HerHustle

PROJECT SYNOPSIS
OF MINOR PROJECT

BACHELOR OF TECHNOLOGY
Computer Science and Engineering (DATA SCIENCE) & 6th Semester

SUBMITTED BY
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STUDENT'S DECLARATION

I hereby certify that the work which is being presented in the mini project report entitled " HerHustle " in fulfillment of the requirement for the award of the Degree of Bachelor of Technology in Department of Computer Science and Engineering (Data Science) of Noida Institute of Engineering and Technology, Greater Noida, Uttar Pradesh is an authentic record of my own work carried out during sixth semester.

Date: ANSH MITTAL

The major project viva-voce examination of Mr. ANSH MITTAL, Roll No. 2201331540041 Of B.TECH (DATA SCIENCE) has been held on _____.

Signature of:

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External Examiner: _____   Internal Examiner _____

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ABSTRACT

HerHustle is an AI-powered community-driven job platform dedicated to empowering women from all walks of life. Despite the availability of multiple job platforms, women, particularly those from marginalized backgrounds, continue to face significant challenges when it comes to accessing reliable and verified employment opportunities. Issues such as workplace harassment, gender bias, lack of employer transparency, and inadequate networking opportunities act as barriers, leaving a major section of the female population underserved and excluded from mainstream professional ecosystems.

The aim of HerHustle is to bridge this gap by offering a comprehensive solution that blends job opportunities with peer support, AI-enabled verification systems, and a robust trust mechanism. The platform is designed to serve not only urban women professionals but also daily wage workers, older women, and freelancers in rural areas, offering a space that values safety, support, and professional growth. The use of modern technologies such as Natural Language Processing for abuse detection, AI for recommendation and trust scoring, and document AI for profile verification makes HerHustle a next-gen solution in the digital employment space. With the inclusion of community forums, mentorship, emotional well-being support, and a scalable monetization model, HerHustle strives to set a new standard in inclusive digital job platforms for women.

CHAPTER 1 – INTRODUCTION

1.1 Objective

To develop a secure, AI-integrated, community-powered employment platform for women that ensures safety, inclusiveness, trust, and career development.

1.2 Problem Definition

Existing platforms like LinkedIn and Indeed cater to a general audience and often lack focused features tailored for women's needs. Women, especially from underserved communities, struggle with issues like harassment, job fraud, poor accessibility, and lack of verified job sources. These challenges are compounded by limited access to digital literacy and support networks, making it difficult for women to enter or re-enter the workforce confidently. The need for a platform that combines job listings with built-in community support, peer mentoring, trust mechanisms, and security tools is the driving motivation behind HerHustle.

1.3 Scope

HerHustle is designed to address a wide range of employment challenges faced by women from various socio-economic backgrounds. The platform supports freelance projects, mentorship opportunities, verified job postings, employer rating systems, emotional wellness forums, and AI-powered recommendations. The project also envisions global scalability, multi-language support, and a mobile app for broader accessibility.

1.4 Definitions, Acronyms, and Abbreviations

- **AI** – Artificial Intelligence
- **NLP** – Natural Language Processing
- **UI** – User Interface
- **UX** – User Experience
- **DFD** – Data Flow Diagram

1.5 Technologies to be Used

- **Frontend**: React, Vite, Git
- **Backend**: Java Spring Boot
- **Database & Hosting**: Supabase, Render
- **AI Components**: Facial recognition, NLP models, AI trust scoring

CHAPTER 2 – SOFTWARE REQUIREMENT SPECIFICATIONS

2.1 Introduction

2.1.1 Purpose

To build a safe, intelligent, and community-led job search platform exclusively for women, integrating both traditional employment tools and social support features.

2.1.2 Project Scope

The platform includes user registration, role-specific interfaces (e.g., job seeker, employer, mentor), AI-driven recommendations, a peer mentorship network, abuse reporting tools, and a freemium-based monetization system.

