A Project report on

UNICODE

A Dissertation submitted to JNTU Hyderabad in partial fulfillment of the academic requirements for the award of the degree.

Bachelor of Technology

in

Computer Science and Engineering

Submitted by

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(An Autonomous Institution under UGC & JNTUH, Approved by AICTE, Permanently Affiliated to JNTUH, Accredited by NBA.)

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2019- 2023

CMR COLLEGE OF ENGINEERING & TECHNOLOGY

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CERTIFICATE

This is to certify that the Mini Project-1 report entitled **"UNICODE" being** submitted by **P.N.V.J.Kiran(19H51A05P6),P.Sathvika(19H51A05P5)S Rahul(19H51A05L9)** in partial fulfillment for the award of **Bachelor of Technology in Computer Science and Engineering** is a record of Bonafide work carried out his/her under my guidance and supervision.

The results embody in this project report have not been submitted to any other University or Institute for the award of any Degree.

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ABSTRACT

There will be lot of students developing new websites and applications during their under graduation. But they do not know about the security issues in their applications. Also, their will be some students who have some knowledge about the security features and also know how to test applications against vulnerabilities.

We are trying to build a platform for the college students where they can allow pen testers to test and report about the vulnerabilities present in their applications. This will help both students and testers to gain the knowledge about the industry standards.

CHAPTER 1

1.1 PROJECT INTRODUCTION

- A bug bounty program is a deal offered by many websites, organizations and software developers by which individuals can receive recognition and compensation for reporting bugs
- Our project "UNICODE" is a web-based application that helps developers to get awareness about the bugs and resolve them before the general people are aware of it
- This helps developers to secure their applications and also helps the pen testers in gaining knowledge.
- This application is most useful for students.

1.2 PROJECT SCOPE

- The project titled as "UNICODE" is a web-based application. This software provides an opportunity for the students to post their web-based project details on this platform.
- This helps them in reporting as well as fixing the bugs.
- The scope of this project is within the college community so that students would be beneficial out of it.

1.2.1 PROJECT AIM

- Many Students will be developing some different types of projects but they are not aware about the vulnerabilities of it.
- They may not know how to fix the bugs in their projects.
- The main aim of designing this web-based application is to help students in fixing their bugs and also, they will be gaining knowledge out of it

CHAPTER 2

BACKGROUND WORK

2.1 EXISTING SOLUTIONS

- There are many existing solutions for bug bounty.
- Bug bounty programs have been implemented by a large number of organizations, including Mozilla, Facebook, Yahoo, Google, Microsoft and internet bug bounty. A **bug bounty program** is a deal offered by many websites, organizations and software developers by which individuals can receive recognition and compensation for reporting bugs, especially those pertaining to security exploits and vulnerabilities
- Hacker One was started by hackers and security leaders who are driven by a passion to make the internet safer. Our platform is the industry standard for hacker-powered security. We partner with the global hacker community to surface the most relevant security issues of our customers before they can be exploited by criminals

2.2 MOTIVATION

- Our main moto to make this project is as many students make projects, they are not aware of the vulnerabilities of it. So, we thought of to design a platform that make students comfortable in identifying resolving their bugs before general people are aware of it.
- This platform helps students in gaining knowledge.

2.3 LITEREATURE REVIEW

Drawing upon crowdsourcing, Bug Bounty Programs (BBPs) are entering the mainstream security practice in organizations. We analyze five main areas of BBP practice namely: scoping of BBPs, timing of crowd engagement, submission quality, firm-researcher communication and hacker motivation. We discuss issues in each area and recommend practices to enhance BBP effectiveness. This paper informs research and practice about issues and best practices in crowdsourcing information security for timely discovery and remediation of vulnerabilities

CHAPTER 3

PROPOSED SYSTEM

3.1 Introduction

Our proposed solution is "**UNICODE**". This helps students to post their websites and web-based application details on this platform. So that the pen testers will test their websites and applications, and they will be reporting the bugs from it. This helps students in gaining knowledge from it.

