
Database Management System

Home Care Worker

Providing

Agency

Prepared by

Group Name: Group 18

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1.1 Description

Title: The Evolution of Home Care Worker Management

A Comprehensive Database Solution

Introduction

In today's fast-paced world, marked by rapid population growth and an aging demographic, the demand for personalized in-home services continues to grow.

Home Care Worker Providing Agencies play a pivotal role in bridging the gap between this surging demand for services and the desire to maintain convenience.

These agencies act as intermediaries, ensuring that individuals can receive the necessary care and assistance in the comfort of their own homes.

Whether it's plumbing, electrical work, gardening, or any other home service, these agencies strive to provide timely and efficient solutions to meet their clients' diverse needs.

From healthcare to home maintenance, they have become indispensable in simplifying the lives of homeowners and individuals requiring specialized assistance.

Home care services encompass a wide array of offerings, catering to the diverse needs of individuals and households. These services can be broadly categorized into several key areas:

1. Healthcare Services:

This category includes skilled nursing, physical therapy, medication management, and palliative care, among others.

Home healthcare services are critical for individuals with chronic illnesses, recovering from surgeries, or those in need of ongoing medical support.

2. Personal Care Services:

Personal care aides assist with activities of daily living (ADLs) such as bathing, dressing, grooming, and mobility support.

These services are essential for elderly individuals and those with disabilities who require assistance to maintain their independence.

3. Home Maintenance Services:

This category covers a range of services, including plumbing, electrical work, gardening, and general home repairs.

These services ensure that homes are safe, functional, and comfortable for residents.

4. Animal Care Services:
Pet owners often seek assistance with pet care, including pet walking, feeding, grooming, and veterinary visits.
Animal care providers offer peace of mind to pet owners who want the best for their furry companions.
5. Electronic Repair Services:
With the increasing reliance on electronic devices, the need for electronic repair specialists has grown significantly.
These technicians troubleshoot and fix various electronic appliances and gadgets.
6. Cleaning Services:
Cleaning staff and maids play a vital role in maintaining a clean and healthy living environment.
Their services range from routine house cleaning to deep cleaning and sanitation.
7. Personal Grooming Services:
Some individuals require specialized personal grooming services, such as haircuts, manicures, and pedicures, in the comfort of their homes.

Each of these service categories presents unique challenges and demands on Home Care Worker Providing Agencies.

Managing a workforce that spans these diverse domains requires a high level of organization, coordination, and data management.

The Need for a Database Management System

Home service agencies often grapple with challenges related to workforce scheduling, client engagement, service quality assurance, and financial management as managing a diverse range of services and resources can be a daunting task.

These challenges can lead to operational efficiency and hinder growth.

To efficiently manage the diverse and critical information involved in coordinating these services, database management systems (DBMS) have become indispensable tools.

- In a world driven by technology, a modern DBMS goes beyond traditional data management.
- It embraces technological advancements to empower agencies and caregivers.
- Furthermore, the integration of Internet of Things (IoT) devices into the DBMS presents exciting opportunities for home maintenance services.
- Agencies can track the status and performance of equipment in real-time, ensuring that technicians have access to the necessary resources when needed. This proactive approach reduces downtime, enhances safety, and ultimately leads to improved service quality.

In an era where data drives decisions, a DBMS empowers home care agencies to collect and analyse vast amounts of data. This data provides valuable insights into service trends, client preferences, and operational efficiency.

Armed with these insights, agencies can make informed decisions, continuously improve service quality, and adapt to the evolving needs of their clients.

As technology continues to advance, DBMS has become an integral part of the home care industry.

Features of the Home Care Worker Management Database

1. Managing Client Information

- One of the primary functions of home service agencies is to maintain comprehensive records of their clients.
- These records include personal details, contact information, and specific service requirements.
- A robust DBMS allows agencies to efficiently store, organize, and retrieve this critical information.
- It ensures that client data is secure, easily accessible, and up to date, enabling agencies to provide personalized services and respond promptly to client needs.

The importance of this feature cannot be overstated as in-home service providers must have accurate and readily available information about their clients to deliver tailored care.

2. Client-Worker Matchmaking

- One of the standout features of the Home Care Worker Management Database is its ability to facilitate seamless client-worker matchmaking.
- We understand that each client is unique, with distinct needs and preferences.
- By efficiently storing and organizing client information, the DBMS ensures that caregivers have quick access to vital details, such as preferences, and specific care requirements.
- Our system employs advanced algorithms and data analysis to ensure that clients are paired with caregivers who possess the right skills, qualifications, and personalities to meet their requirements.

The art of matchmaking is crucial in the home care industry.

Successful pairings between clients and caregivers can significantly impact the overall quality of care and client satisfaction.

3. Transparent Contract Tracking

- Contracts are the lifeblood of any home care agency.
- Contracts define the terms of service, obligations, and expectations for both clients and caregivers.
- Our system steps in as a reliable solution for transparent contract tracking.
- It digitizes contracts, making them easily accessible and comprehensible for all parties involved.
- Agencies can effortlessly monitor contract details, including service schedules, rates, and any special considerations.
- This transparency ensures that agencies uphold their commitments and maintain healthy relationships with clients and caregivers alike.

Transparency in contract tracking builds trust between clients and agencies, as both parties have clear visibility into the agreed-upon terms.

The ability to access and update contracts digitally streamlines the process and reduces the likelihood of errors or misunderstandings.

4. Accurate Payment Monitoring

- Financial transactions are at the heart of any business.
- Ensuring that workers are compensated accurately and promptly is not only an ethical responsibility but also a crucial element in maintaining a motivated and dedicated workforce.
- Agencies can bid farewell to the tedious task of manual payment calculations and the risk of errors.
- Workers can have confidence that their hard work is duly rewarded, boosting morale and job satisfaction.

By automating payment processes and ensuring accuracy, agencies not only fulfil their ethical obligations but also foster a positive work environment.

5. Service Quality Assurance

- Maintaining service quality is paramount for the reputation and success of home service agencies.
- Our system includes tools for monitoring service quality, tracking completed tasks, and managing client feedback.
- The ability to monitor service quality in real-time and gather client feedback allows agencies to identify areas for improvement and make necessary adjustments promptly.

Service quality assurance is an ongoing process that directly impacts an agency's reputation and client retention.

It enables agencies to continuously improve their service delivery and exceed client expectations.

It also serves as a mechanism for recognizing and rewarding outstanding caregivers, promoting a culture of excellence within the organization.

