Focus Room Web App with AI Prompt

Submitted in the partial fulfillment of the requirements

for the degree of B.Tech in Computer Engineering

by

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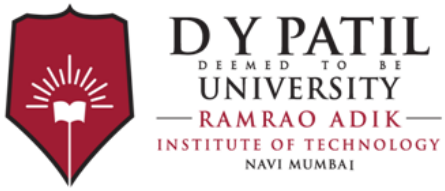

Department of Computer Engineering

Ramrao Adik Institute of Technology

Sector 7, Nerul, Navi Mumbai

(Under the ambit of D. Y. Patil Deemed to be University)

April 2023

Ramrao Adik Institute of Technology

(Under the ambit of D. Y. Patil Deemed to be University)

Dr. D. Y. Patil Vidyanagar, Sector 7, Nerul, Navi Mumbai 400 706

CERTIFICATE

This is to certify that, the Mini Project-III report entitled

Focus Room Web App with AI Prompt

is a bonafide work done by

Pratik Bhat (21CE1305)

Nityanand Bankar (21CE1391)

Palak Tiwari (21CE1307)

Janhvi Raut (21CE1412)

and is submitted in the partial fulfillment of the requirement for the degree of

B.Tech in Computer Engineering

to the

D. Y. Patil Deemed to be University

Supervisor	Project Co-ordinator
(Dr. Digambar Puri)	**(Dr. Ekta Sarda)**
Head of Department	Principal
(Dr. Amarsinh V. Vidhate)	**(Dr. Mukesh D. Patil)**

Mini Project Report - III Approval

This is to certify that the Mini Project - III entitled ***" Focus Room Web App with AI Prompt"*** is a bonafide work done by ***Pratik Bhat (21CE1305)***, ***Nityanand Bankar (21CE1391)***, ***Palak Tiwari(21CE1307)*** and ***Janhvi Raut(21CE1412)*** under the supervision of ***Dr. Digambar Puri***. This Mini Project is approved in the partial fulfillment of the requirement for the degree of ***B.tech in Computer Engineering***

Internal Examiner :

1. .....

2. .....

External Examiners :

1. .....

2. .....

Date : .../.../.....

Place : .....

DECLARATION

I declare that this written submission represents my ideas and does not involve plagiarism. I have adequately cited and referenced the original sources wherever others' ideas or words have been included. I also declare that I have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/data/fact/source in my submission. I understand that any violation of the above will be cause for disciplinary action against me by the Institute and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been taken when needed.

Date: _____

Pratik Bhat (21CE1305)

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Abstract

Platforms that combine several elements like the pomodoro timer, calendar, to-do lists, motivational quotations, and sticky notes into a single dashboard have become increasingly popular in the productivity website market. The goal of this consolidation is to improve user productivity and simplify task management by offering a full toolkit for planning, scheduling, and carrying out everyday tasks. Moreover, the incorporation of a ”Focus Room” function in these platforms provides users with an online forum for cooperative conversations and concentrated work sessions, promoting efficiency and teamwork. This combination of technologies into one interface meets the changing needs of people and groups looking for more productivity and organization in their personal and professional lives.

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Chapter 1

Introduction

1.1 Overview

With features including a Pomodoro timer, calendar, to-do lists, and a dedicated focus area, our Focus Room Web App aims to increase productivity. These tools are designed to help users manage activities more effectively, increase productivity and optimize their workflow. The platform also has an integrated AI model that is meant to help users with any queries or uncertainties they could have while working. An AI model offers prompt direction and explanation on a range of duties and subjects. For example, customers can rely on the AI to provide them with prompt work-related responses, which will increase productivity and cut down on troubleshooting time. The addition of the AI model, when combined with tools like the Pomodoro timer for planned work intervals and the focus chamber for distraction free concentration further.

1.2 Motivation

The idea of this project came from seeing how people struggle in today's fast paced work environment. There is a need for tools that can help people work faster and at the same time allow them to juggle their duties in view of myriad distractions and apparent loss of time. To address this need, the Focus Room project seeks to offer an all-inclusive solution which combines essential productivity utilities with functions such as an AI model integration. Our goal is to enhance efficiency by creating a system which lets users identify distraction-free stations for focused work, plan and manage tasks easily as well as find spaces conducive for concentration. What drives us is the desire to enable individuals achieve their maximum potentials.

1.3 Problem Statement and Objectives

1.3.1 Problem Statement

The project aims to address the challenge of optimizing productivity and task management for users by developing a web application called the Focus Room. This platform integrates various productivity tools, including a Pomodoro timer, calendar, to-do lists, and a focus room feature, enhanced by an inbuilt AI model for addressing user questions and doubts. The goal is to create a seamless and efficient environment that empowers users to enhance their workflow, improve time management, and achieve their goals effectively.

1.3.2 Objectives

The objective of our project is to develop a cutting-edge web application called the ”Focus Room” that integrates AI capabilities to facilitate deep work and enhance productivity by addressing user doubts and questions in real-time. This platform aims to create a virtual environment where individuals can engage in focused tasks without interruptions. The primary goal is to leverage AI-driven prompt systems to provide immediate clarification and assistance to users, thereby reducing cognitive load and promoting continuous workflow. The AI component will adapt over time, learning from user interactions to refine its prompt suggestions and improve overall effectiveness. Our objective is to create a dynamic and interactive platform that not only supports focused work but also serves as a virtual mentor, enabling users to overcome obstacles and maximize their productivity in a distraction-free setting. Through this project, we aim to revolutionize the way individuals approach deep work, leveraging AI to empower users and optimize their workflow efficiency.

1.4 Organization of the report

The report is organised as follows: The Chapter 2 reviews the literature. Chapter 3 focuses on defining the system's issue. That includes problem categorization, proposed technologies, device architecture, and hardware/software requirements. On the other hand, Chapter 5 describes the inference and future work on the technique to be utilized as a more improved model.

Chapter 2

Literature Survey

2.1 Survey of Existing System

A review of current systems for when we talk about apps and tools for a ”focus room web app” or things like it that help you pay attention and get more work done, a bunch of them pop up. Let’s look at some of the existing systems:

Forest App

The Forest app is a popular productivity tool that helps users stay focused and manage distractions. Users plant virtual trees that grow over a set period (often 25 minutes) during which they must stay focused on their task. If they leave the app, the tree dies, encouraging uninterrupted work periods.

Focus@Will

Focus@Will is a music streaming service that uses neuroscience-based music selections to enhance focus and productivity. It offers curated playlists designed to boost concentration and reduce distractions, making it easier for users to maintain attention during work sessions.

Freedom

Freedom is an app that blocks distracting websites, apps, and notifications across devices to help users maintain focus and manage digital distractions. It allows users to create custom blocklists and schedule focused work sessions.

Noisli

Noisli is a background noise generator that provides customizable soundscapes to enhance focus and relaxation. Users can mix different ambient sounds like rain, forest, or white noise to create an environment conducive to deep work.