3.2 Theoretical/ Conceptual Framework

Fig 3.2.1

- To start First sign up into the platform by using your email
- A verification mail will be sent to the email provided during sign up and verify your account Before logging in.
- After verifying Log into your account
- You will be redirected to the Home page where you can view all the projects of the others
- For finding the details of the project click on the view button
- There you can find the details of the project and also the reports reported by other users.
- You can also submit any report about the vulnerability you found in their project

3.2.1 Hardware Requirements

Laptop and Desktop

3.2.2 Software Requirements

- Software Requirements specifies the logical characteristics of each interface and software components of the system.
- React js library is used for the frontend design and for handling the server side we used express library on top on Node js Runtime

CHAPTER 4

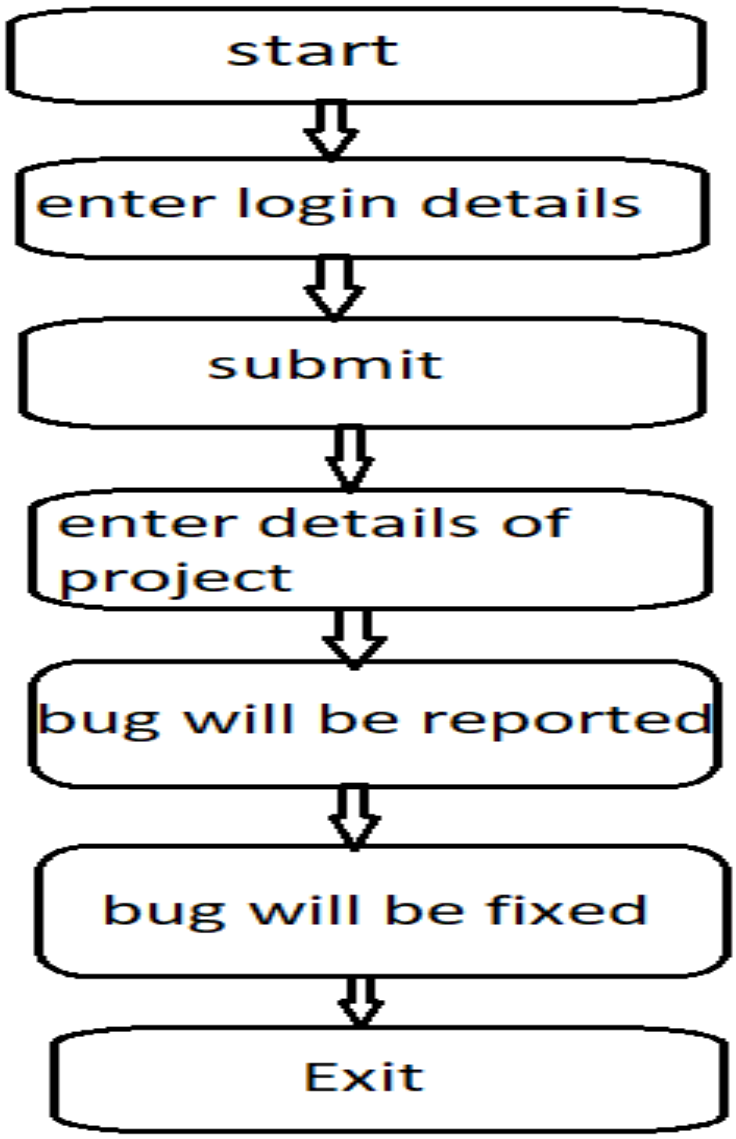
DESIGNING

4.1 Preliminary design

Tools, which assist in preliminary design process, are UML Diagrams and ER diagrams.