2.2 Overall Description

2.2.1 Product Perspective

HerHustle is a modular web platform built using a microservices architecture and hosted on the cloud to ensure scalability and security.

2.2.2 Product Functions

- Job search and application
- AI-powered profile recommendations
- Abuse/spam detection system
- Employer verification
- In-platform messaging
- Mentorship community forums

2.2.3 User Classes

- Job Seekers (freelancers, students, daily wage earners)
- Employers (companies, individuals)
- Mentors
- Admin (platform moderation)

2.2.4 Operating Environment

Browser-based web application (with mobile expansion planned), supported on modern devices with access to the internet.

2.2.5 Architecture Design

Microservice-based architecture with a React frontend and Spring Boot backend hosted on Render, with Supabase handling database and authentication.

2.2.6 Constraints

- Internet access dependency
- Language accessibility
- Legal compliance with employment and data protection laws

2.2.7 Use Case Model Description

Includes use cases for registration, job application, abuse reporting, mentorship request, and job posting.

2.2.8 Assumptions and Dependencies

- Users are digitally literate
- Employers follow the platform's code of conduct
- AI models are regularly updated for accuracy

2.3 System Features

- Personalized job recommendation engine
- Real-time abuse detection using NLP
- Facial/document verification for trust score generation
- Peer mentorship and support forum
- Freemium access with optional paid memberships

2.4 External Interface Requirements

2.4.1 User Interfaces

- Responsive and accessible web UI
- Admin dashboard for moderation

2.4.2 Hardware Interfaces

- End-user smartphones/laptops

2.4.3 Software Interfaces

- Supabase API for data and auth
- Render for cloud hosting
- Facial recognition API
- NLP model APIs

2.4.4 Communications Interfaces

HTTPS secure RESTful APIs between frontend, backend, and services

2.5 Other Nonfunctional Requirements
2.5.1 Performance

The system should support at least 10,000 concurrent users with low latency.

2.5.2 Safety

Spam and harassment filtering mechanisms must be real-time and effective.
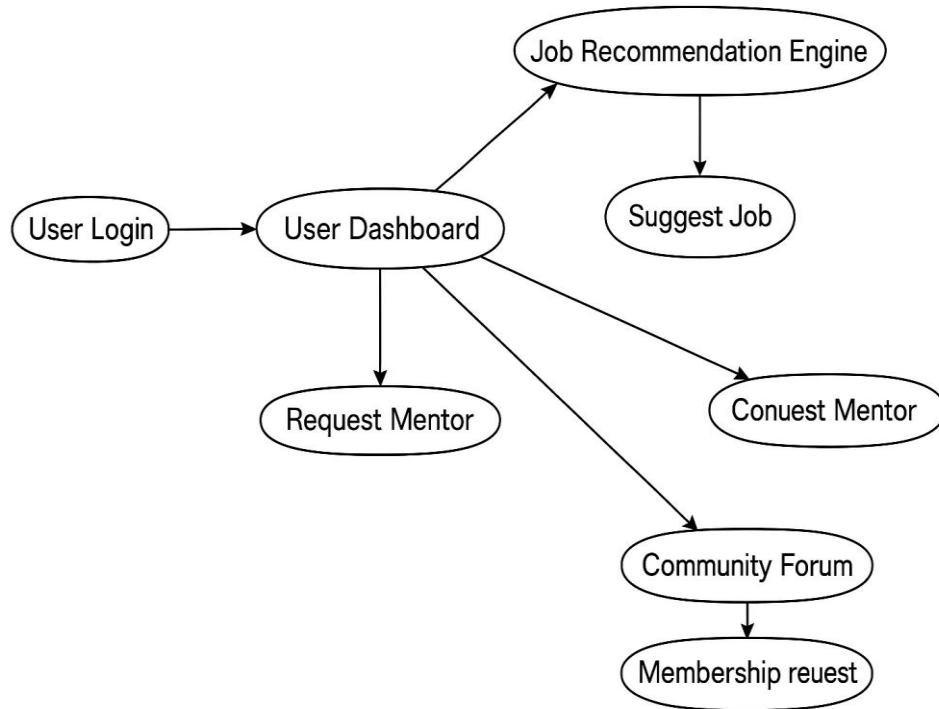
2.5.3 Security

