changes by gourab.mukherjee

Started by user User

```
graph LR; Start((Start)) --> Lint; Lint --> UnitTest; UnitTest --> Sonar; Sonar --> Build; Build --> Push; Push --> Deploy; Deploy --> End((End));
```

Deploy - 5s

Restart Deploy

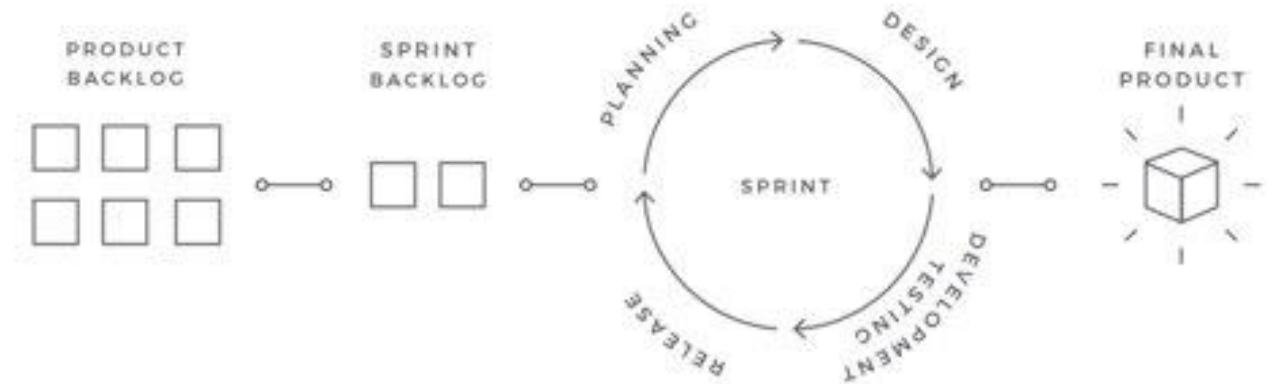
✓	> Check out from version control	<1s
✓	> Checks if running on a Unix-like node	<1s
✓	> docker inspect -f . bitnami/kubectl:1.21.8-debian-10-r24 — Shell Script	<1s
✓	> kubectl --kubeconfig \${kubeconfig} apply -f k8s.yaml — Shell Script	1s

[https://github.com/abhianuj/donation\\_drive/blob/main/sonar-project.properties](https://github.com/abhianuj/donation_drive/blob/main/sonar-project.properties)

# Agile Practices-

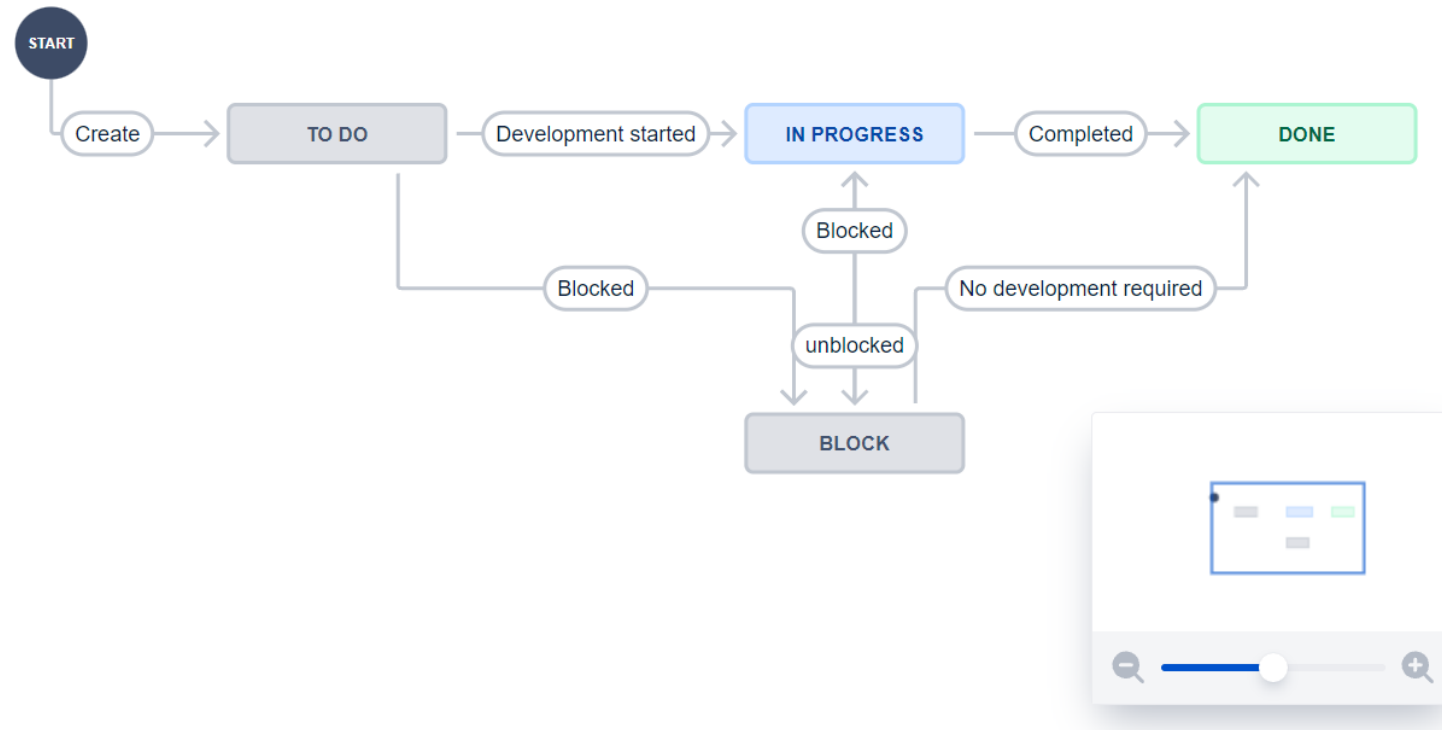
As a team we divided our time in tasks & sprints to discuss about planning, design, development and release.