6. Scheduling and Resource Allocation

- Efficient scheduling and resource allocation are crucial for agencies that provide services in clients' homes.
- It helps optimize resource allocation by matching the skills and availability of professionals with the specific needs of clients, thus improving efficiency, and reducing travel time and costs.

Scheduling and resource allocation are intricate puzzles that home care agencies must solve daily.

The complexity increases when considering factors like worker availability, travel time between appointments, and the variety of services offered.

A well-designed scheduling system not only ensures that clients receive timely and convenient services but also minimizes operational costs.

The power of data to drive meaningful insights:

In the era of big data, DBMS allows home service agencies to collect and analyse vast amounts of data.

This data can provide insights into service trends, client preferences, and operational efficiency.

Agencies can use these insights to make informed decisions, improve service quality, and adapt to changing client needs.

Data-driven insights have the potential to transform the home care industry.

By analysing data on client demographics, service utilization patterns, and caregiver performance, agencies can tailor their services to meet evolving demands.

Moreover, data-driven decision-making extends to resource allocation and business strategy.

By understanding which services are in high demand in specific geographic areas, agencies can optimize their workforce distribution to meet these needs efficiently.

Additionally, data analysis can inform marketing efforts, helping agencies target their services to the right audience.

Conclusion

The Home Care Worker Management Database is a robust and efficient solution designed to revolutionize the operations of Home Care Worker Providing Agencies.

With a clear mission of enhancing client satisfaction and optimizing resource management, this system elevates the proficiency of agencies in managing clients, workers, contracts, and financial transactions.

By embracing cutting-edge technology and data-driven insights, this database system not only simplifies the complex tasks faced by these agencies but also ensures that individuals can receive the highest quality in-home services they deserve.

This comprehensive solution not only streamlines administrative processes but also enhances the quality of care, fosters transparency, and promotes data-driven decision-making.

As the home care industry continues to evolve to meet the needs of an aging population and individuals seeking personalized services, the Home Care Worker Management Database stands as a beacon of innovation and efficiency.

It is a testament to the power of technology in transforming and improving the lives of both clients and caregivers in the ever-expanding world of home care services.

1.2 Requirements collection

1.2.1 Background reading:

CareSmartz360:

[Tips for Successful Home Care Business Management \(caresmartz360.com\)](http://caresmartz360.com)

CareSmartz360 is a cloud-based home care software that streamlines agency management with simplified navigation, quick scheduling, integrated alerts, and accessible client-caregiver data.

It automates financial tasks, including payroll and invoicing, and seamlessly integrates with QuickBooks. With separate apps for agency owners and caregivers, it enhances workflow efficiency. CareSmartz360 facilitates seamless operations, fostering rapid agency growth.

Helper4u:

[Hire Maid, Nanny, Cook, Nurse, Driver, Delivery Boy | Helper4U.in](http://Helper4U.in)

Helper4U is a versatile platform offering permanent and temporary hiring solutions for a variety of helper roles, from maids to drivers, with an emphasis on verified staff and background checks.

They specialize in aiding parents in finding caregivers and offer the assurance of replacements or refunds within 6 months if any issues arise with hired help.

Their focus is on simplifying the process of securing trustworthy helpers while prioritizing transparency in their hiring procedures.

India Home Health Care:

[Home healthcare services in your city | Quality Nursing care services
\(indiahomelcare.com\)](http://indiahomelcare.com)

India Home Healthcare is a provider of home healthcare services in India.

Their website offers information and access to quality nursing care services delivered in the comfort of one's home.

While the specific services and details may vary, home healthcare services often encompass medical care, nursing assistance, and other forms of healthcare support for individuals who prefer to receive care in their own residences.

Urban Company:

[Urban Company - Get Expert Professional Services at Home in Ahmedabad](http://www.urbancompany.in)

Urban Company is a platform that offers expert professional services that can be provided at your home.

These services typically include a wide range of offerings such as home cleaning, plumbing, electrical work, beauty services, and more, all delivered by trained professionals. It's a convenient way to access various services without leaving your home.

Summary of Background Reading:

Expert Professional Services Platform (Inspired by Urban Company):

- Robust platform connecting clients with skilled professionals for home-based services.
- Diverse range of offerings including home cleaning, plumbing, electrical work, and beauty services.

Agency Management (Inspired by CareSmartz360):

- Cloud-based home care software optimized for seamless agency management.
- Intuitive interface with streamlined navigation and quick scheduling functionalities.

Quality Home Healthcare Services (Inspired by India Home Health Care):

- Provider of top-notch nursing care services within the comfort of one's home.

Database Integration and Management:

- Centralized database infrastructure to efficiently manage client profiles, caregiver details, service schedules, and financial transactions.

By seamlessly combining these innovative features from successful platforms, the Home Care Service Provider Database Management Agency will pave the way for streamlined operations, effective communication, reliable service delivery, and sustained growth within the dynamic home care industry.

1.2.2 Interview:

Interview Plan:

System: Viyaa Home Service Provider

Project Reference: HCWPA/2023/G18

Participants: Asma Narmawala (HCWPA Project Manager)

Ananya Adarsh (HCWPA Project Manager)

Hira (Viyaa Home Service Provider)

Date: 17/09/2023

Time:

02:00PM

Duration: 1 Hour

Place: Viyaa Home Service

Office

Propose Of Interview:

The preliminary meeting is intended to gain a comprehensive understanding of how the Home Care Service operates and to identify the essential requirements for running the business effectively. Additionally, we aim to uncover any challenges faced by individuals running the business at Viyaa Home Service.

Agenda:

1. Types of Home Care Services Offered
2. Qualifications and Training of Caregivers
3. Customization and Care Plans
4. Cost and Payment Options
5. Availability and Scheduling
6. Data Collection Methods from Customers
7. Current database Management System (if any)
8. Challenges Encountered Regarding Data Integrity

Documents to be brought to the interview:

1. Personal Identification (ID Card)
2. Drafted List of Interview Questions
3. Research Findings About the Domain

Interview Summary:

Purpose of Interview:

The primary objective of this interview was to initiate a preliminary discussion aimed at identifying challenges and requirements related to the services offered by Viyaa Home Care Service.

