CHRIST
UNIVERSITY
BENGALURU, INDIA

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DOMAIN: Organizing the Unorganized Sector

TITLE: SkillSync

A Group Project Submitted for Undergraduate PROJECT - I (BCA 481)
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By

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1. INTRODUCTION

1.1 PROJECT DESCRIPTION

SkillSync pioneers a revolutionary shift in the unorganized sector by seamlessly connecting employers with skilled houseworkers using location data. The platform simplifies hiring, offering a user-friendly interface for ideal matches. By organizing this sector, SkillSync generates job opportunities, ensuring income stability for workers and bolstering economic growth. Emphasizing collaboration and partnerships, the project fosters a harmonized marketplace, promoting transparency and mutual benefit. Leveraging location data optimizes connections between employers and employees, ensuring efficiency. SkillSync's impact extends beyond convenience, reshaping the socioeconomic fabric. The innovation drives to create a connected, fair, and prosperous ecosystem, propelling sustainable economic growth and empowerment in this evolving sector.

1.2 EXISTING SYSTEMS

- **TaskRabbit:**

  TaskRabbit is a platform that connects users with skilled taskers forvarious services, including household chores, handyman tasks, and more. It streamlines hiring by allowing users to find and hire skilled workers for specific tasks.

- **Handy:**

  Handy is a platform that connects individuals with home service professionals, offering services such as cleaning, plumbing, and electrical work. Users can easily book and schedule services through the platform.

- **Upwork:**

  While not specific to housework, Upwork is a well-known platform that connects employers with freelancers across various industries. It allows businesses to find skilled professionals for a wide range of tasks, promoting economic opportunities for freelancers.

- **Thumbtack:**

  Thumbtack is a platform that connects customers with local professionals for various services, including home improvement, events, and wellness. It simplifies the hiring process by providing a user-friendly interface.

- **Helpling:**

  Helpling is a platform that connects users with local cleaners. It streamlines the process of finding and hiring cleaning professionals, providing a user-friendly experience for both employers and skilled workers.

- **Homeadvisor:**

  HomeAdvisor connects homeowners with local service professionals in the home improvement industry. It facilitates the hiring process for tasks related to home maintenance, repair, and remodeling.

1.3 OBJECTIVES

- **Establish Connection Platform:** Develop a robust and user-friendly platform that seamlessly connects employers with skilled houseworkers, utilizing innovative features and a simple interface.
- **Optimize Hiring Processes:** Streamline the hiring process for employers, making it efficient and effective, reducing the time and effort required to find and hire skilled houseworkers.
- **Utilize Location Data for Enhanced Matches:** Leverage location data to optimize the matching process between employers and skilled workers, ensuring proximity and convenience for both parties.
- **Organize the Unorganized Sector:** Organize the unorganized sector by providing a structured platform that brings transparency, reliability, and accountability to the hiring process in the housework sector.
- **Generate Job Opportunities:** Actively contribute to the generation of job opportunities for skilled houseworkers, promoting economic stability and financial empowerment within this sector.
- **Ensure Fairness and Transparency:** Tailor features for the elderly, blind, and deaf populations to improve healthcare management.

1.4 PURPOSE, SCOPE AND APPLICABILITY

1.4.1 Purpose:

SkillSync is designed with the primary purpose of transforming the unorganized sector by creating a centralized platform that seamlessly connects employers with skilled houseworkers. The project aims to bring structure to this sector, which has traditionally lacked organization, by leveraging innovative solutions and technology. By doing so, SkillSync addresses the challenges associated with hiring skilled workers in an unorganized manner, providing a streamlined and efficient solution for both employers and workers.

1.4.2 Scope:

The scope of SkillSync extends across various dimensions within the unorganized sector, specifically focusing on tasks related to household services. The platform's scope encompasses organizing and optimizing the hiring process, creating job opportunities for skilled houseworkers, ensuring income stability, and contributing to overall economic growth. SkillSync's emphasis on collaboration and partnerships broadens its scope, fostering a harmonized marketplace where transparency and mutual benefit thrive. The utilization of location data further extends the scope by enhancing the efficiency of connections between employers and employees.