Data encryption, secure login, OTP-based verification

2.5.4 Software Quality

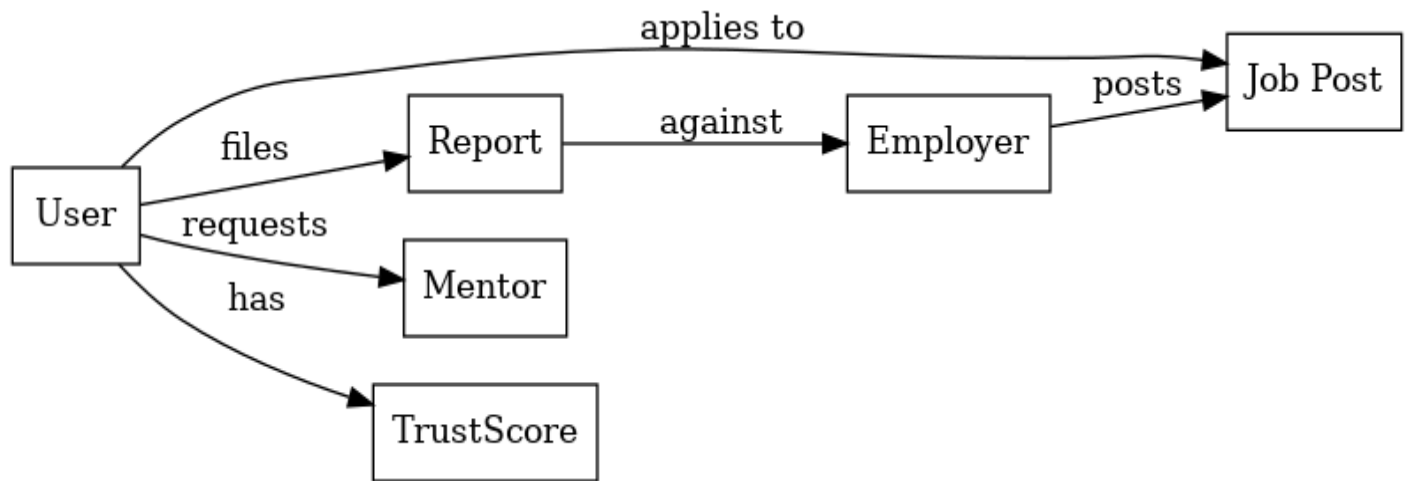High availability, modular components, version control via Git