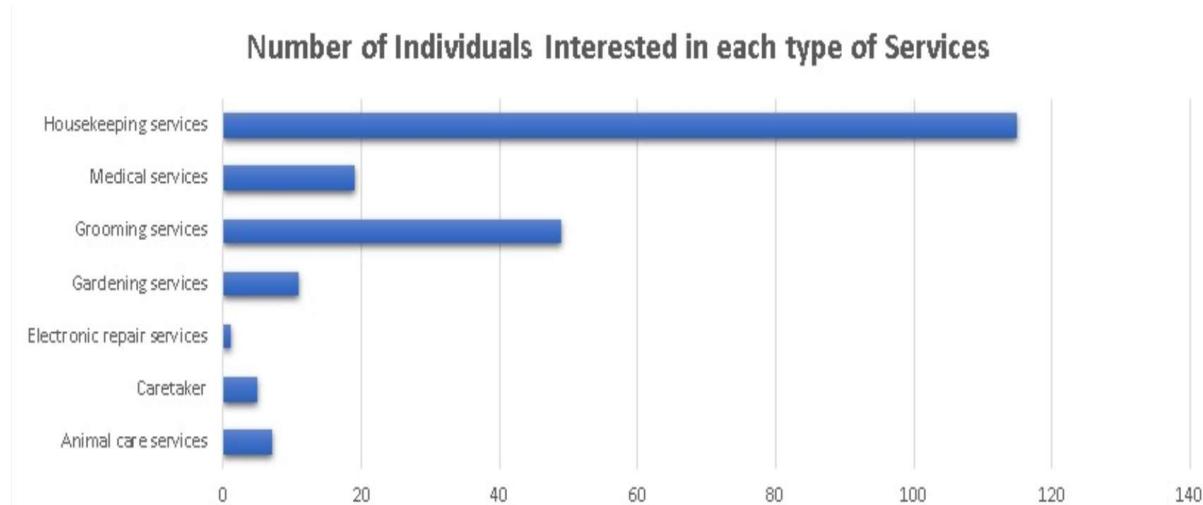
1. The provider offers a comprehensive range of Home Care Services, encompassing Maid, Cook, Driver, Old Age Care, and Baby Care.
2. Prospective workers are required to have prior experience of at least 3-4 years.
3. Viyaa Home Care Service does not offer formal training programs; instead, they rely on the experience and expertise of their workers.
4. Pricing is flexible and tailored to individual needs, contingent upon the scope of work and services requested.
5. Stringent screening and background checks are conducted on all workers to ensure client safety.
6. Currently, the agency utilizes memos for storing client and worker information; however, a more robust documentation system may be needed.
7. The service agreement is clearly defined, outlining terms and conditions. Contracts range from a minimum of 1 month to a maximum of 6 months, with the option for renewal thereafter.
8. Clients have the flexibility to request a change of caregiver if they are dissatisfied with the service, offering unlimited caregiver changes.
9. Reviews and feedback are gathered through their website, allowing clients to rate and provide comments on the service.
10. Viyaa Home Care Service is supported by a parent company, which assists in generating online traffic.
11. Financial assistance is not provided to caregivers; instead, they receive a percentage of their earnings from the client.
12. Matching caregivers' skills to specific requirements and creating complex schedules is a significant challenge.
13. Implementing a system that generates invoices based on actual services delivered would increase transparency and client satisfaction.

1.2.3 Questionnaire:

1. Name:
2. Age:
Under 18 / 18-25 / 25-30 / 30-50 / Above 50
3. What specific home care services are you interested in?
Housekeeping services / Grooming services / Gardening services / Animal care services / Medical services / Caretaker / Electronic repair services / Other...
4. How often do you anticipate the need for home care services?
Daily / Weekly / Monthly / As needed
5. What factors are important to you when choosing a home care service provider?
(Rank in order of importance)
Cost / Availability / Ratings / Quality
6. How much money are you willing to spend for 1 hour of home care service?
Up-to 500 / 500-1000 / Above 1000 / As per the service utilized.
7. What is your preferred payment method?
Card / Cash / Online / Cheque / Other
8. How would you like to receive updates?
App notification / Email / SMS
9. Are there any features or functionalities that you expect from a home health care service agency?
10. Do you have any prior experience with homecare service?
(Book-at-home services like UrbanClap or any other.)
Yes / No
11. What homecare service did you use?
Housekeeping services / Grooming services / Gardening services / Animal care services / Medical services / Caretaker / Electronic repair services / Other...
12. How would you rate your experience with that service?
1 / 2 / 3 / 4 / 5
13. Do you feel that the care provider had adequate training?
Yes / No

Link: <https://forms.gle/iN6mPK9eXR4tanAv7>

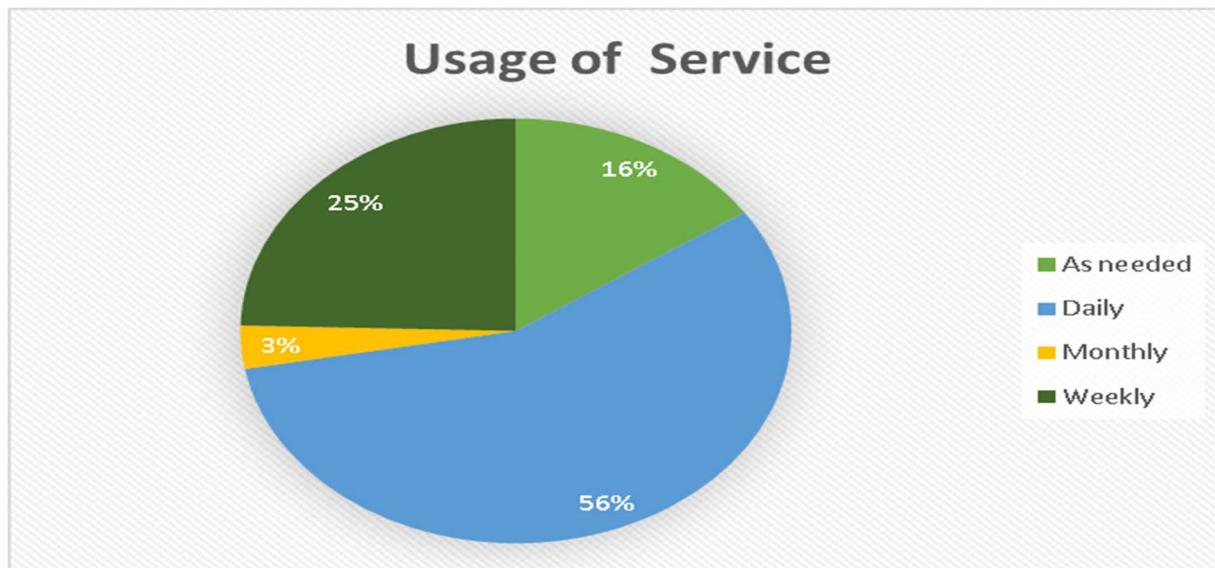
Summary:



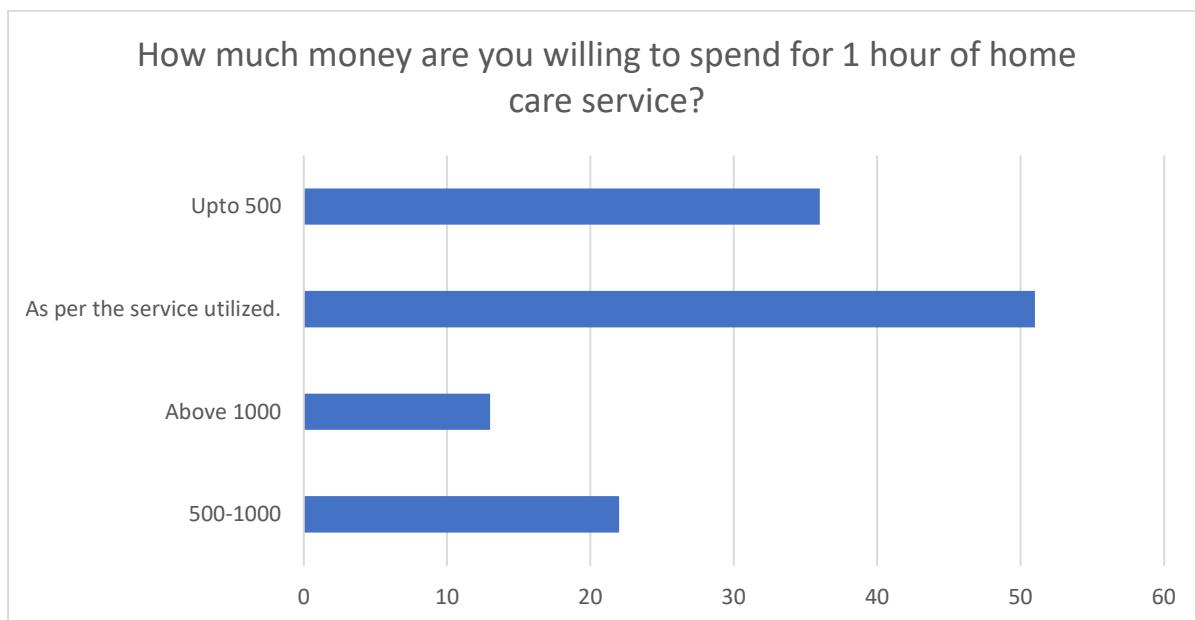
The graph shows the number of individuals interested in different types of services. The graph suggests that the most popular services are housekeeping and medical services, with over 100 individuals interested in each. The least popular service is animal care services, with fewer than 20 individuals interested.

Preferred Payment Method	18-25	25-30	30-50	Above 50
Card	12	6	3	14
Cash	15	6	6	12
Cheque	6	4	4	8
Online	16	5	1	4

From this data, we can infer trends like younger individuals (18-25) showing a strong preference for Online and Card payments, while older individuals (Above 50) also prefer Card payments but are more inclined towards Cash and Cheques compared to the middle age groups.



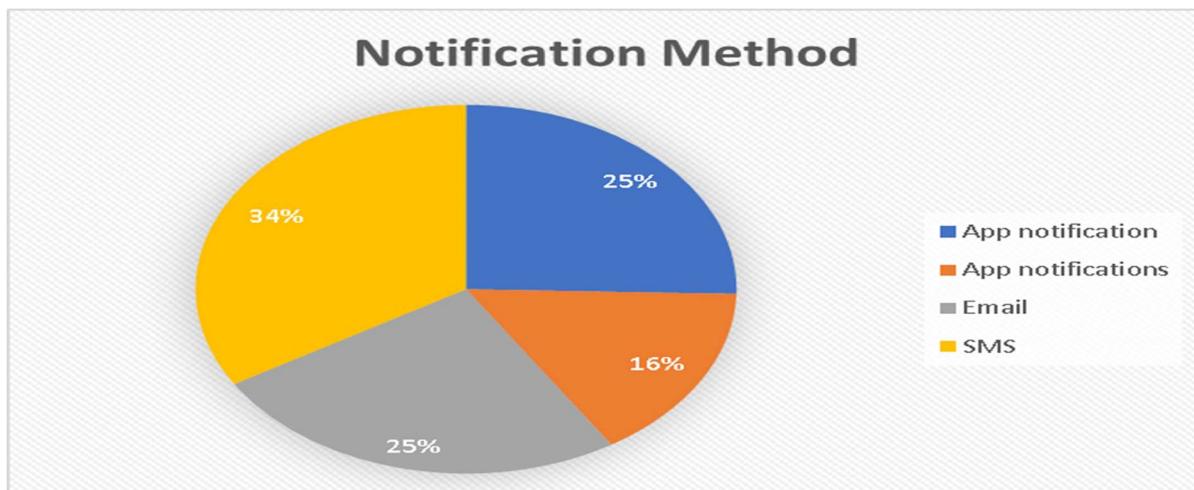
The usage of the service varies, with 56% of users requiring it whenever it is needed, and 16% requiring it daily. Some users also require it weekly or monthly.



The bar chart displays the preferences of individuals regarding how much they are willing to spend for one hour of home care service. Here's what can be inferred from the chart:

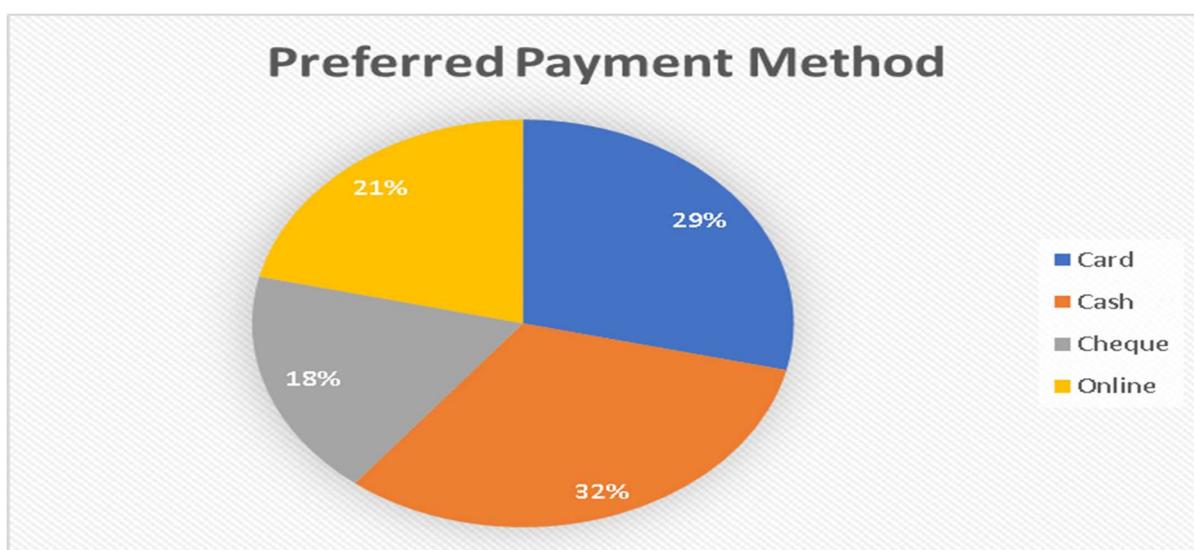
1. The majority of respondents are willing to spend "As per the service utilized," which suggests that this group prefers a variable cost that corresponds directly to the nature and extent of services they receive.
2. A significant number of people are looking for affordable options and are not willing to spend more than 500 units of currency for an hour of service.

3. The categories "500-1000" and "Above 1000" have fewer respondents, which implies that fewer individuals are willing to spend in these higher ranges for an hour of home care service.
4. The least preferred option is "Above 1000," suggesting that there is a smaller market segment for premium home care services within the surveyed population.



From this chart, we can infer:

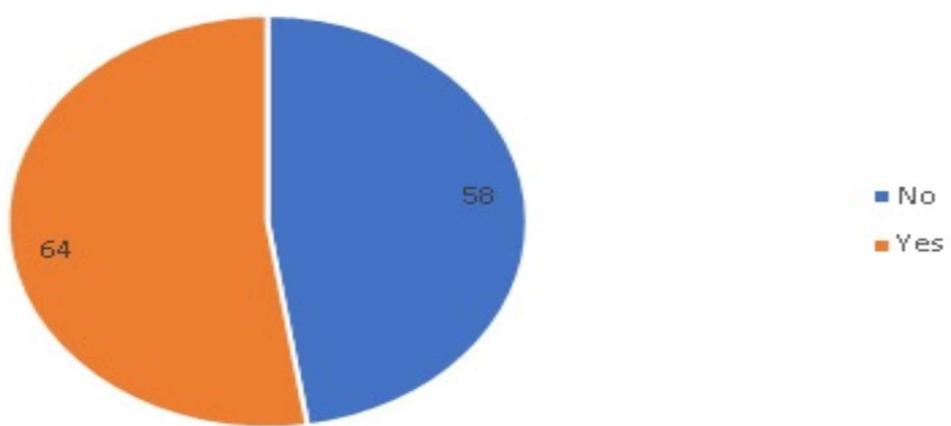
- App notifications are the most preferred method of receiving notifications, with 34% of respondents choosing this option.
- Email notifications are equally preferred as app notifications, also standing at 34%.
- SMS is the next preferred method at 25%.
- The least preferred method is multiple app notifications, with only 7% of respondents choosing this option.



From this chart, we can infer:

- The most preferred payment method is online, chosen by 32% of respondents, which suggests a strong inclination towards digital transactions.
- Card payments are close behind, preferred by 29% of respondents, indicating a significant preference for cashless transactions.
- Cash is still a relatively popular payment method, with 21% preferring it.
- Cheques are the least preferred payment method at 18%, suggesting a shift away from traditional banking methods in favor of more instant and electronic transactions.

User Experience with Home Care Services



The chart shows that a slightly larger group of users have experience with home care services (64 individuals) compared to those who haven't (58 individuals).

1.2.4 Observation/s:

Summary of observations:

- In this observation, we aimed to understand the specific requirements and challenges faced by the Home Care Service Agency.
- The goal was to gather insights that would inform the development of the Home Care Database Management System.
- The service provider frequently mentioned difficulties in maintaining data and security issues.

- We noted concerns about clients continuously rejecting caregivers. Therefore, they have to provide someone else's service, which leads to scheduling issues.
- The agency also mentioned how the site is empty sometimes as there are no clients, but they must still give caregivers a salary.
- There is an urgent need to create a database to make data management easy.
- Develop a system for the security of clients as well as caregivers.
- Develop a user-friendly system for proper interaction with clients and gather their requirements.
- Develop a security system for the privacy of data.

Combined Requirements gathered from Observations:

- Client Information: Store client details, including name, contact information, medical history, and preferences.
- Caregiver Information: Record caregiver information, including qualifications, availability, and contact details.
- Service Available: Create a catalogue of available services, including descriptions and pricing.
- Scheduling: Implement a scheduling system to assign caregivers to clients and manage shifts.
- Billing and Payments: Store billing information, track invoices, and record payment history.
- Reporting: Develop reporting capabilities for monitoring caregiver performance, client satisfaction, and financial data.
- Document Management: Implement a system for storing and managing client care plans, assessments, and other documentation.
- Compliance and Regulations: Ensure the database design complies with relevant healthcare regulations and data privacy laws.
- Security: Implement robust security measures to protect sensitive client and caregiver data.
- Scalability: Design the database with scalability in mind to accommodate the growth of the agency.
- User-Friendly Interface: Ensure the database has a user-friendly interface for staff to input and retrieve data.
- Mobile Accessibility: Consider mobile access for caregivers to view schedules and client information on the go.
- Feedback and Reviews: Include a mechanism for clients and caregivers to provide feedback and reviews.