Brain.fm

Brain.fm is a music streaming service that uses AI-generated music to enhance focus, relaxation and sleep. The music is designed to influence brain activity and improve cognitive performance during tasks.

The survey of existing focus room web applications suggests a thriving industry dedicated to enhance productivity and concentration. The prevalence of Pomodoro Technique apps and comprehensive blockers like Freedom underscores the demand for structured time management and digital distraction management tools in today's work environment. The survey shows a promising future for the focus room web application market as people become more conscious of the value of concentrated work sessions and the necessity of encouraging surroundings to counteract the distractions of contemporary technology.

2.2 Limitations of Existing System or Research Gap

Many of the pre-existing systems only provide a one-size-fits-all approach to enhancing focus, lacking sufficient personalization. There is a need for systems that adapt to individual work preferences, cognitive styles, and attention spans to maximize effectiveness. In addition, many of these system are paid and you need to get a subscription to avail yourself of all the features.

Although some tools use AI for certain services such as choosing music or planning time, AI can be further developed in terms of providing necessary interaction when working in a separated office space. For example, AI can help to respond to difficult questions, get personalized advice, and change suggested actions considering the user's mood.

Further studies of a more rigorous scientific nature should be conducted to prove the efficacy

of such techniques as certain types of ambient sounds, management methods related to the way work is performed, or AI-driven reminders to stay on track.

Evidence-based practices are necessary for better-developed solutions. Longitudinal studies and psychological, behavioral follow-up concerning the effect of focus rooms has on the productivity and stress levels of long-term users must be implemented. The focus of some of the research may be on behavior change or habits formed over time.

Ultimately, it will be the combined dedication of developers to put personalization first, utilize advanced AI interactions, fully integrate with existing utilities, test each feature in real-world settings, run a detailed analysis of long-term effects, and commitment to total inclusiveness that will allow for the creation of effective focus room web applications. Developers who meet these challenges can revolutionize the interactions of others at work, thereby creating a more effective and inclusive solution for the enhancement of productivity and focus.

Chapter 3

Proposed System

3.1 Problem Statement

The idea behind the Focus Room Web App is to deal with these challenges by providing a single platform to handle tasks, time, and concentration. Additionally, it will offer smart assistance through an integrated AI prompt system. By using technologies like React, JavaScript, Node js, CSS and HTML. The app will have a user-friendly interface that can be accessed on different devices and platforms. The following are the project's main goals and difficulties:

Seamless Integration of Productivity Tools

Integrating various productivity tools such as the Pomodoro timer, calendar, to-do lists and focus room feature into a cohesive web application using React and JavaScript and managing the complexity of integrating multiple tools requires planning and coordination to ensure smooth communication between components while maintaining code modularity and scalability.

Implementation of AI-Powered Prompt System

Incorporate an AI model capable of understanding and addressing user queries and doubts, involving back-end logic in Node js and front-end integration with asynchronous JavaScript requests for developing and integrating an effective AI model for real-time interactions.

User-Centric Design and Experience

Design an intuitive and visually appealing user interface using HTML and CSS to enhance user engagement and satisfaction. Ensuring cross-platform compatibility and consistent user experience across devices and browsers adds complexity to front-end development, requiring consideration of browser behavior, device capabilities, and responsive design principles.

Customization and Personalization Features

Provide users with customizable workspace and personalized settings, implemented through dynamic UI elements in React and back-end data storage in Node js.
subsectionPerformance Optimization and Scalability Optimize application performance and scalability to deliver a smooth user experience involves efficient use of vite.js and a scalable architecture. Balancing performance with functionality and scalability throughout development requires careful optimization of code execution, data fetching, and rendering processes, as well as consideration of resource constraints and load balancing strategies.

3.2 Proposed Methodology/Techniques

The methodology for developing the productivity platform integrates several key techniques to create a cohesive user experience. Essential elements including the Pomodoro timer, calendar, to-do list, quotes, sticky notes, and the Focus Room are first developed and integrated, then prioritized using a modular strategy for flexibility and scalability. Furthermore, the utilization of Focus Room boosts efficiency by offering instantaneous support for addressing uncertainties when working on assignments. The technologies are utilized to implement features such as the Pomodoro timer, calendar, to-do list, quotes, sticky notes, and the Focus Room. JavaScript, accounting for the implementation, enables dynamic functionality and interactivity within the platform, while CSS, contributing is employed for styling and visual enhancements. HTML, with a minimal contribution, structures the content of the platform. Interface development is guided by user-centric design concepts, which guarantee intuitive usability and aesthetic appeal through iterative design and testing procedures. Thorough testing and quality assurance confirm the platform's dependability and performance, resulting in a feature-rich toolkit designed to promote targeted productivity and effective job management.

3.3 System Design

Making the Focus Room system means putting together parts for both the front-end and back-end that work well and are easy for people to use.

Front-end Architecture

The front-end part is made with HTML to organize the stuff you see, CSS to make it look good, and React.js to make it work when you click around. Things like the short break timer, calendar, things to do list, sayings, little reminder papers, and the Focus Room are made using React.js to work fast and be easy to use.

Back-end Development

It is made using JavaScript and Node js which lets it run smoothly. Node js works well for doing many things at once without waiting in line, which is good for handling the logic at the server, getting and sending data, and working with data. The back-end functions include managing data, and dealing with APIs using JavaScript and Node js.

API Integration and Communication

Google's Gemini API is being connected and integrated with our AI prompt model "Quasar AI". A designated chat box has been designed which is responsible to deliever and recieve the queries and solutions respectively.

User Authentication and Security Measures

With the use of Google's Firebase, a back-end cloud computing service which helps user to login with your logged in google accounts keeping your information and credential secure.

Performance Optimization

Use of Vite js to set up a development environment for various frameworks like React and even for a JavaScript app with a dev server and hot reloading by following just three commands.