1.4.3 **Applicability:**

SkillSync is applicable to both employers seeking skilled houseworkers and the skilled workforce looking for job opportunities in the unorganized sector. The platform's user-friendly interface makes it accessible to a wide range of users, from individual employers to businesses seeking skilled services. Its applicability is not limited to a specific geographic location, making it versatile and adaptable to diverse regional contexts. SkillSync's emphasis on transparency and collaboration ensures that it is suitable for various industries and sectors within the unorganized domain, creating a connected, fair, and prosperous ecosystem. Overall, the project's applicability lies in reshaping the socioeconomic fabric of the unorganized sector and propelling sustainable economic growth and empowerment.

1.5 **OVERVIEW**

SkillSync represents a groundbreaking initiative to transform the unorganized sector by introducing a streamlined platform that connects employers with skilled houseworkers. This innovation simplifies the hiring process, creating job opportunities and ensuring income stability for workers. SkillSync focuses on organization, collaboration, and partnerships, fostering a harmonized marketplace that promotes transparency and mutual benefit. Leveraging location data, the platform optimizes connections between employers and employees, enhancing overall efficiency. Beyond convenience, SkillSync's impact extends to reshaping the socioeconomic landscape, aiming to create a connected, fair, and prosperous ecosystem. The project's commitment to innovation and collaboration positions it as a catalyst for sustainable economic growth and empowerment in the evolving unorganized sector.

2. SYSTEM ANALYSIS AND REQUIREMENTS

2.1 PROJECT DEFINITION

The problem definition for the SkillSync project revolves around the challenges and inefficiencies present in the unorganized sector. Key issues include:

- **Lack of Structure in Hiring:**
  The unorganized sector often lacks a centralized platform for efficient hiring processes. Employers and skilled houseworkers face challenges in connecting seamlessly.
- **Limited Job Opportunities:**
  Skilled workers in the unorganized sector may struggle to find consistent job opportunities, leading to income instability and financial uncertainties.
- Organizational Fragmentation:
  The absence of a structured system results in a fragmented environment, hindering collaboration and partnerships between employers and skilled workers.
- **Inefficient Use of Location Data:**
  The unorganized sector often underutilizes location data, missing out on opportunities to optimize connections and enhance the overall efficiency of task assignments.
- **Lack of Economic Stability:**
  The unorganized sector can be characterized by economic instability for skilled workers, affecting their financial well-being and overall quality of life.

SkillSync aims to address these problems by providing a user-friendly platform that streamlines the hiring process, generates job opportunities, ensures income stability, and promotes collaboration within the unorganized sector. The project seeks to leverage technology and innovation to create a connected and prosperous ecosystem, overcoming the identified challenges in the current landscape.

2.2 REQUIREMENTS SPECIFICATION

2.2.1 Functional Requirements

- **User Registration and Authentication:**
  - Users should be able to register on the platform, providing necessary details.
  - Implement a secure authentication system to ensure user data privacy.

- **Employer Features**
  - Employers should be able to create and manage job postings.
  - A location-based shortlisting mechanism should optimize employer searches for skilled houseworkers.
  - Provide a user-friendly interface for employers to interact with the platform seamlessly.

- **Skilled Houseworker Features**
  - Skilled houseworkers must have the option to work independently or through a mediator.
  - Implement a profile showcase feature for skilled workers to display their expertise.
  - Provide an interface for skilled workers to manage their availability and work preferences.

- **Intermediary Module**
  - Develop a specialized module for intermediaries to connect individuals with job opportunities, including collaboration with NGOs.
  - Ensure flexibility for intermediaries to efficiently engage with the platform.

- **Security and Verification**
  - Employ comprehensive security measures for user data protection.
  - Implement verification processes for both employers and skilled workers.

- **Job Opportunity Generation**
  - The platform should actively contribute to the generation of job opportunities for skilled houseworkers.
  - Facilitate economic stability and financial empowerment for skilled workers.

- **Collaboration and Partnerships**
  - Foster collaboration and partnerships between employers and skilled houseworkers.Create a network that benefits both parties, contributing to overall sector growth.

- **Measurement and Evaluation**
  - Implement mechanisms to measure and evaluate the socioeconomic impact of SkillSync
  - Continually assess how the platform contributes to the well-being and economic development of the housework sector.