1.2.5 Fact finding chart:

Objective	Technique	Subject	Time Commitment
Domain Understanding	Background Reading	Papers related to Domain, Home care service provider websites	
To establish requirements for the system	Questionnaire	Target audience	1 Week
Understand Service offerings	Interview	2 managers	45 Minute
Assess Caregiver Qualification	Access Caregiver documents	2 managers	20 Minute
Background check	Verbal communications with the previous Clients	Managers and previous clients	1 Hour
Review Service area coverage	Visit sites	Clients and managers	15 minutes
Explore Customization Option	Visit Site/ Interview client	Clients	30 Minute
Determine Cost Structure	Predetermined/ Discuss with client	2 Home care providing agency manager	30 Minute
Service Contract	Document Agreement between client & Service provider	Clients, Service Provider, Caregiver	1 Hour
Assess client Satisfaction	Interview / Website rating	Clients	10 Minute
Understand Complaint resolution	Interview / Resolving previous problems	Managers and Caregiver/Worker	1 Hour

1.3 List of Requirements:

- User-Friendly Interface: Develop an intuitive and easy-to-navigate system to enhance the home care service experience for clients.
- Effective Data Management: Establish efficient data storage and management processes to streamline operations related to client and caregiver data.
- Well-Trained Caregivers: Ensure caregivers receive comprehensive training and possess the necessary skills to provide high-quality care.
- Billing and Invoicing: Implement a system that generates invoices based on the actual services rendered to enhance transparency and improve client satisfaction.
- Customized Care Matching: Address the challenge of matching caregivers' skills to specific client requirements and creating complex schedules.
- Appointment Scheduling: Provide clients with a convenient system to schedule appointments with caregivers.
- Security Measures: Maintain robust data security practices and adhere to privacy regulations, especially when handling sensitive client information, to ensure the company's operations are secure.
- Reviews and Feedback: Establish a feedback system that enables clients and caregivers to share their experiences, promoting continuous improvement.
- Data Privacy Compliance: Strictly adhere to data privacy regulations to always safeguard client confidentiality.
- Customer Support: Offer responsive and efficient customer support to address client inquiries and provide assistance promptly.

1.4 User categories and privileges:

Here's a basic outline of user categories and their associated privileges for the system:

1. Administrator

Administrators have full control over the entire database system and its settings. They are responsible for managing user accounts, configuring system parameters, and ensuring data security.

Privileges:

- Create, modify, and delete user accounts.
- Configure system settings and preferences.
- Access to all client and worker profiles.

- Manage contracts and service schedules.
- Monitor financial transactions and payments.
- Generate reports and analytics.
- Grant and revoke privileges for other user categories.
- Perform data backups and recovery.

2. Caregiver

Caregivers are the frontline workers who provide in-home services to clients. They need access to essential information about their assigned clients and tasks.

Privileges:

- Access their personal profile and contact details.
- View assigned client profiles.
- Access service schedules and task details.
- Record service completion and task notes.
- View their own payment history.

3. Client

Clients are the individuals or households receiving home care services. They need access to their own profiles and service-related information.

Privileges:

- Access their personal profile and contact details.
- View scheduled services and caregivers assigned.
- Provide feedback and reviews.
- View payment history and invoices.

4. Quality Assurance Specialist

Quality Assurance Specialists focus on maintaining service quality and client satisfaction. They review service performance and gather feedback.

Privileges:

- Access service quality metrics and reports.
- Review client feedback and complaints.
- Monitor service completion status.
- Suggest improvements and interventions.
- Communicate with clients and caregivers regarding service quality.

1.5 Assumptions:

1. Data Privacy and Security:

The database system will incorporate robust security measures to protect sensitive client and caregiver information, including encryption, access controls, and regular security audits.

2. Client-Worker Matching Algorithm:

The client-worker matchmaking algorithm will use accurate data to make effective pairings, and it will be continually optimized to improve matching accuracy.

3. Client Feedback:

Clients will provide feedback and reviews as part of the system's quality assurance process, and this feedback will be used to enhance service quality.

These assumptions are critical considerations when designing and implementing the Home Care Worker Management Database to ensure its effectiveness and usability in a real-world home care agency setting.

1.6 Business constraints:

1. Data Privacy and Security:

Strict regulations and legal requirements regarding the storage and handling of client and caregiver data.

Requirement to implement robust data encryption, access controls, and compliance measures.

2. Compatibility:

Need to ensure that the database system is compatible with existing software and hardware infrastructure.

Compatibility with various web browsers and devices for user accessibility.

3. Scalability:

Requirement to design the system to accommodate future growth and expansion of the home care agency.

Scalability to handle a growing number of clients, caregivers, and service offerings.

3. Data Integrity:

Ensuring the accuracy and reliability of data stored in the database.

Implementing data validation checks to prevent errors and inconsistencies.

4. User Training:

Providing training and support to users (administrators, caregivers, clients) to effectively use the database system.

Ensuring that users can navigate the system with ease.

5. Compliance:

Adhering to industry-specific regulations and standards related to home care services.

Staying compliant with data protection and healthcare regulations.

6. User Feedback and Iteration:

Establishing mechanisms for gathering user feedback and continuously improving the database system based on user needs and suggestions.

Iterating on the system to enhance functionality and usability.

7. Internet Connectivity:

Users will have access to a stable internet connection to use the cloud-based database system seamlessly.

These business constraints should be carefully considered during the development and implementation of the Home Care Service Provider Database to ensure its success and effectiveness in meeting the agency's goals and objectives.

2 Entity Relation Diagram

2.1 Noun Analysis Table

Table 0: Nouns (entities) and verbs (relationships) in sentences of the problem description using Noun Analysis Method.

Nouns	Verbs
Home Care Worker	play
Management	act
Evolution	strive
Database	encompass
Solution	cater
World	categorized
Population	includes
Demand	require
Services	assist
Agencies	covers
Role	offer
Gap	ensure
Convenience	seek
Individuals	offer
Care	troubleshoot
Assistance	fix
Comfort	play
Plumbing	maintain

Electrical work	provide
Gardening	require
Service	specialized
Needs	require
Maintenance	collect
Homeowners	analyze
Specialized assistance	provide
Offerings	empower
Categories	embrace
Healthcare	presents
Category	track
Nursing	reduces
Physical therapy	enhances
Medication management	leads
Palliative care	continues
Illnesses	manage
Surgeries	grapple
Support	lead
Personal care aides	hinder
Activities	become
Daily living (ADLs)	need
Bathing	goes
Dressing	presents
Grooming	track

Mobility support	ensuring
Disabilities	access
Home Maintenance	reduce
Range	leads
Animal Care	provide
Pet owners	enable
Dog walking	use
Feeding	streamlines
Veterinary visits	fosters
Companions	maintain
Electronic Repair Services	defining
Devices	making
Need	digitizes
Specialists	making
Appliances	uphold
Cleaning Services	build
Cleaning staff	access
Maids	reduces
Living environment	fostering
Personal Grooming Services	monitors
Haircuts	gathering
Manicures	allows
Pedicures	identify
Service categories	make

