WPU COMPUTER SOCIETY OF INDIA | STUDENT CHAPTER

RENAISSANCE

WorqHat®

- **Problem Statement Title-** AI-Driven Workforce Collaboration and Scheduling Platform
- **Domain -** Business and Productivity Enhancement
- **Team Name -** CodingZen
- **Team Leader Name -** Ramanuj Ladda
- **Solution Video :-**

INTRODUCTION

- **Problem Statement:**

AI-Driven Workforce Scheduling Assistant: A tool that generates optimized team schedules based on task priorities, resource availability, and deadlines while considering employee preferences.

- **Solution:**

The AI-Driven Workforce Scheduling and Collaboration Platform aims to streamline task allocation, enhance communication, and improve project management using cutting-edge AI. With the Help of WorqHat

PROPOSED SOLUTION

Basic Idea

1. The AI-Driven Workforce Scheduling and Collaboration Platform optimizes team task allocation, communication, and project management by leveraging AI.
2. It automates task assignments based on skills and availability, provides real-time project assistance through an AI chatbot, and streamlines team communication with chat summarization.
3. The platform also collects employee feedback and follows up on project progress, aiming to enhance productivity, reduce communication overload, and improve project outcomes.

Show Stopper

1. AI-Powered Task Automation
2. Intelligent Chat Summarization
3. Real-Time Adaptive Workflows: .
4. Proactive AI-Driven Decision Insights:

Key Features:

- **Employee Profile Collection:**

Gather and process employee data (skills, availability, preferences) using WarqHat's APIs, creating dynamic profiles for optimized task allocation.

- **AI-Powered Task Assignment:**

Leverage WarqHat's models to assign tasks based on employee skills, workload, and deadlines, ensuring balanced and efficient task distribution.

- **AI Chatbot Assistance:**

Use Implement WarqHat's NLP and RAG-based chatbots to answer project-related queries, extract knowledge from documents, and collect employee feedback.

- **Task Summarization:**

Apply WarqHat's LLM Model to condense lengthy team chats into actionable insights for easy reference.

- **Chat Summarizations:**

Uses WarqHat APIs to process chats, extract key points, and generate concise summaries with context. Enable real-time updates, searchable records, and seamless integration into platforms.

PROCESS FLOW DIAGRAM

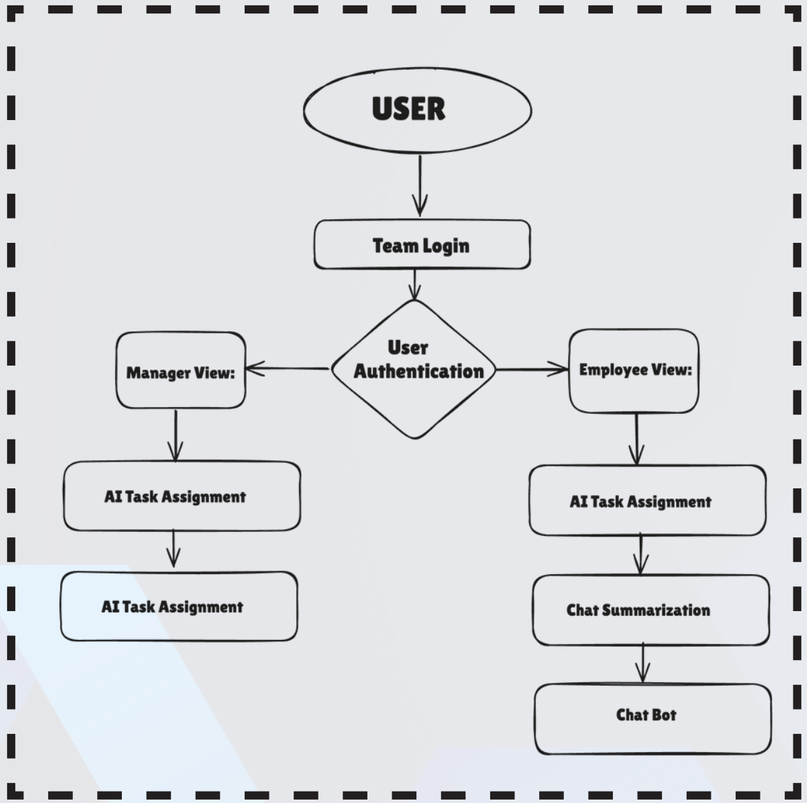
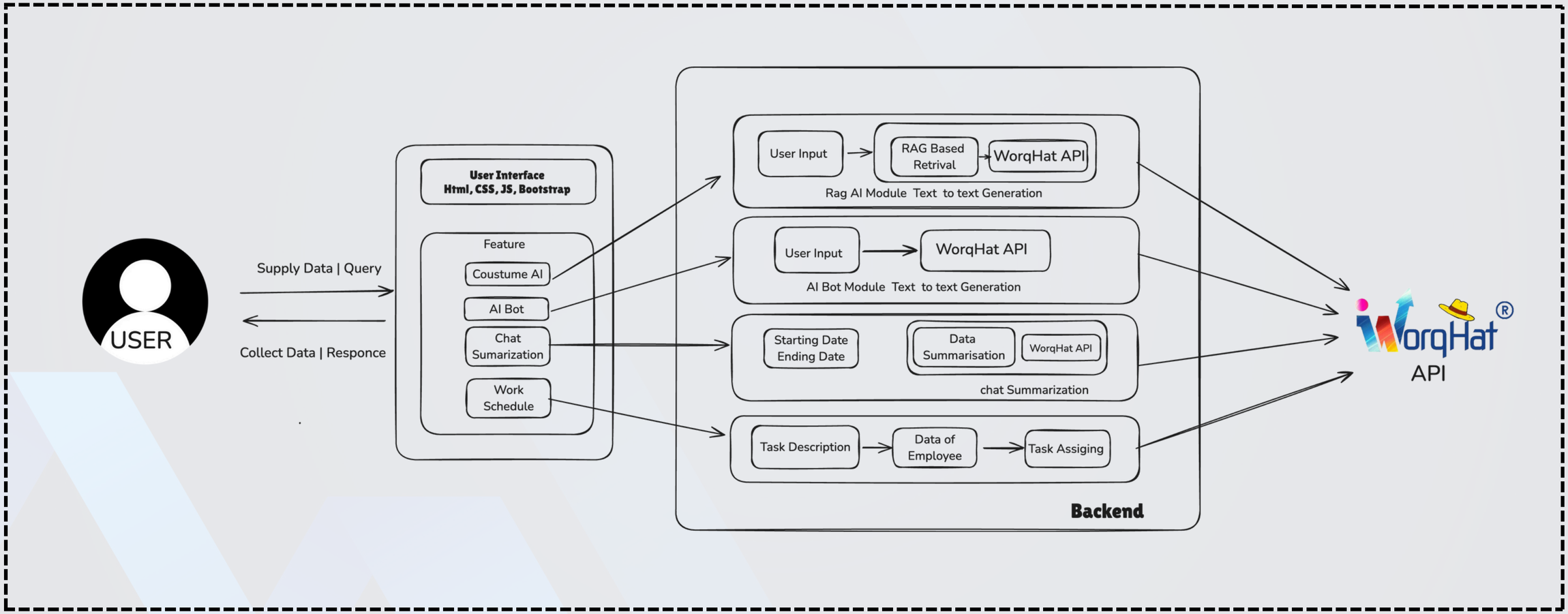