4.1.1 UML Diagram

i. Activity Diagram



CHAPTER 5:
RESULTS AND DISCUSSION

5.1 Implementation:

5.1.1. Server Code

```
import express from "express";
import cors from "cors";
import mongoose from "mongoose";
import bodyParser from "body-parser";
import nodemailer from 'nodemailer';
import jwt from "jsonwebtoken"
import  env from "dotenv"

/*model imports */
import user from "./models.js";
import { Projects } from "./models.js";

env.config()


/*user credentials */

var useremail="";
var accesstoken ;


/*app config */

const app = express();
const port = 5001;
app.use(cors());
app.use(bodyParser.urlencoded({extended:true}));
app.use(bodyParser.json());


/*mongodb setup */

const local_mongodb_url = `mongodb://localhost/kiranperaka`;

mongoose.connect(local_mongodb_url,(err)=>{
```

```
mongoose.connect(local_mongodb_url,(err)=>{
    if(err)
    {
        console.log("not connected successfully");
    }
    else{
        console.log("connected successfully");
    }
});

//mail service
const transporter = nodemailer.createTransport({
    service:"gmail",
    auth:{
        user:"unicode.suppport@gmail.com",
        pass:"kiran@123"
    }
})

app.post("/login",(req,res)=>{
    const user_email = req.body.user_email;
    const passcode  = req.body.password;

    user.findOne({email:user_email},(err,result)=>{
        if(err){
            res.json({err:true});
        }
      else if(!result){
            res.json({found:false})
        }
        else{
            if(result.password === passcode && result.verified){
                useremail = result.email;

                accesstoken = jwt.sign({useremail:result.name},process.env.ACCESS_TOKEN,{expiresIn:"1 day"})
```

```
                res.json({token:accesstoken,login:true,name:result.name})
            }
            else{
                if(result.verified===false){
                    res.json({verified:false})
                }else{
                res.json({login:false});
                }
            }
        }
    });
});

app.post("/signup",(req,res)=>{
    const username = req.body.username;
    const passcode = req.body.password;
    const user_email = req.body.email;
    user.findOne({email:user_email},(err,result)=>{

        if(err){
            res.json({err:true});
        }
        else{
            if(result){

                res.json({found:true});
            }
            else{
                const save_data = user({
                    name:username,
                    email:user_email,
                    password:passcode,
                    verified:false
                });

                save_data.save();
```

```
                save_data.save();
                useremail = save_data.email;
                const link= jwt.sign({email:user_email},process.env.ACCESS_TOKEN,{expiresIn:"10min"})
                var mailOptions = {
                    from:"unicode.suppport@gmail.com",
                    to: user_email,
                    subject:"Verify Your Account",
                    text:`Please verify your account by clicking this link http://localhost:3000/verifyemail/${link} link expires in 10 mins`
                }
                transporter.sendMail({...mailOptions},(err,info)=>{
                    if(err){
                       if(err.code){
                            res.sendStatus(404)
                       }
                    }
                    else{
                        res.status(200).json({signedup:true})
                    }
                })
            }
        }
    })
});
app.post("/forgetpassword",(req,res)=>{
    const email = req.body.email
    const link= jwt.sign({email:req.body.email},process.env.ACCESS_TOKEN,{expiresIn:"10min"})
    var mailOptions = {
        from:"support@unicode.com",
        to: email,
        subject:"Verify Your Account",
        text:`Please change your account password by clicking this link http://localhost:3000/changepassword/${link} link expires in 10 mins`
    }
    transporter.sendMail({...mailOptions},(err,info)=>{
        if(err){
           if(err.code){
```

```
                res.sendStatus(404)
            }
        }
        else{
            res.sendStatus(200)
        }
    })

})
app.post("/changepassword",authenticateToken,(req,res)=>{
    const email = req.emaildata.email;
    const password = req.body.password
    user.updateOne({email:email},{password:password},(err,result)=>{
        if(err){
            res.status(404).json({updation:false})
        }
        else{
            res.status(200).json({updation:true})
        }
    })
})
app.post("/deleteComment",authenticateToken,(req,res)=>{
    const project_id = req.body.project_id;
    const comment_id = req.body.comment_id;
    Projects.findOne({_id:project_id},(err,result)=>{
        if(err){
            res.json({err:true});
        }
        else
        {
            if(result){
                for(var i=0;i<result.comments.length;i++){

                    if(comment_id==result.comments[i]._id){
                        result.comments.splice(i,1);
```

```
                result.save();
                res.json(result);
            }
            else
            {
                res.json({found:false});
            }
        }
    })

})

app.get("/myProjects",authenticateToken,(req,res)=>{
    Projects.findOne({user_email:useremail},(err,result)=>{
        if(err){
            res.json({err:true});
        }
        else
        {
            if(result){
                res.json(result);
            }
            else{
                res.send([]);
            }
        }
    })
});

app.post("/addproject",authenticateToken,(req,res)=>{
    Projects.findOne(

        {
            user_email:req.body.user_email,
            $or: [
```

```
220         if(err){
221             res.json({err:true});
222         }
223         else{
224             if(result){
225                 res.json({exists:true});
226             }
227             else
228             {
229                 const save_data = new Projects({
230                     user_email:req.body.user_email,
231                     title:req.body.title,
232                     description:req.body.description,
233                     date:new Date().toString(),
234                     project_link:req.body.project_link,
235                     comments:[]
236                 });
237                 save_data.save();
238                 res.json({added:true});
239             }
240         }
241     });
242 });
243
244 app.get("/projects",authenticateToken,(req,res)=>{
245     Projects.find({},(err,result)=>{
246
247         if(err){
248             res.json({err:true});
249         }
250         else{
251             if(result){
252                 res.status(200).send(result);
253             }
254             else
255             {
```