2.2.2 Technical Requirements

➢ Data Privacy:

- SkillSync prioritizes the confidentiality of user data, including employer and skilled houseworker information. All sensitive data is securely stored within the platform's database.
- Personal data is treated with the utmost security, and SkillSync ensures that information is not shared with unauthorized users without proper authentication

➢ Performance:

- Efficient access to SkillSync's features requires a secure internet connection.
- The app's performance is influenced by the user's device specifications and the browser used for accessing the platform.

➢ Data Security:

- SkillSync employs robust security measures to safeguard sensitive information, such as user credentials and account data, ensuring the confidentiality and integrity of user data.

➢ Data Storage:

- All data collected by SkillSync is securely stored in a dedicated database.
- Access to the database is restricted to authenticated administrators, ensuring data privacy and controlled management.

➢ Reliability:

- SkillSync is designed with a user-friendly interface, featuring an attractive design and intuitive user experience.
- The platform utilizes appealing color palettes to enhance user engagement and satisfaction, contributing to a reliable and enjoyable user experience.

2.3 SYSTEM REQUIREMENTS

➢ Hardware Requirements

- Processor: AMD's Ryzen 7000 and Intel's 14
- Memory: 2 GB RAM
- Storage: 100 MB

➢ Software Requirements

- Operating System: Windows 11
- Front End: HTML, CSS, JavaScript
- Back End: Php, Node.js
- Database : MySQL

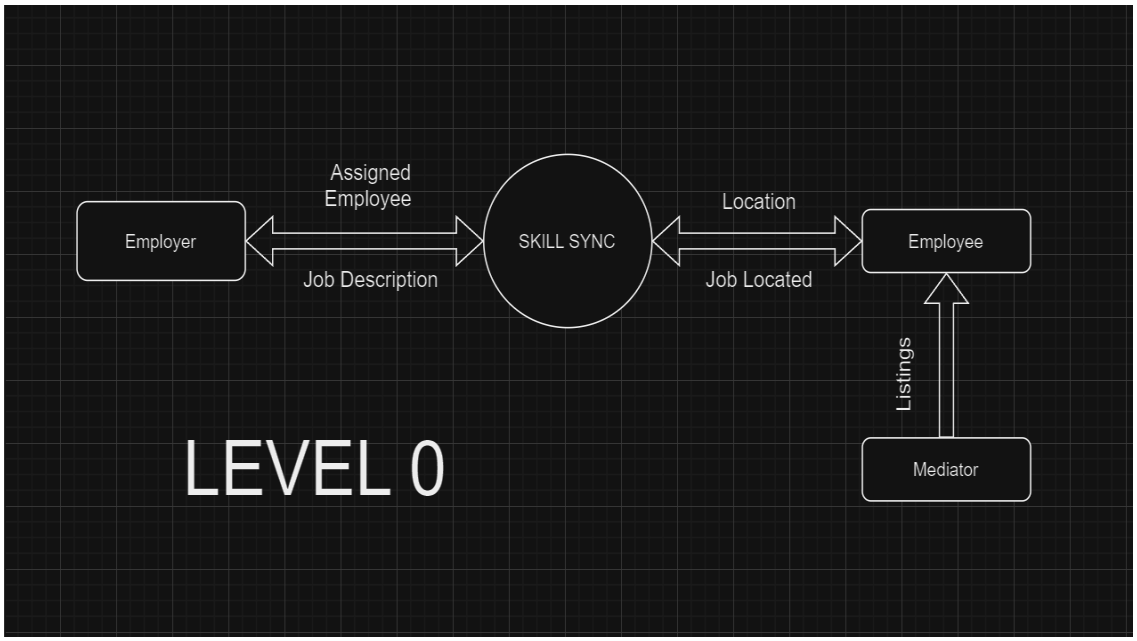
➢ Network Requirements

- WIFI: Internet connectivity is required for full functionality, as the app relies on real-time tracking and data retrieval from the server.
- Network: The app requires a stable internet connection with a minimum download speed of 2 Mbps and upload speed of 1 Mbps for optimal performance.