## Agile Development Cycle



# Jira Workflow

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# Jira Snapshots

[Add epic](#) / [FR-10](#)

## Fundraiser UI

[Attach](#) [Add a child issue](#) [Link issue](#) [▼](#)

Description  
UI For fundraisers

Tools used: React

Testing: jest

Child issues

Order by [▼](#) [...](#) [+](#)

100% Done

<a href="#">FR-11</a>	Configuration	<a href="#">GM</a>	DONE ✓
<a href="#">FR-12</a>	Home page	<a href="#">GM</a>	DONE ✓
<a href="#">FR-13</a>	Signup and Login	<a href="#">GM</a>	DONE ✓
<a href="#">FR-14</a>	Fundraisers page	<a href="#">GM</a>	DONE ✓
<a href="#">FR-15</a>	Display page	<a href="#">GM</a>	DONE ✓
<a href="#">FR-16</a>	test configuration	<a href="#">GM</a>	DONE ✓
<a href="#">FR-17</a>	Unit tests	<a href="#">GM</a>	DONE ✓

[A](#)

Add a comment...

Pro tip: press **M** to comment

Done ▼

Click on the [📌](#) next to a field label to start pinning.

Details

Assignee [A](#) AB

Labels None

Sprint Sprint 2

Story point estimate 20

Development [NOT INTEGRATED](#)

[Branch](#)

[Commit](#)

[Pull request](#)

[Integrate source code](#)

Reporter [A](#) AB

Created 23 minutes ago

Updated 20 minutes ago

Resolved 20 minutes ago

[Configure](#)

Projects / FundRaiser

## Sprint 2

[🔗](#) [☆](#) [🕒](#) 0 days remaining [Complete sprint](#) [...](#)

[A](#) [GM](#) [+](#)

Epic ▼ Label ▼

GROUP BY [None](#) [Insights](#)

TO DO 1 ISSUE

Email Verification

Feature

[FR-19](#) [GM](#)

IN PROGRESS 1 ISSUE

Selenium testing

Testing

[FR-20](#) [GM](#)

DONE 8 ISSUES ✓

Change name of user to firstName and lastName

BACKEND

[FR-7](#) ✓ [GM](#)

Design database schema

BACKEND

[FR-3](#) ✓ [GM](#)

Donate to posts by authenticated user

BACKEND

[FR-6](#) ✓ [GM](#)

BLOCK

+

## Challenges and Recommendations

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1. Focus on tools with the introduction of new tools it needs to be ensured about its security, trained staff and able to integrate it with the existing system. It also needs to meet the certain standard and metrics. The matured tools and project suitable tools needs to be used.

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2. Automation Tests holds a prominent role in CI/CD deployments. For DevOps, Continuous Testing also needs to take into priority along with Integration and Deployments. Testing of the deployable needs to undergo Test Automation Suite.

---

3. Cost and Budget Factors in integration and operational complexity adds up to the overall cost and this needs to be checked.



## Current Issues -



1. Email verification is missing.



2. Some of the code smells still need fixes.



3. Code coverage needs to be increased.



4. Acceptance test not dockerized, hence platform dependent.

## Recommendation to overcome issues -

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1. Email verification with **OTP** validation in backend.

---

2. In near future we will invest time to code smells minimize them standardize the code.

---

3. As the application grows it will be difficult for us to manually test everything, so we will spend some time to increase the code coverage.

---

4. Need to research more and see how to fix issues we are facing for dockerizing acceptance tests.

# Learnings



1. DevOps principle.



2. Test Automation.



3. Good DevOps practices.



4. Knowledge of various Tools used in development.



5. Agile methodology.



THANK YOU

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