Fig:1 Software System Workflow

Process Flow:

1. **User Login:**
   - User logs in and is identified as either a Manager or an Employee based on User Authentication
2. **Manager View:**
   - **AI Task Assignment:**
     - Suggests optimized task assignments based on team members' skills, availability, and workloads.
     - Managers can review, approve, or modify these assignments.
3. **Employee View:**
   - **AI Task Assignment (Team):**
     - Displays tasks assigned to the employee, prioritized by deadlines and dependencies.
   - **Chat Summarization:**
     - Summarizes team discussions into concise insights using AI.
   - **AI Chatbot Assistance:**
     - Resolves queries, retrieves project-related knowledge, and collects employee feedback.

ARCHITECTURE DIAGRAM



Technical Architecture of AI-Driven Workforce

TECHNOLOGY STACK USED

RENAISSANCE

Frontend Technologies

Backend Technologies

Database

Version Control

Cloud / Hosting

SOLUTION'S INNOVATION AND FEASIBILITY

Solution Innovation:

1. **An AI-Driven Workforce Scheduling** and Collaboration Platform that enhances task allocation, team communication, and project management through:
2. **AI-Powered Task Assignment:** Automates task distribution by analyzing employee skills, availability, and workloads.
3. **Chat Summarization**: Uses LLMs to condense team discussions into actionable insights, improving communication efficiency.
4. **Real-Time AI Chatbot:** Offers immediate project-related assistance, feedback collection, and access to knowledge repositories.
5. **Proactive Decision Insights:** Provides managers with data-driven recommendations for optimal project outcomes.

Feasibility:

Technical Feasibility

- Built on scalable technologies like TensorFlow, Scikit-learn, and WorqHat APIs.
- Cloud-based deployment ensures high availability and performance using platforms like Firebase or AWS.
- Seamless integration with existing tools via APIs.

Operational Feasibility

- User-friendly UI/UX ensures ease of adoption for managers and employees.
- Modular architecture supports customization based on team requirements.
- Integration with external platforms simplifies onboarding.

Market Feasibility

- Rising demand for AI-driven collaboration tools in industries ensures a large potential market.
- Organizations benefit from increased productivity, streamlined workflows, and reduced communication overhead.

Financial Feasibility

- Development costs are reduced using open-source tools and frameworks.
- Monetization via subscription models, licensing to organizations, or enterprise partnerships.

CONSTRAINTS & CONCLUSION

Constraints:

Technical Constraints

- Dependence on high-quality employee data for accurate task assignments.
- Real-time processing demands for chat summarization and AI chatbot responses.
- Integration complexity with existing tools and third-party APIs.

Resource Constraints

- Limited budget for scaling and deploying cloud infrastructure.
- High computational power required for AI model training and execution.

Regulatory and Ethical Constraints

- Strict data privacy compliance (e.g., GDPR) when handling sensitive employee information.
- Addressing potential bias in AI-driven task allocation and decision-making.

User Adoption Constraints

- Initial learning curve for users unfamiliar with AI-powered tools.
- Resistance to automation from teams accustomed to manual workflows.

Conclusion

- **The AI-Driven Workforce Scheduling** and Collaboration Platform is an innovative solution designed to optimize team productivity, streamline communication, and enhance project outcomes. By leveraging AI-powered task automation, real-time chat summarization, and intelligent decision insights, the platform addresses key challenges in workforce management.
- Despite constraints, its scalable architecture, integration capabilities, and cost-effective deployment make it a feasible and impactful solution for organizations seeking to modernize their operations.

WPU COMPUTER SOCIETY OF INDIA Student Chapter

RENAISSANCE

THANK YOU