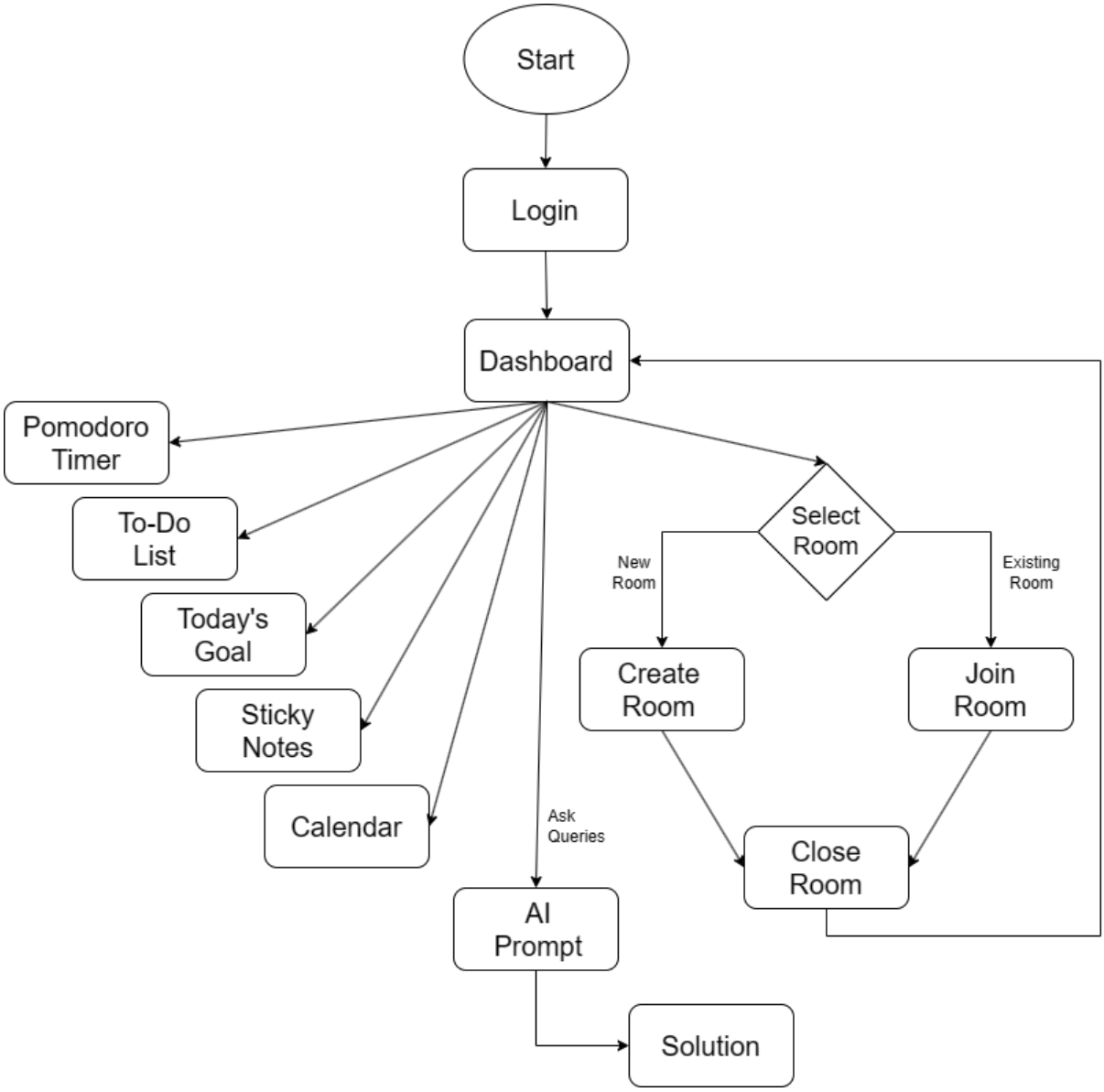


Figure 3.1: Flowchart of our Web App

3.4 Details of Hardware/Software Requirement

Windows 7, Windows 8, Windows 8.1, Windows 10 or later An Intel Pentium 4 processor or later that's SSE3 capable Mac.

To use Chrome browser on Mac, you'll need: OS X El Capitan 10.11 or later Linux

To use Chrome browser on Linux, you'll need: 64-bit Ubuntu 18.04+, Debian 10+, open SUSE 15.2+, or Fedora Linux 32+ An Intel Pentium 4 processor or later that's SSE3 capable

Chapter 4

Results and Discussion

4.1 Implementation Details

This web application has been implemented using HTML and CSS as the front-end technologies and React.js for front-end framework. For the backend implementation, JavaScript and Node js have been utilized. The AI prompt is integrated with Google's Gemini API framework for the our web app to clear doubts and questions of users. This allows the chat bot to send user queries to the API model and receive responses back for displaying it to the user. Lastly, we have used Vite js to set up a development environment for faster reloading.