CHAPTER 3 – SYSTEM DESIGN
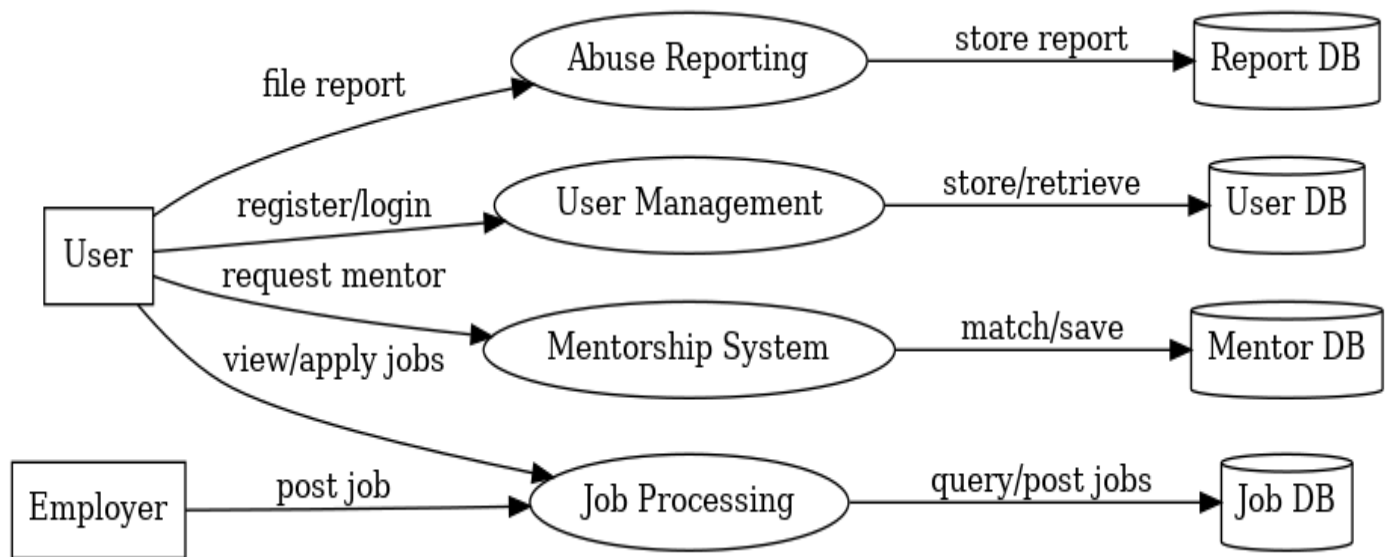
3.1 Flowcharts

Flowchart from user login to job recommendation and community engagement.
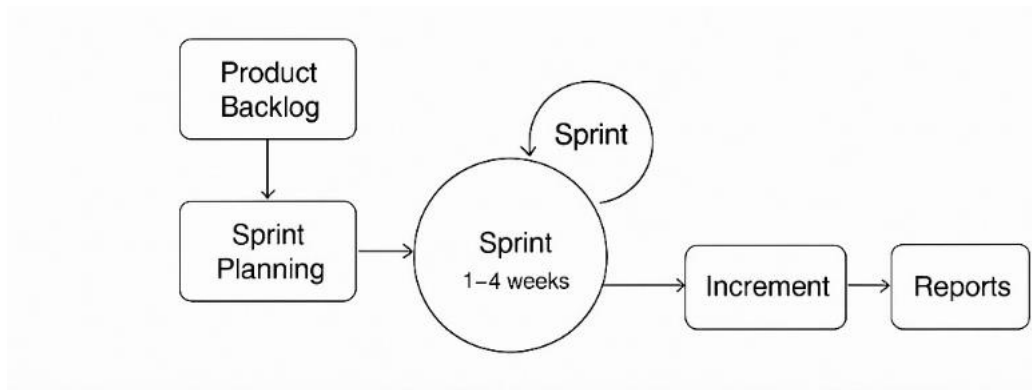
3.2 ER Diagram

Entities: User, Employer, Job Post, Report, Mentor, TrustScore

3.3 Design Methodology

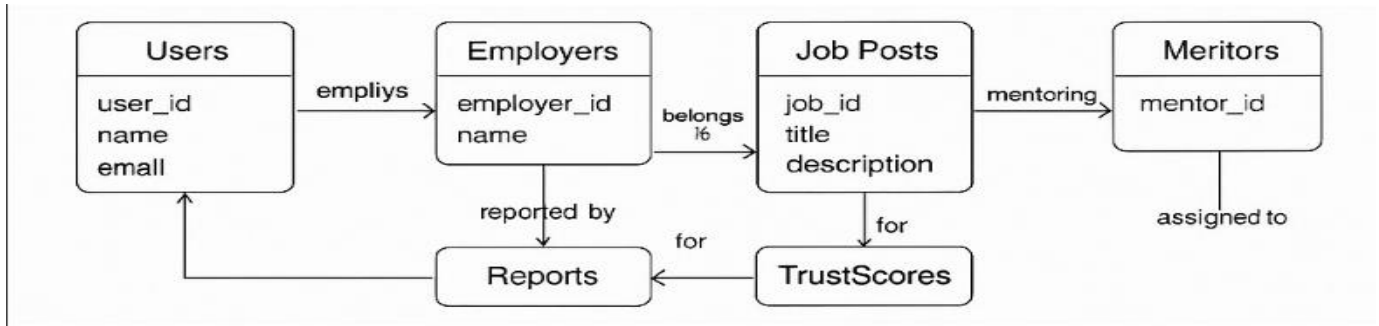Agile Development with weekly sprints and iterative user testing