Challenges	ensuring
Workforce	matching
Organization	needs
Coordination	reduces
Data management	enables
Need	managing
Database Management System	tracks
Challenges	ensuring
Workforce scheduling	helps
Client engagement	ensures
Quality assurance	ensuring
Management	have
Services	ensures
Resources	minimizes
Task	transforming
Daunting task	allows
Information	collect
Coordinating	analyze
Tools	provides
Technology	simplifies
Advancements	enhances
Internet of Things (IoT) devices	promotes
Opportunities	continues
Equipment	extends

Status	drive
Performance	tailor
Proactive approach	stands
Downtime	informs
Insights	helping
Trends	target
Preferences	stands
Efficiency	provides
Decisions	exceeds
Technology	serves
Era	includes
Data	define
Home care agencies	digitizes
Features	steps
Client Information	ensures
Functions	monitors
Records	effortlessly
Details	fosters
Contact information	automating
Requirements	ensuring
DBMS	includes
Client data	tracking
Services	allows
Response	monitor

Feature	gather
Overstated	allows
Service providers	identify
Home service providers	make
Caregiver	serves
Matchmaking	helps
Standout features	optimize
Abilities	matching
Algorithms	improve
Data analysis	reduce
Skills	helps
Qualifications	track
Personalities	ensuring
Requirements	reduces
Art	includes
Industry	tracking
Pairings	completed
Quality	gathering
Care	allows
Client satisfaction	transform
Contract Tracking	stands
Lifeblood	enhances
Business	promotes
Terms	transforms

Obligations	simplifies
Expectations	enhances
Solution	promotes
Party	transforms
Agencies	streamlines
Details	enhances
Schedules	promotes
Rates	streamlines
Considerations	elevates
Transparency	simplifies
Tracking	delivers
Contracts	responds
Visibility	overstated
Terms	stands
Ability	foster
Updates	promotes
Mechanism	
Accurate Payment Monitoring	
Transactions	
Responsibility	
Element	
Environment	
Payment processes	
Morale	

Job satisfaction	
Payment calculations	
Risk	
Errors	
Processes	
Positive work environment	
Service Quality Assurance	
Reputation	
Success	
Tools	
Feedback	
Areas	
Excellence	
Organization	
Scheduling	
Resource Allocation	
Crucial	
Optimization	
Skills	
Availability	
Professionals	
Travel time	
Costs	
Scheduling	

Resource allocation	
Puzzles	
Maintenance services	
Plumbing	
Condition	
Insights	
Demographics	
Utilization patterns	
Performance	
Services	
Areas	
Workforce distribution	
Marketing efforts	
Audience	
Conclusion	
Operations	
Mission	
Proficiency	
Cutting edge technology	
Excellence	
Transparency	
Decision making	
Industry	
Home Care Worker Management Database	

Power	
Lives	
Beacon	
Innovation	
Operations	
Home Care Worker	
Providing Agencies	
Features	
Client Information	
Records	
Details	
Solution	
Clients	
Workers	
Contracts	
Transactions	
Database system	
Processes	
Quality of care	
Transparency	
Decision making	
Industry	
Needs	
Population	

Individuals	
Services	
Gadgets	
Gap	
Gardening	
Grooming	
Records	
Haircuts	
Healthcare	
Heart	
Home care industry	
Home Care Worker Management	
Home Maintenance	
Home maintenance services	
Home service agencies	
Homeowners	
Homes	
Importance	
Improvement	
Increasing reliance	
Independence	
Individuals	
Insight	
Integration	

Intermediaries	
Employee Information	
Salary	
Internet of Things	
Introduction	
Risk	
Role	
Repairs	
Routine house cleaning	
Safety	
Sanitation	
Scheduling	
Service quality	
Reputation	
Resource Allocation	
Service quality assurance	
Service requirements	
Service schedules	
Services	
Services	
Skilled nursing	
Solution	
Standout features	
Responsibility	

Status	
Success	
Technicians	
Technology	
Understanding	
Terms	
Tools	
Transparency	
Veterinary visits	
Visibility	
Work environment	
Transparency	
Trust	
Population growth	
Range	
Rates	
Recognition	
Trends	
Trust	
Workforce	
Workforce scheduling	
World	
Job satisfaction	
Level	

Lifeblood	
Living environment	
Maids	
Manicures	
Medication management	
Mobility support	
Morale	
Need	
Needs	
Obligations	
Offerings	
Opportunities	
Payment Monitoring	
Organization	
Others	
Pairings	
Palliative care	
Part	
Preferences	
Process	
Payment processes	
Peace of mind	
Pedicures	
Performance	

Personal Care	
Personal Grooming Services	
Pet care	
Pet owners	
Physical therapy	
Plumbing	

Table 1. Candidate Entity Set

Noun	Reason
Services	These are the broad categories of services provided by Home Care Worker Providing Agencies, and they encompass a wide range of specific tasks or offerings.
Contracts	Represents the contractual agreements between clients and agencies, defining the terms of service, obligations, and expectations for both parties.
Clients	Maintaining comprehensive records of client information is essential for delivering personalized care and responding promptly to client needs.
Electrical work	Electrical work is a specialized service that necessitates detailed database entries, including equipment and scheduling.
Personal Care Services	Activities of daily living (ADLs) are essential aspects of personal care services, making them crucial for the database.
Pet care	To manage services related to pet care, including dog walking, feeding, and grooming.
Cleaning Services	Cleaning services are a significant part of home maintenance and require proper tracking in terms of scheduling and resource allocation. These services are aimed at maintaining a clean and healthy living environment for clients and can range from routine house cleaning to deep cleaning and sanitation.

