**Project Report: Personal Portfolio Website**

**Declaration**

I hereby declare that the project entitled **"Personal Portfolio Website with Backend Contact Form"** submitted for academic evaluation is my own work. The information presented in this report is true to the best of my knowledge and belief. Any references or resources used have been appropriately acknowledged.

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**1. Introduction**

This project is a personal portfolio website developed to showcase my skills, projects, and experience. It includes a user-friendly design with smooth navigation, a dark/light theme toggle, and an integrated contact form connected to a Node.js backend using Nodemailer to handle form submissions.

**2. Objective of the Project**

* To create a responsive and interactive personal portfolio website.
* To implement a working contact form with email functionality.
* To deploy the frontend using GitHub Pages.
* To deploy the backend using Render for live contact form submission.

**3. Technologies Used**

**Frontend:**

* HTML5
* CSS3
* JavaScript
* Font Awesome
* GitHub Pages (for hosting)

**Backend:**

* Node.js
* Express.js
* Nodemailer
* Render (for deployment)

**4. Project Structure**

The project is divided into two main folders:

* **portfolio\_frontend:** Contains all frontend files like index.html, about.html, projects.html, contact.html, style.css, and script.js.
  + Each HTML page includes a consistent navigation bar, footer, and a theme toggle switch.
  + The contact page features a live validation form.
* **portfolio\_backend:** Contains the backend server files.
  + Includes server.js to handle POST requests.
  + Uses Nodemailer to send emails and Render for deployment.
  + Environment variables are set using Render's dashboard.

**5. Frontend Design**

The frontend contains the following sections:

* **Home:** Landing page introducing the developer.
* **About:** Summary of background, skills, and interests.
* **Projects:** Showcases individual projects with links and tech stack badges.
* **Contact:** Contains a form for visitors to send messages.

Features include:

* Responsive layout for desktop and mobile views.
* Theme toggle (dark and light mode).
* Contact form with live validation.

**6. Backend Functionality**

The backend is built using Node.js and Express. It performs the following tasks:

* Receives contact form submissions from the frontend.
* Sends a notification email to the developer's Gmail.
* Sends an automatic thank-you email to the user who submitted the form.
* CORS is configured to allow frontend requests.

**7. Deployment**

* **Frontend:** Hosted using GitHub Pages.  
  **URL:** <https://anurag472002.github.io/my_portfolio>
* **Backend:** Hosted using Render.  
  **URL:** [https://portfolio-backend-zzrn.onrender.com](https://portfolio-backend-zzrn.onrender.com/)

Environment variables such as email and app password are securely stored in Render.

**8. Challenges Faced**

* Configuring CORS for frontend-backend communication.
* Setting up Gmail App Passwords for secure email sending.
* Deployment setup with Render requiring environment variables and correct file structure.
* Resolving build errors during Render setup.

**9. Conclusion**

The project successfully demonstrates the integration of a frontend portfolio website with backend email functionality. It is fully functional, mobile responsive, and suitable for showcasing to potential employers or clients.

**10. Future Scope**

* Add a project filtering and search feature.
* Integrate a blog or update section.
* Store messages in a database like MongoDB.
* Include animations and transitions for enhanced UI/UX.
* Add a resume download button.
* Add a testimonials or client feedback section.

**11. References**

* Node.js Official Documentation
* Express.js Guide
* Nodemailer Documentation
* Render Deployment Docs
* GitHub Pages Documentation