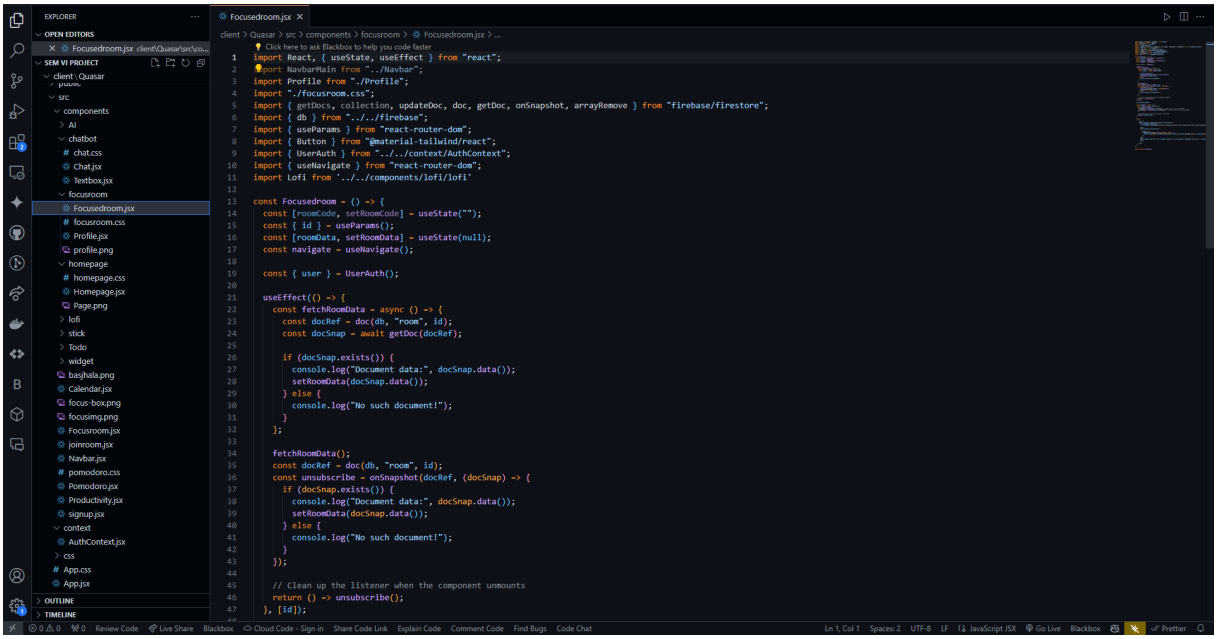
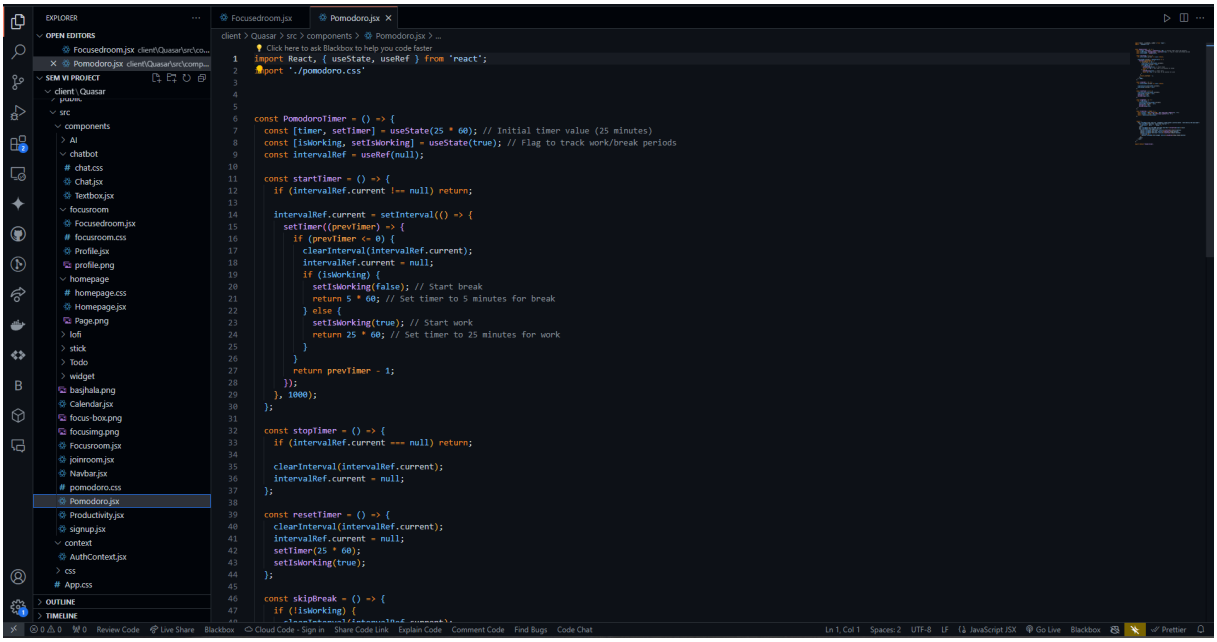
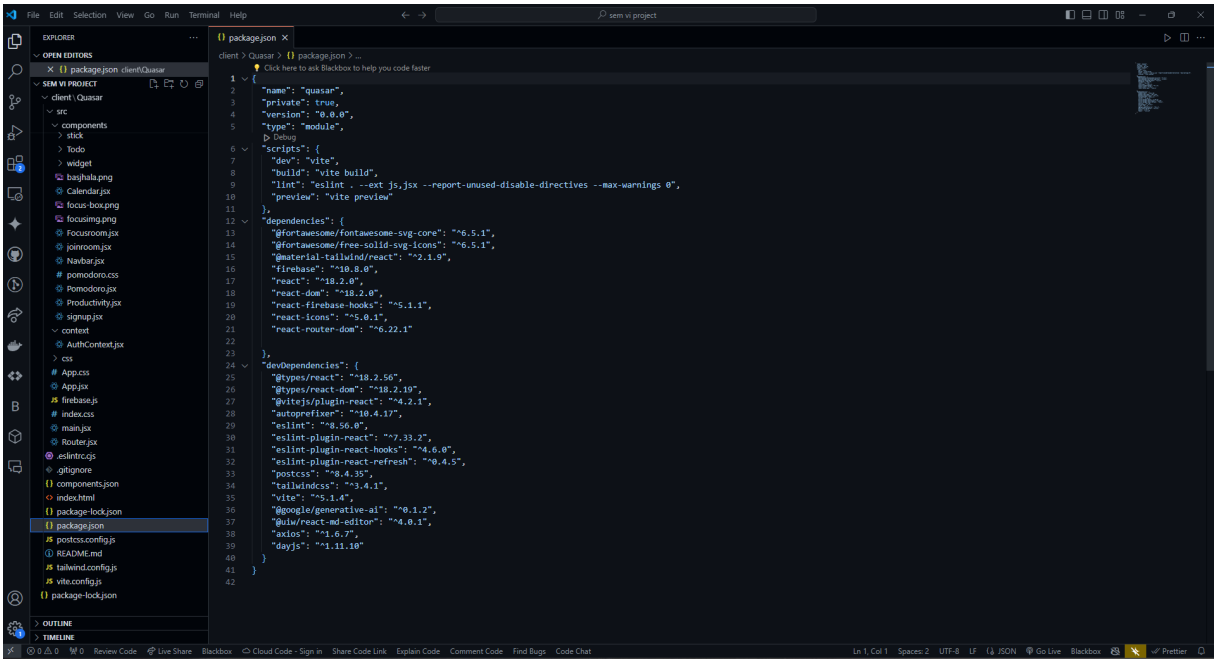


Figure 4.1: Focus Room Code



```jsx
import React, { useState, useRef } from 'react';
import './pomodoro.css'


const PomodoroTimer = () => {
  const [timer, setTimer] = useState(25 * 60); // Initial timer value (25 minutes)
  const [isWorking, setIsWorking] = useState(true); // Flag to track work/break periods
  const intervalRef = useRef(null);

  const startTimer = () => {
    if (intervalRef.current !== null) return;

    intervalRef.current = setInterval(() => {
      setTimer((prevTimer) => {
        if (prevTimer <= 0) {
          clearInterval(intervalRef.current);
          intervalRef.current = null;
          if (isWorking) {
            setIsWorking(false); // Start break
            return 5 * 60; // Set timer to 5 minutes for break
          } else {
            setIsWorking(true); // Start work
            return 25 * 60; // Set timer to 25 minutes for work
          }
        }
        return prevTimer - 1;
      });
    }, 1000);
  };

  const stopTimer = () => {
    if (intervalRef.current === null) return;

    clearInterval(intervalRef.current);
    intervalRef.current = null;
  };

  const resetTimer = () => {
    clearInterval(intervalRef.current);
    intervalRef.current = null;
    setTimer(25 * 60);
    setIsWorking(true);
  };

  const skipBreak = () => {
    if (!isWorking) {
```

Figure 4.2: Pomodoro Timer Code



```json
{
  "name": "quasar",
  "private": true,
  "version": "0.0.0",
  "type": "module",
  "scripts": {
    "dev": "vite",
    "build": "vite build",
    "lint": "eslint . --ext js,jsx --report-unused-disable-directives --max-warnings 0",
    "preview": "vite preview"
  },
  "dependencies": {
    "@fortawesome/fontawesome-svg-core": "^6.5.1",
    "@fortawesome/free-solid-svg-icons": "^6.5.1",
    "@material-tailwind/react": "^2.1.9",
    "firebase": "^10.8.0",
    "react": "^18.2.0",
    "react-dom": "^18.2.0",
    "react-firebase-hooks": "^5.1.1",
    "react-icons": "^5.0.1",
    "react-router-dom": "^6.22.1"

  },
  "devDependencies": {
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    "tailwindcss": "^3.4.1",
    "vite": "^5.1.4",
    "@google/generative-ai": "^0.1.2",
    "@uiw/react-md-editor": "^4.0.1",
    "axios": "^1.6.7",
    "dayjs": "^1.11.10"
  }
}
```