Fig 5.1.2

5.1.2 Frontend Code

```
//libraries
import React from "react";
import { useSelector } from "react-redux";
import { Outlet, NavLink } from "react-router-dom";

//styling
import "./../styles/HomePage.css";



const HomePage = () => {
  const username = useSelector((state) => state.login.username);
  return (
    <div className="homepage">
      <div className="homepage-left">
        <div className="homepage-navbar">
          <NavLink
            to="/home/projects"
            className="homepage-navbar-item"
            activeClassName="active"
          >
            Home
          </NavLink>
          <NavLink
            className="homepage-navbar-item"
            activeClassName="active"
            to="/home/myprojects"
          >
            My Projects
          </NavLink>

          <NavLink

            className="homepage-navbar-item"

```

```
            to="/home/projects"
            className="homepage-navbar-item"
            activeClassName="active"
          >
            Home
          </NavLink>
          <NavLink
            className="homepage-navbar-item"
            activeClassName="active"
            to="/home/myprojects"
          >
            My Projects
          </NavLink>

          <NavLink

            className="homepage-navbar-item"

            to="/home/addproject"
          >
            Add Project
          </NavLink>
        </div>
      </div>
      <div className="homepage-right">
        <div className="homepage-navbar-item-active">
          <div className="welcome-title">
            <p>Welcome {username}!</p>
          </div>
          <Outlet />
        </div>
      </div>
    </div>
  );
};
export default HomePage;
```

```
import React from "react";
import  ReactDOM  from "react-dom"
import {BrowserRouter as Router} from 'react-router-dom'
import { Provider } from "react-redux";

import App from './components/App'
import Store from "./features/Store"

ReactDOM.render(
    <Router>
    <Provider store= {Store}>
       <App/>
    </Provider>
    </Router>
    ,document.getElementById('root')
)
```