3.4 Software Development Model

Agile-Scrum Model

3.5 Database Design

3.5.1 ER Diagram

Captures relationships between users, jobs, and interactions

3.5.2 Schema

Users	Jobs	Reports	MenforshipRequests	TrustScores
user_id name email	job_id title description	report_id	mentor_id	trustscore_id score

Tables: Users, Jobs, Reports, MentorshipRequests, TrustScores

3.6 DFDs

DFD Level 0

User ← HerHustle Platform → Employer

DFD Level 1

Registration Module

Job Matching Module ← Employer

User

Mentorship Module

Reporting Module
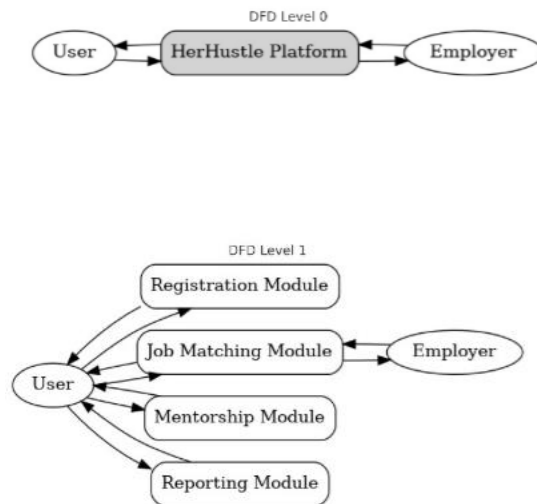
Level 0 and Level 1 diagrams show core flows: registration, job matching, reporting