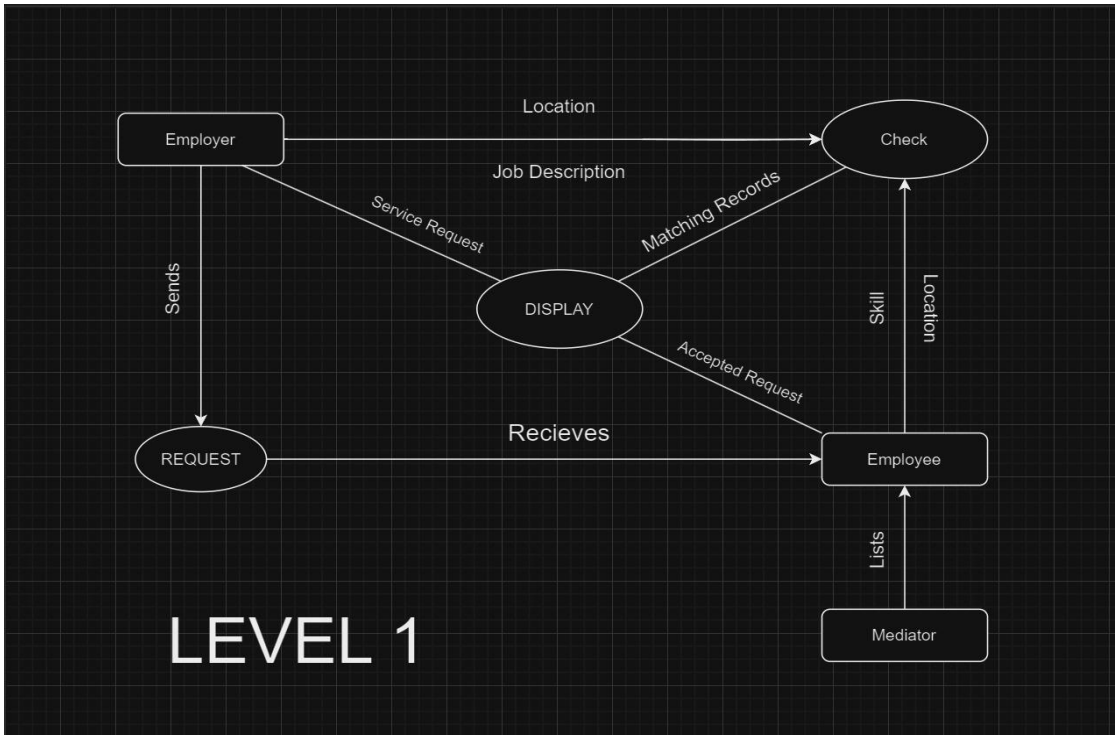
2.4 CONCEPTUAL MODELS

2.4.1 **Data Flow Diagram**

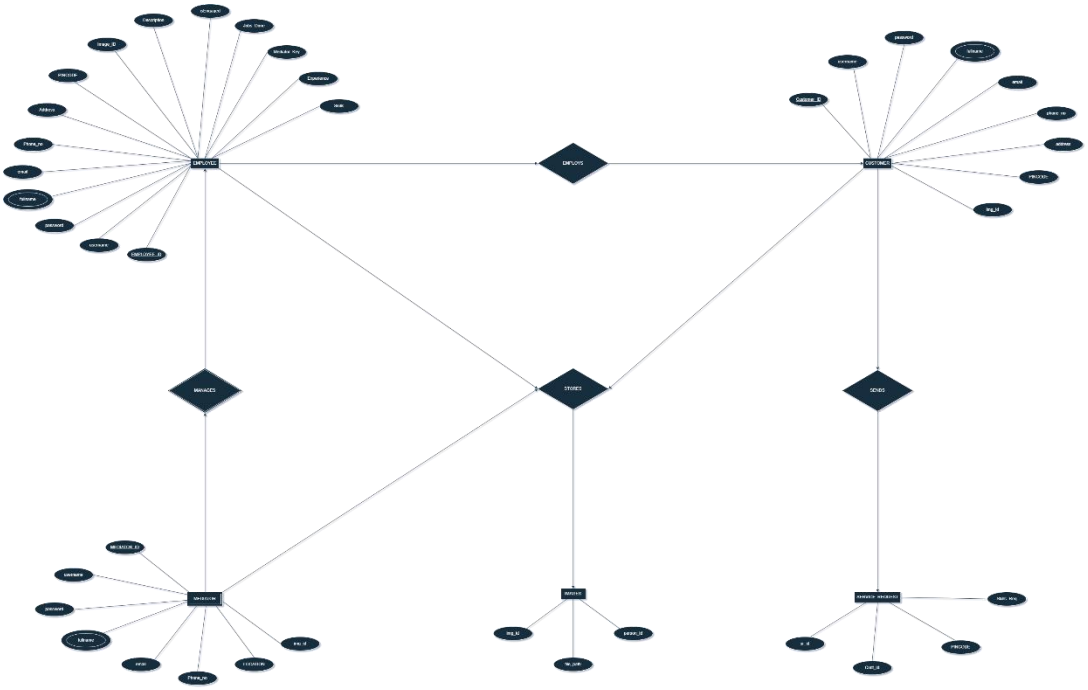
Level 0:



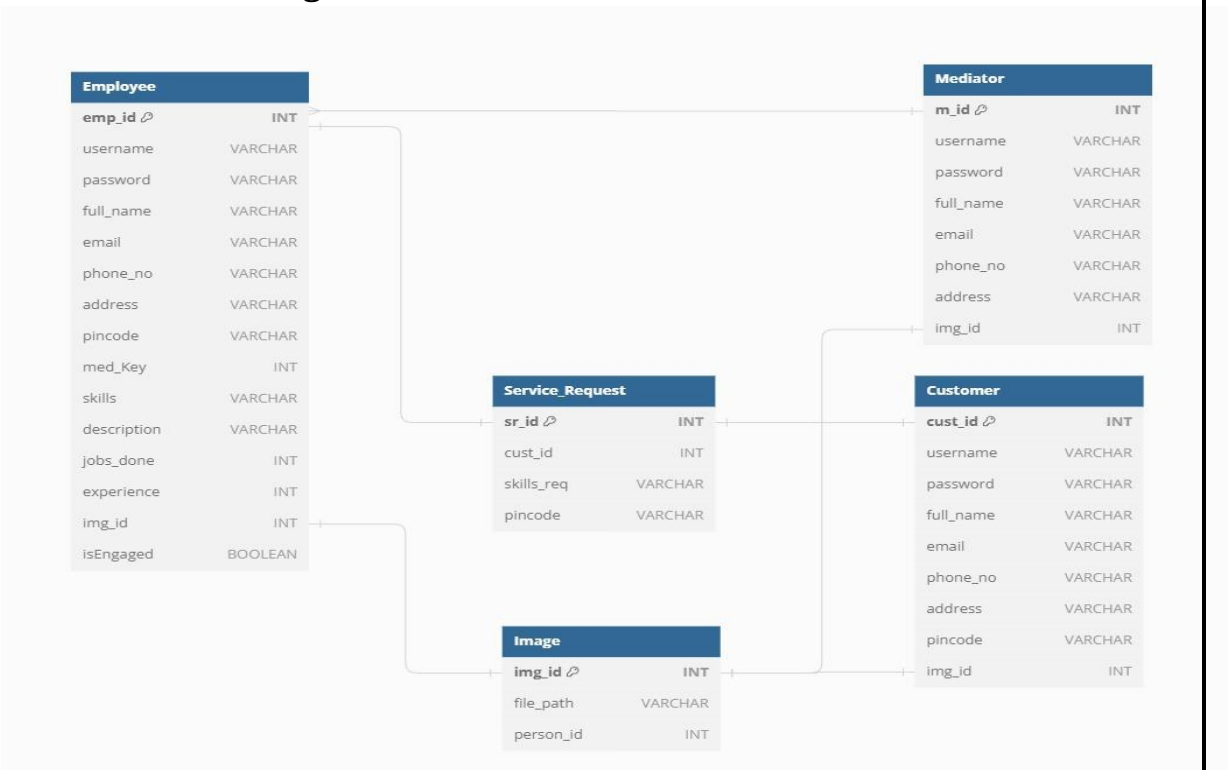
Level 1:



2.4.2 **ER Diagram**



2.4.3 **Schema Diagram**



2.5 PROPOSED TOOLS

- **For Front End:** CSS, Adobe Dreamweaver , Photoshop , Adobe Firefly
- **For Backend:** MySql, Php
- **API Integration:** Google Maps