Fig 5.1.3

5.2 Result:

5.2.1 Icon of Application

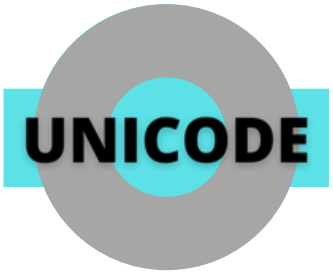
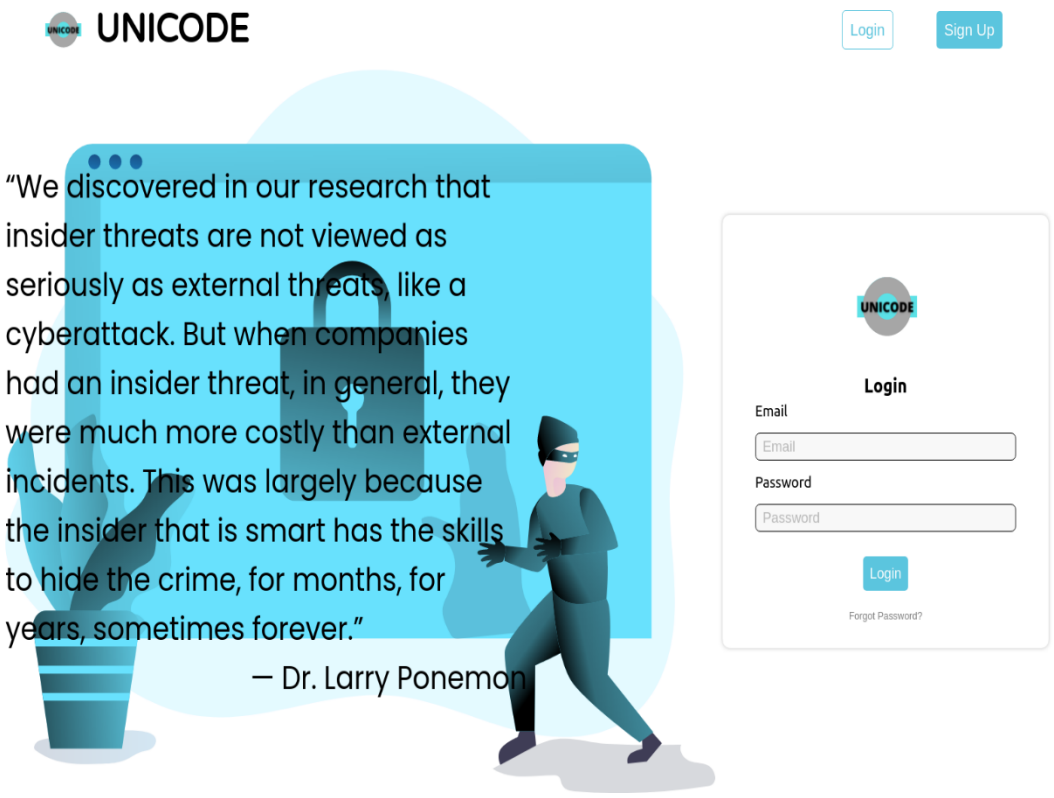
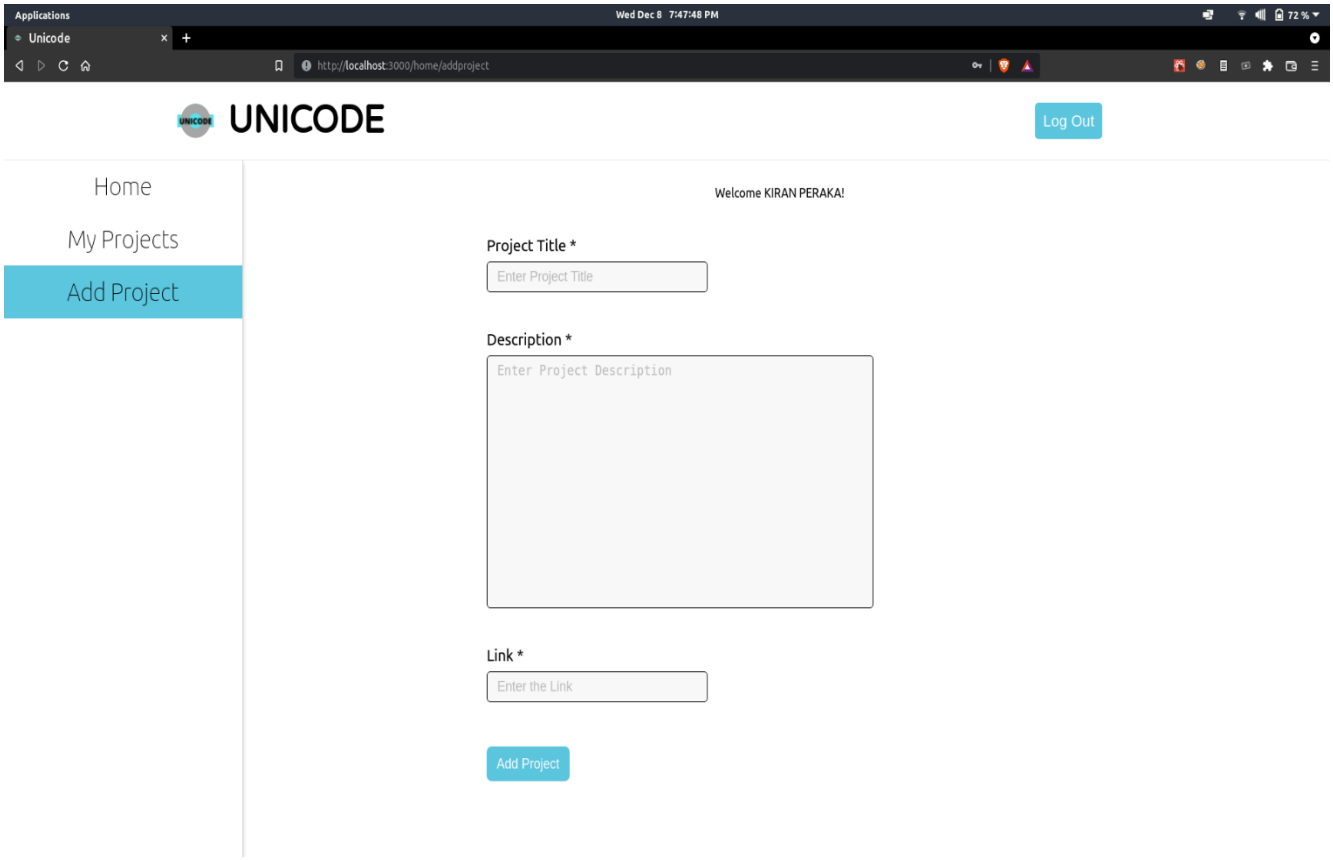