3.7 Activity Diagram

Activity Diagram

User Logs In

Browse Jobs

Apply to Job
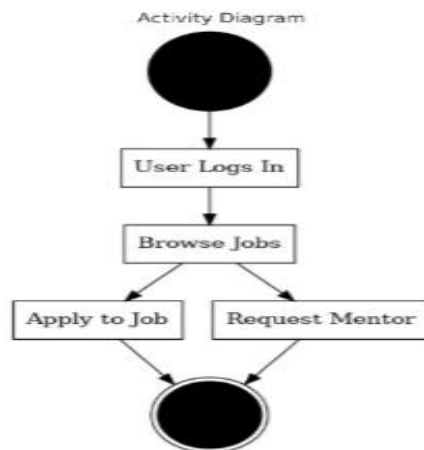
Request Mentor

Detailed user journey through job application and mentorship request

3.8 Class Diagram & Sequence Diagrams

Class Diagram

User
+ user_id: int
+ name: string
+ trust_score:int

Employer
employer_id
name: string

requests

posts

Report
report_id
user_id int
details

MentorshipRequest
+ request_id int
+ user_id int
+ mentor_id int

JobPost
job_id int
title string
description

requests

Report
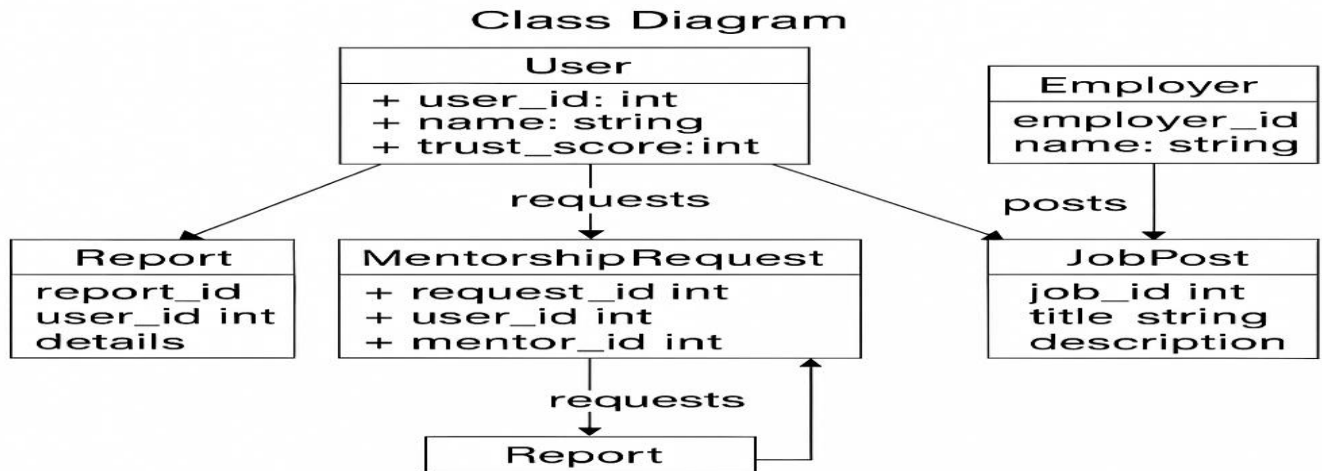
Describes object interactions between backend services and frontend components

CHAPTER 4 – CONCLUSIONS AND FUTURE SCOPE

4.1 Conclusion

HerHustle offers a much-needed innovation in the job platform space by centering the experience, needs, and safety of women. With built-in AI, peer communities, and verified opportunities, it becomes more than just a job board—it becomes a support system. This project not only bridges an existing technology gap but also contributes meaningfully to social inclusion and empowerment.

4.2 Future Scope

- Global localization and multilingual support
- Mobile application development
- AI career coaches and job interview prep bots
- Virtual job fairs
- Partnership with government employment programs
- Mental health forums and support integration

CHAPTER 5 – REFERENCES

5.1 Books

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   Relevant for understanding AI systems, biases, and their societal impacts.

2. "Designing for Interaction: Creating Smart Applications and Clever Devices" by Dan Saffer
   Covers user-centered design principles important for building inclusive interfaces.

3. "Data Science for Business" by Foster Provost and Tom Fawcett
   Provides foundational knowledge of data science techniques used in recommendation systems and analytics.

4. "The Second Sex" by Simone de Beauvoir
   A seminal text that helps understand the structural issues around gender that influence employment disparities.

5. "Invisible Women: Data Bias in a World Designed for Men" by Caroline Criado Perez
   Highlights gender data gaps and how these affect women's access to services, including employment platforms.

6. "Programming Collective Intelligence" by Toby Segaran
   Good reference for building recommendation and trust scoring systems using collaborative filtering and machine learning.

7. "Building Microservices" by Sam Newman
   Useful for the architectural design of a scalable, modular platform as described in your system design.

8. "Natural Language Processing with Python" by Steven Bird, Ewan Klein, and Edward Loper
   Invaluable for implementing NLP-based abuse detection and content moderation.

8. Women and Leadership: Real Lives, Real Lessons by Julia Gillard and Ngozi Okonjo-Iweala

9. Algorithms of Oppression: How Search Engines Reinforce Racism by Safiya Umoja Noble

10. Lean In: Women, Work, and the Will to Lead by Sheryl Sandberg

11. Technically Wrong: Sexist Apps, Biased Algorithms, and Other Threats of Toxic Tech by Sara Wachter-Boettcher

12. Weapons of Math Destruction: How Big Data Increases Inequality and Threatens Democracy by Cathy O'Neil

13. Designing Data-Intensive Applications by Martin Kleppmann

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5.2 URLs

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2. [React Developer Docs](#)
3. [Spring Boot Guides](#)
4. [Render Documentation](#)
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7. LinkedIn Research, "The Power of Women's Networks," 2022
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