Figure 4.3: Project Dependencies

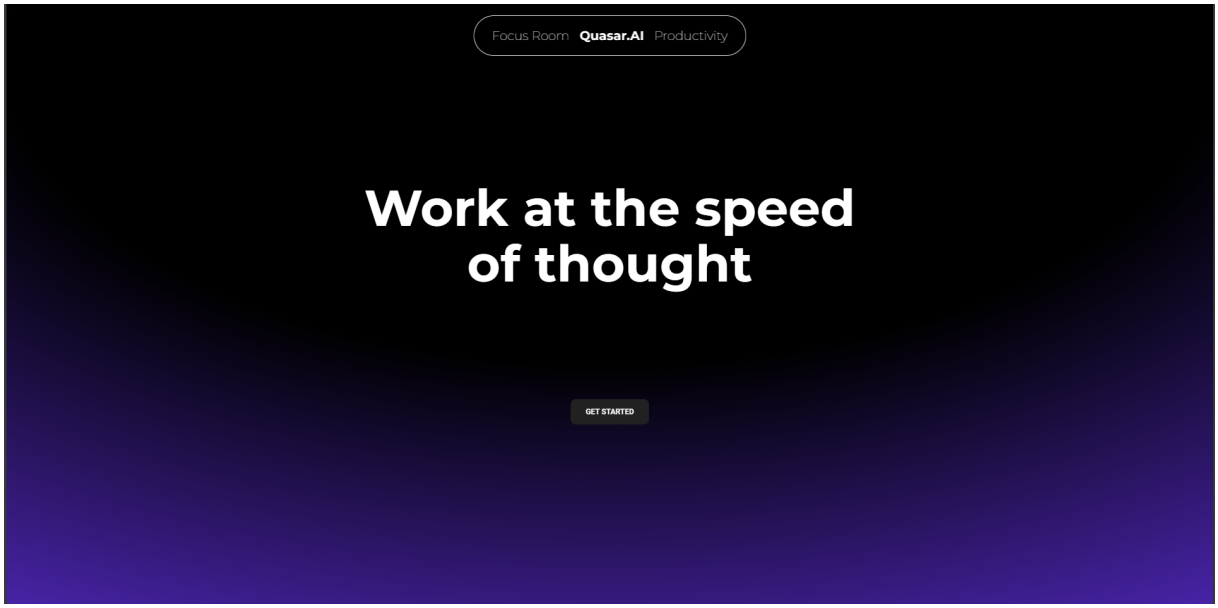

Figure 4.4: Website page

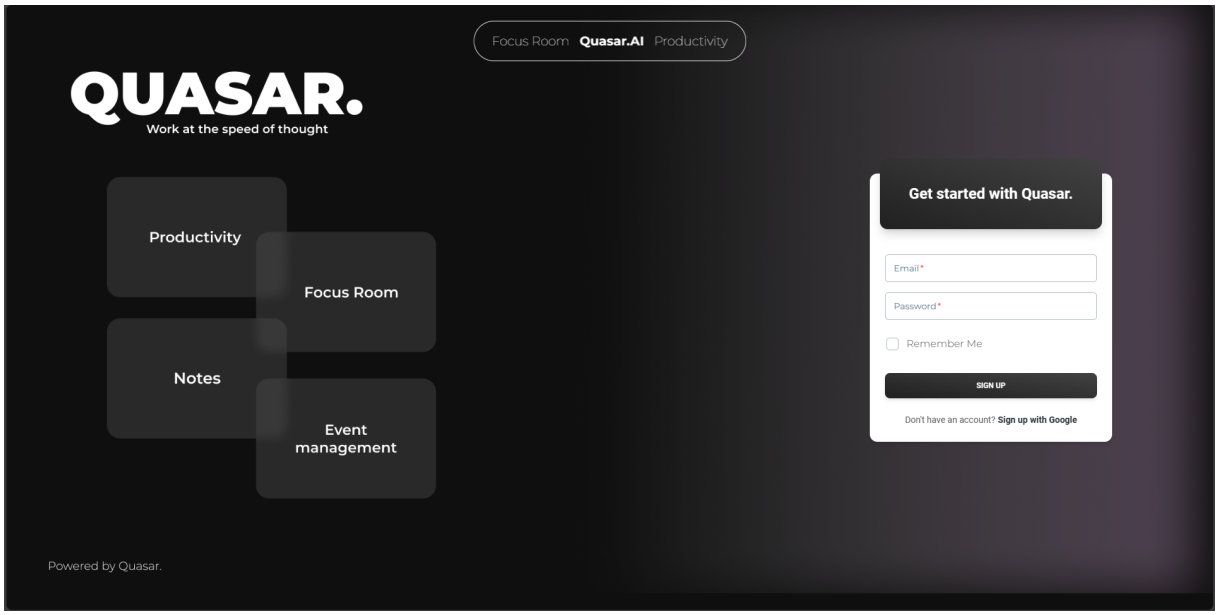

Figure 4.5: Login Page

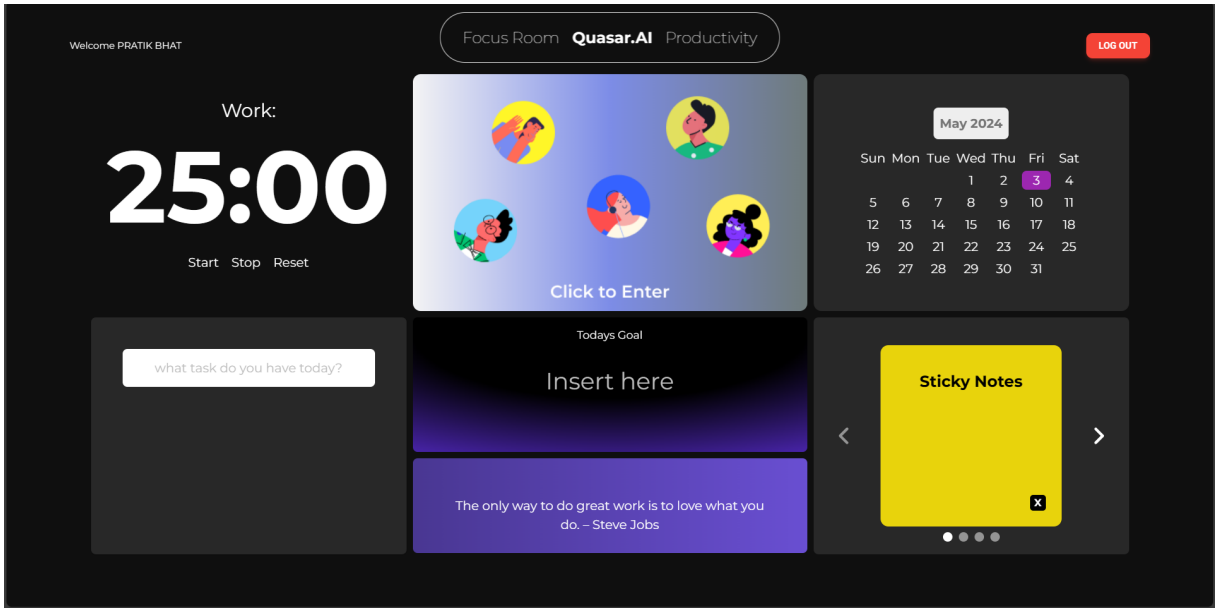

Figure 4.6: Dashboard

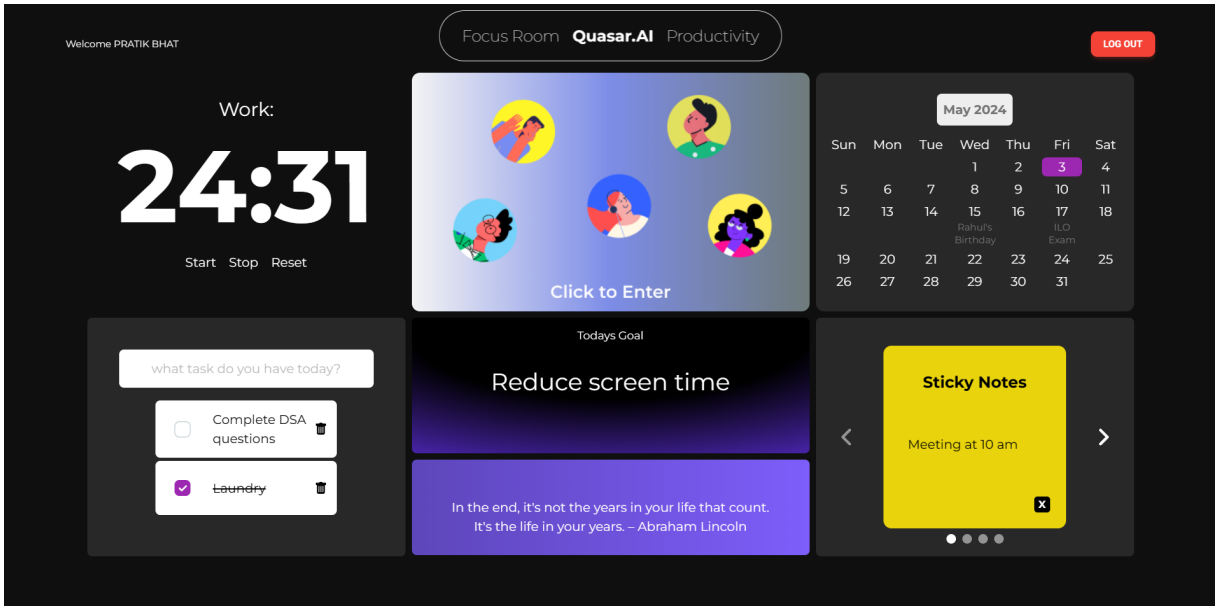

Figure 4.7: Use of each function

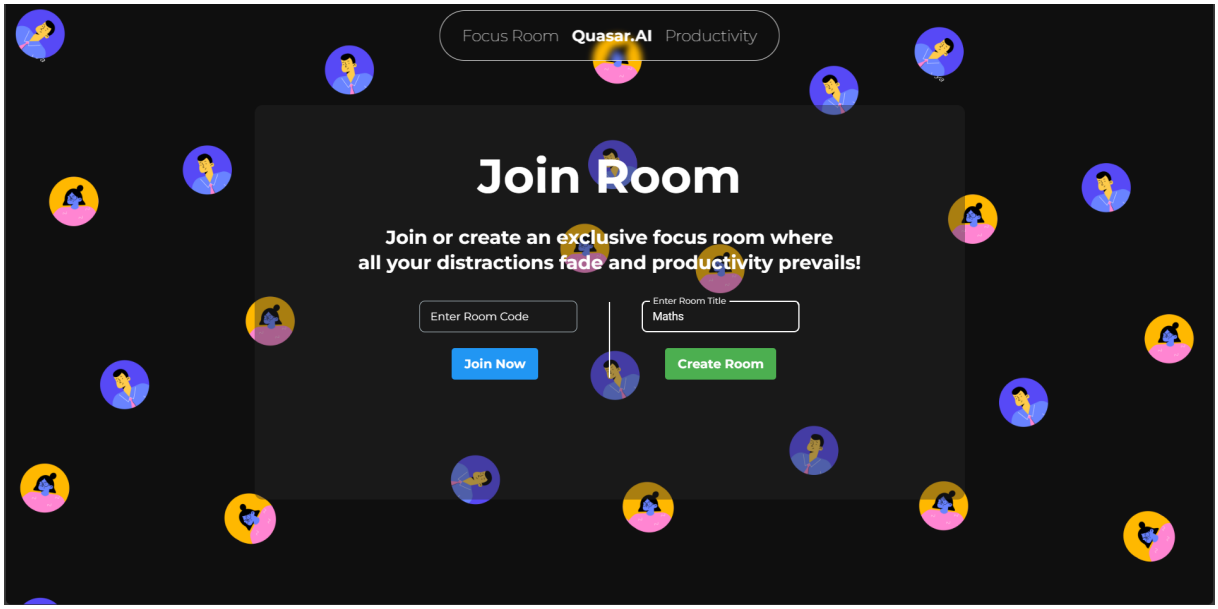

Figure 4.8: Focus Room Create/Join

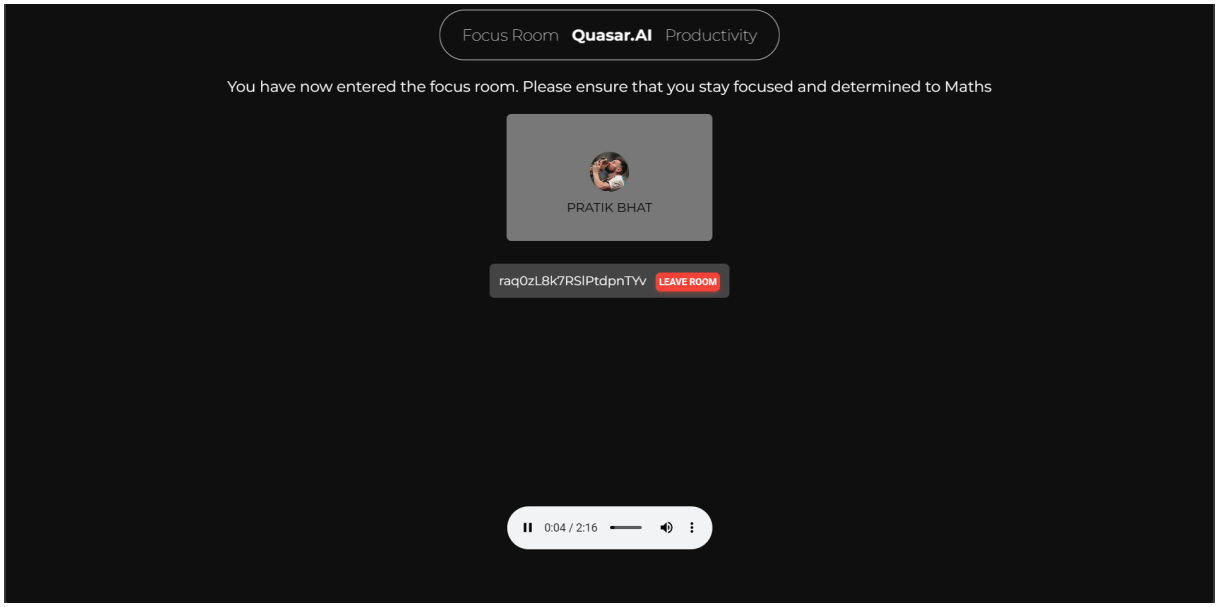

Figure 4.9: Focus Room with unique ID

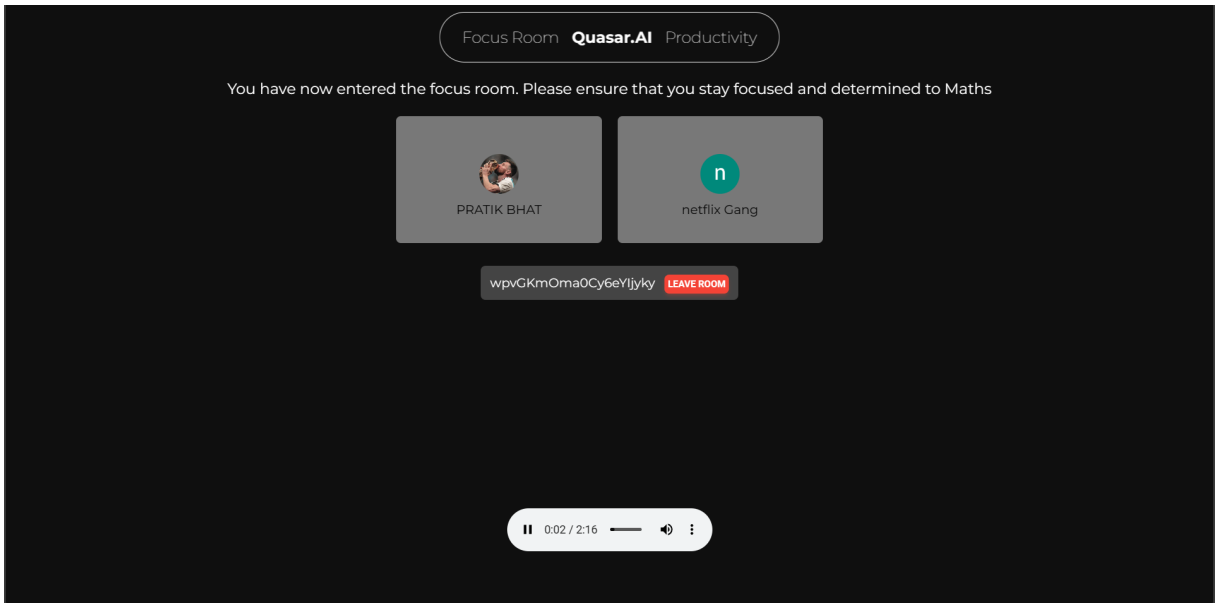

Figure 4.10: Multiple users in the same room

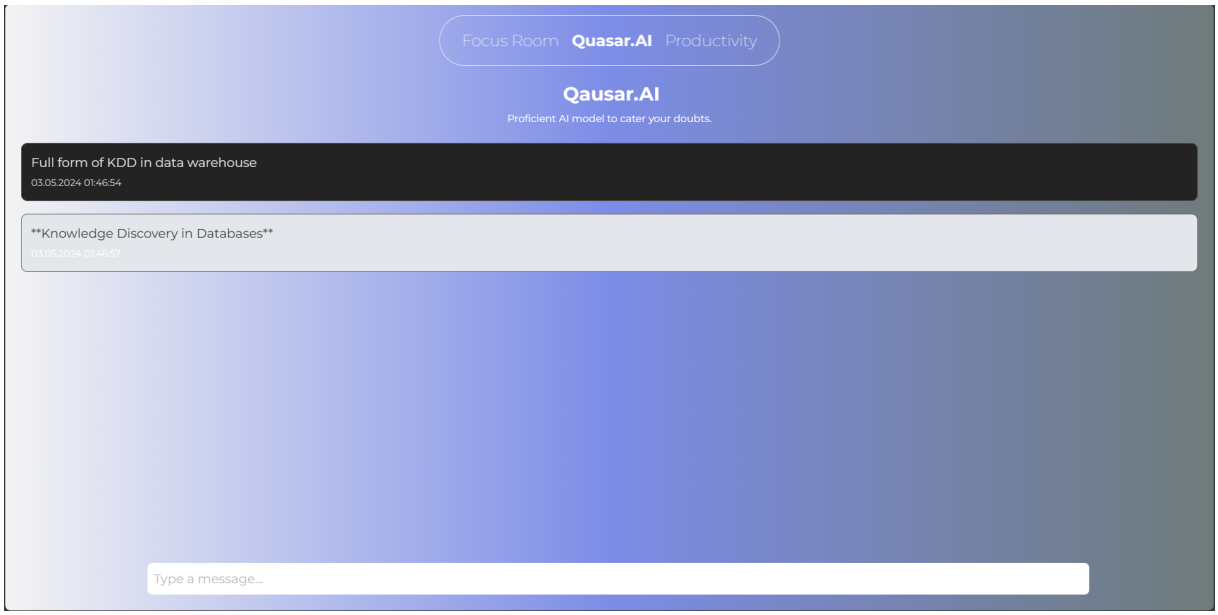

Figure 4.11: Our AI prompt Quasar

4.2 Result Analysis

The Focus Room Web App has done well in getting different kinds of users to stay and use it a lot. Its easy-to-use design and smart, instant help feature make people want to look around and use the site more. When we look at how well it works, the Focus Room Web App is quick and works well. When we check things like how fast the server answers, how long it takes pages to show up, and how much of the computer it uses, we can see it's reliable, even when lots of people are using it at once. It uses stretchy tech like Node.js for its back stuff, which means it can handle a lot and is dependable, which makes people like it and find it easy to use.

The analysis of the results highlights the efficacy and adaptability of the Focus Room Web Application as a complete solution for improving knowledge acquisition, workflow organization, and concentration in a variety of professional contexts.

Chapter 5

Conclusion and Further Work

Conclusion

The one notable technological accomplishment is the creation and deployment of the Focus Room Web App with an AI prompt to answer queries and uncertainties. The development represents a significant technological endeavor aimed at addressing the complex challenges of modern productivity and task management. By leveraging a tech stack comprising React js, JavaScript, Node js, CSS and HTML.