Fig 5.2.4

5.2.2 Application images





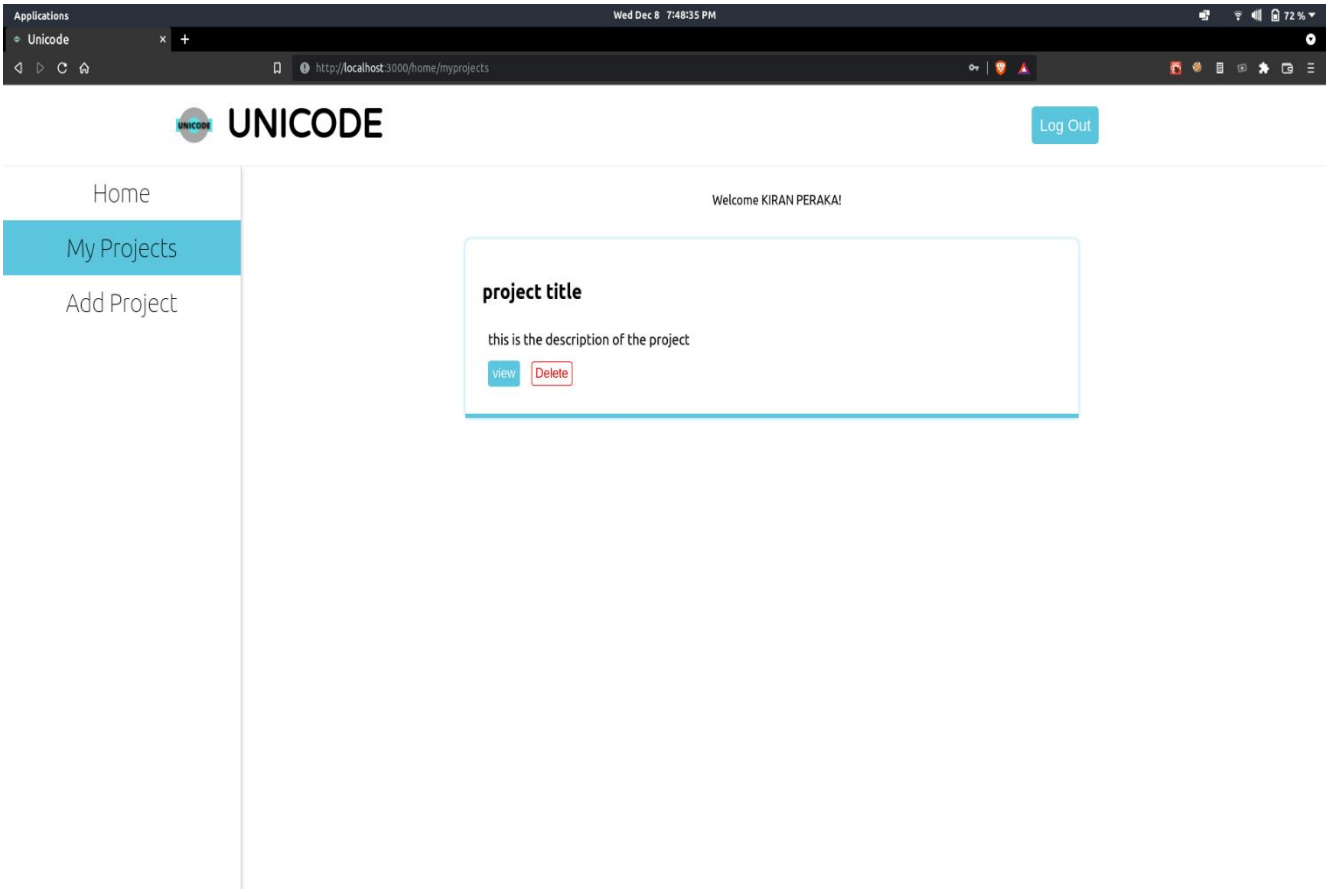

Applications
Wed Dec 8 7:48:35 PM
Unicode
http://localhost:3000/home/myprojects
UNICODE
Log Out
Home
My Projects
Add Project
Welcome KIRAN PERAKA!
project title
this is the description of the project
view
Delete

Fig 5.2.4

CHAPTER 6

CONCLUSION AND FUTURE WORK

6.1 Conclusions:

- As this project is developed only within the scope of college community, it will help students to secure their applications and it will also help them in knowing about the vulnerabilities of their projects.
- This platform will help students in fixing their vulnerabilities with the help of pen testers and also in gaining knowledge.

6.1 Future works:

As this application is developed only within the scope of the college community, we can further make this platform Available for the students outside our college community by providing access to them

6.2 References

- https://www.researchgate.net/publication/333098279_Bug_Bounty_Programs_for_Cybersecurity_Practices_Issues_and_Recommendationsbug bounty.pptx
- https://www.hackerone.com