3. DATABASE DESIGN

3.1 DATA DICTIONARY

- Employee Table

```
mysql> desc employee;
+-------------+-------------+------+-----+---------+----------------+
| Field       | Type        | Null | Key | Default | Extra          |
+-------------+-------------+------+-----+---------+----------------+
| emp_id      | int         | NO   | PRI | NULL    | auto_increment |
| username    | varchar(255) | NO   | UNI | NULL    |                |
| password    | varchar(255) | NO   |     | NULL    |                |
| full_name   | varchar(255) | NO   |     | NULL    |                |
| email       | varchar(255) | NO   | UNI | NULL    |                |
| phone_no    | varchar(15)  | NO   |     | NULL    |                |
| address     | varchar(255) | NO   |     | NULL    |                |
| pincode     | varchar(10)  | NO   |     | NULL    |                |
| med_Key     | int         | YES  | MUL | NULL    |                |
| skills      | varchar(255) | YES  |     | NULL    |                |
| description | varchar(255) | YES  |     | NULL    |                |
| jobs_done   | int         | YES  |     | 0       |                |
| experience  | int         | YES  |     | NULL    |                |
| img_id      | int         | YES  | MUL | NULL    |                |
| isEngaged   | tinyint(1)  | YES  |     | NULL    |                |
+-------------+-------------+------+-----+---------+----------------+
```

- Mediator Table

```
mysql> desc mediator;
+-----------+-------------+------+-----+---------+----------------+
| Field     | Type        | Null | Key | Default | Extra          |
+-----------+-------------+------+-----+---------+----------------+
| m_id      | int         | NO   | PRI | NULL    | auto_increment |
| username  | varchar(255) | NO   | UNI | NULL    |                |
| password  | varchar(255) | NO   |     | NULL    |                |
| full_name | varchar(255) | NO   |     | NULL    |                |
| email     | varchar(255) | NO   | UNI | NULL    |                |
| phone_no  | varchar(15)  | NO   |     | NULL    |                |
| address   | varchar(255) | NO   |     | NULL    |                |
| img_id    | int         | YES  | MUL | NULL    |                |
+-----------+-------------+------+-----+---------+----------------+
8 rows in set (0.00 sec)
```

- Customer Table

```
mysql> desc customer;
+-----------+--------------+------+-----+---------+----------------+
| Field     | Type         | Null | Key | Default | Extra          |
+-----------+--------------+------+-----+---------+----------------+
| cust_id   | int          | NO   | PRI | NULL    | auto_increment |
| username  | varchar(255) | NO   | UNI | NULL    |                |
| password  | varchar(255) | NO   |     | NULL    |                |
| full_name | varchar(255) | NO   |     | NULL    |                |
| email     | varchar(255) | NO   | UNI | NULL    |                |
| phone_no  | varchar(15)  | NO   |     | NULL    |                |
| address   | varchar(255) | NO   |     | NULL    |                |
| pincode   | varchar(10)  | NO   |     | NULL    |                |
| img_id    | int          | YES  | MUL | NULL    |                |
+-----------+--------------+------+-----+---------+----------------+
```

- Service Request Table

```
mysql> desc service_request;
+------------+--------------+------+-----+---------+----------------+
| Field      | Type         | Null | Key | Default | Extra          |
+------------+--------------+------+-----+---------+----------------+
| sr_id      | int          | NO   | PRI | NULL    | auto_increment |
| cust_id    | int          | YES  | MUL | NULL    |                |
| skills_req | varchar(255) | YES  |     | NULL    |                |
| pincode    | varchar(10)  | YES  |     | NULL    |                |
+------------+--------------+------+-----+---------+----------------+
4 rows in set (0.00 sec)
```

- Image Table

```
mysql> desc image;
+-----------+--------------+------+-----+---------+----------------+
| Field     | Type         | Null | Key | Default | Extra          |
+-----------+--------------+------+-----+---------+----------------+
| img_id    | int          | NO   | PRI | NULL    | auto_increment |
| file_path | varchar(255) | YES  |     | NULL    |                |
| person_id | int          | YES  | UNI | NULL    |                |
+-----------+--------------+------+-----+---------+----------------+
3 rows in set (0.00 sec)
```

3.2 NORMALIZATION ANALYSIS

- **1st Normal Form (1NF):** Yes, all values are atomic.
- **2nd Normal Form (2NF):** Yes, no partial dependencies.
- **3rd Normal Form (3NF):** Yes, no transitive dependencies.