Our analysis's findings show that the program has made significant progress toward raising user engagement, raising the accuracy of question resolution, and giving users a learning experience. Users find it easier to concentrate more because they are shielded from outside distractions.

Future work

Real-Time Collaboration to promote cooperative learning and information sharing, incorporate real-time collaboration tools including group discussions, in-room chat window, audio and video conferencing. Usage analytics and user behavior tracking to obtain insights into user interaction patterns, feature usage, and areas of user interest.

Advanced Natural Language Processing approaches to improve the AI prompt feature's capacity to respond to questions and multilingual support to expand the AI model's language support to allow users with a variety of linguistic backgrounds to take advantage of the application.

The Focus Room Web Application can develop into a more stable and adaptable platform that serves a variety of users and promotes cooperation and knowledge sharing across several fields by concentrating on these future development areas.

References

1. Peek L, Fothergill A: Using focus groups: lessons from studying daycare centers, 9/11, and Hurricane Katrina. Qual Res. 2009;9(1):31–59. 10.1177/1468794108098029

2. Carey MA: Focus Groups–What Is the Same, What Is New, What Is Next? Qual Health Res. 2016;26(6):731–3. 10.1177/1049732316636848

3. Stewart K, Williams M: Researching online populations: the use of online focus groups for social research. Qual Res. 2005;5(4):395–416. 10.1177/1468794105056916

4. Murray PJ: Using virtual focus groups in qualitative research.Qual Health Res.1997;7(4):542–9 10.1177/104973239700700408

5. Parker A, Tritter J: Focus group method and methodology: current practice and recent debate. International Journal of Research Method in Education. 2006;29(1):23–37. 10.1080/01406720500537304

6. Fox FE, Morris M, Rumsey N: Doing synchronous online focus groups with young people: methodological reflections. Qual Health Res. 2007;17(4):539–47. 10.1177/1049732306298754

Appendices

Appendix A

Weekly Progress Report

D Y PATIL UNIVERSITY
RAMRAO ADIK INSTITUTE OF TECHNOLOGY, NAVI MUMBAI

Department of Computer Engineering
TE Mini-Project-Weekly Project Performance Report Even Sem 2023-2024

Project Title: FOCUS ROOM APP WITH AI PROMPT **Group No:** 10

Name of Students 1: Nityanand Bankar	Name of Students 2: Pratik Bhat	Name of Students 3: Janhvi Raut	Name of Students 4: Palak Tiwari

Week No.	Topics to be Covered	Progress Status	Student 1 Sign	Progress Status	Student 2 Sign	Progress Status	Student 3 Sign	Progress Status	Student 4 Sign	Suggestions if any
1.	Proposed Methodology	A	NB	A	PB	A		A		
2.	System Design	A	NB	A	PB	A		A		
3.	Design of proposed system	B	NB	B	PB	B		B		
4.	Implementation Details Module wise	A	NB	A	PB	A		A		
5.	Implementation Details Module wise	B	NB	A	PB	A		B		
6.	Full Implementation Details	A	NB	B	PB	B		A		
7.	Result Analysis	A	NB	A	PB	A		A		
8.	Report Writing	B	NB	A	PB	A		B		
9.	Report Writing	A	NB	B	PB	B		B		
10.	Conclusion / Future Work	B	NB	B	PB	B		A		

A: Satisfactory **B: Average** **C: Needs Improvement**

Dr. Digambar Pimpale
Project Guide Name and Sign

Figure A.1: Weekly Progress Report

Appendix B

Plagiarism Report

Mini Project Report

ORIGINALITY REPORT

12%
SIMILARITY INDEX

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5	dspace.daffodilvarsity.edu.bd:8080 Internet	19 words — 1%
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7	Sihag, Amita. "First Principles Investigations of Hydrogen Adsorption on Carbon-Supported Metal Catalysts", The University of Liverpool (United Kingdom), 2023 ProQuest	15 words — < 1%
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Figure B.1: Plagiarism Report

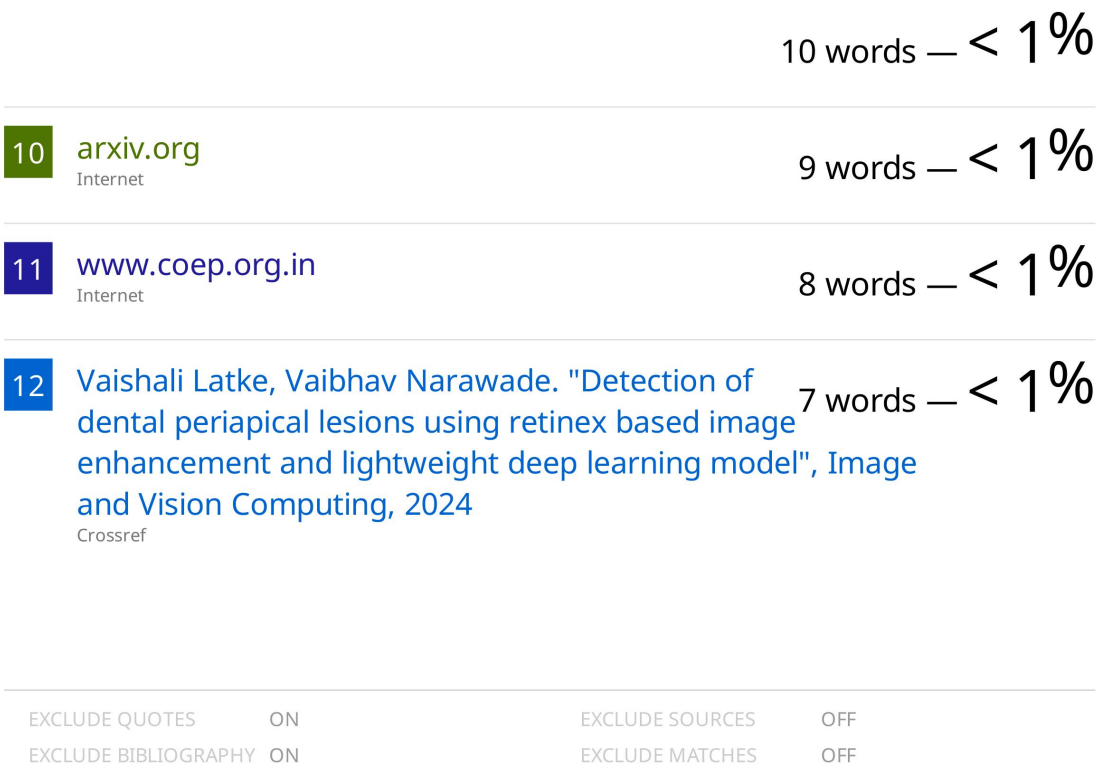

Figure B.2: Plagiarism Report

Appendix C

Publication Details / Copyright / Project Competitions

1. Pratik Bhat, Nityanand Bankar, Palak Tiwari, Janhvi Raut, Dr. Ekta Sarda “A Focus Room Web App with AI Prompt”.

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Date: _____