Personal Grooming Services	This represents a category of services provided by the Agency that involves personal grooming activities such as haircuts, manicures, and pedicures
Salary	To track caregiver compensation and ensure accuracy in financial transactions.
Qualifications	This entity is important for managing information about the workers, ensuring they are properly matched with clients, and accurately compensated
Service schedules	This entity is crucial for ensuring efficient scheduling and resource allocation.
Rates	Rates represents the cost structure associated with the services
Financial transaction	For accurate payment monitoring and transparency in financial dealings.
Client feedback	To monitor service quality and collect feedback from clients.
Inventory	This entity is relevant for agencies providing home maintenance services, as they need to manage spare parts, tools, and equipment.
Workers	Workers represents the caregivers or professionals employed by the Agency to deliver various in-home services

Table 2. Candidate Attribute Set

Noun	Likely attribute set to be assigned
Services	<ul style="list-style-type: none"> • <u>Service_Name</u> • Amount • Worker_id
Contracts	<ul style="list-style-type: none"> • <u>Contract_id</u> • Client_id • Service_Name • Worker_id • Date • Time • Amount • Gender Specifications • Worker_Experience

Clients	<ul style="list-style-type: none"> • <u>Client_id</u> • Name • Address • Contactno • Email
Electrical work	<ul style="list-style-type: none"> • <u>E_id</u> • E_Name • Inventoty_Name • Rate_id • Worker_id
Personal Care Services	<ul style="list-style-type: none"> • P_id • Care Plan • Rate_id • Worker_id
Pet care	<ul style="list-style-type: none"> • P_id • Type of Pet Care (e.g., Walking, Feeding) • Rate_id • Worker_id
Cleaning Services	<ul style="list-style-type: none"> • C_id • Cleaning Schedule • Inventoty_Name • Rate_id • Worker_id
Personal Grooming Services	<ul style="list-style-type: none"> • G_id • Grooming Service Type • Rate_id • Worker_id
Salary	<ul style="list-style-type: none"> • <u>S_id</u> • Worker_id • Contract_id • - Salary
Qualifications	<ul style="list-style-type: none"> • <u>Q_id</u> • Worker_id • Experience
Service schedules	<ul style="list-style-type: none"> • <u>SS_id</u> • Worker_id • Contract_id • Time • Date • Status

Rates	<ul style="list-style-type: none"> • Rate_id • Service_Name • Cost Structure (e.g., hourly rates, flat fees) • Service Duration • Additional Charges (if any) • Payment Methods Accepted
Financial transaction	<ul style="list-style-type: none"> • Transaction ID • Client Details
Client feedback	<ul style="list-style-type: none"> • <u>Feedback_id</u> • Contract_id • Worker_id • Rating • Feedback
Inventory	<ul style="list-style-type: none"> • <u>Inventory_Name</u> • Service_Name • Min_Inventory • Current_Inventory

Table 3. Rejected Noun List

Noun	Reason
Evolution	Irrelevant
Home Care Worker	General
Management	Vague
Database	Irrelevant
Solution	Vague
Introduction	Vague
World	Vague
Population	Vague
Demand	Vague
Services	Association

Agencies	General
Role	Vague
Convenience	Vague
Intermediaries	Vague
Individuals	Vague
Homes	Irrelevant
Plumbing	Attribute
Electrical work	Attribute
Gardening	Attribute
Service	Duplicate
Needs	General
Healthcare	Attribute
Category	Attribute
Skilled nursing	Irrelevant
Physical therapy	Attribute
Medication management	Irrelevant
Palliative care	Attribute
Illnesses	Irrelevant
Surgeries	Irrelevant
Support	General
Personal Care Services	General
Aides	Irrelevant
Activities	Vague

Daily living (ADLs)	Vague
Bathing	Attribute
Dressing	Attribute
Grooming	Attribute
Mobility support	Attribute
Disabilities	Irrelevant
Independence	Vague
Maintenance	General
Range	Vague
Plumbing	Duplicate
Electrical work	Duplicate
Gardening	Duplicate
Home repairs	Irrelevant
Safety	General
Functionality	Vague
Comfort	Irrelevant
Residents	Vague
Animal Care Services	Attribute
Pet owners	Irrelevant
Assistance	Vague
Dog walking	Attribute
Feeding	Irrelevant
Grooming	Duplicate

Veterinary visits	Attribute
Peace	Vague
Companions	Vague
Electronic Repair Services	Duplicate
Reliance	Vague
Devices	Vague
Technicians	Vague
Appliances	Vague
Gadgets	Vague
Cleaning Services	Attribute
Cleaning staff	Irrelevant
Maids	Attribute
Role	Vague
Living environment	Vague
House cleaning	Irrelevant
Deep cleaning	Irrelevant
Sanitation	Irrelevant
Personal Grooming Services	Irrelevant
Individuals	Vague

Haircuts	Attribute
Manicures	Attribute
Pedicures	Attribute
Comfort	Vague
Categories	Vague
Challenges	Vague
Demands	Vague
Worker Providing Agencies	General
Workforce	General
Domains	Vague
Level	Vague
Organization	Vague
Coordination	Vague
Data management	General
Need	General
Database Management System	Irrelevant
Home service agencies	Irrelevant
Challenges	Vague
Workforce scheduling	Irrelevant
Client engagement	Irrelevant
Service quality assurance	Irrelevant
Financial management	Vague

Efficiency	General
Growth	Vague
Management systems (DBMS)	Irrelevant
World	Vague
Data management	Irrelevant
Technological advancements	Vague
Internet of Things (IoT)	Vague
Home maintenance services	Irrelevant
Status	Vague
Performance	Irrelevant
Equipment	Attribute
Downtime	Vague
Safety	Duplicate
Quality	Irrelevant
Technology	Vague
Era	Vague
Data	Vague
Decisions	Vague
DBMS	General
Home care agencies	Irrelevant
Insights	Vague
Trends	Vague
Client preferences	Irrelevant

Operational efficiency	Irrelevant
Technology	Vague
DBMS	Duplicate
Integral part	Vague
Home care industry	Irrelevant
Features	Attribute
Home Care Worker Management Database	Irrelevant
Client Information	Attribute
Functions	General
Home service agencies	Duplicate
Records	Vague
Details	Vague
Contact information	Attribute
Requirements	General
DBMS	Irrelevant
Client data	Attribute
Services	Attribute
Client-Worker Matchmaking	Irrelevant
Feature	Duplicate
Ability	Vague
Client-worker matchmaking	Duplicate
Client	Attribute
Preferences	Vague
Requirements	Vague
System	Vague

Algorithms	Vague
Data analysis	Vague
Skills	Vague
Qualifications	Irrelevant
Personalities	Vague
Matchmaking	Irrelevant
Home care industry	Irrelevant
Pairings	Vague
Quality of care	Irrelevant
Client satisfaction	Attribute
Transparent Contract Tracking	Irrelevant
Lifeblood	Vague
Obligations	Vague
Expectations	Vague
Parties	Vague
Solution	Vague
Contract tracking	Irrelevant
Contracts	Attribute
Terms of service	Irrelevant
Rates	Irrelevant
Special considerations	Vague
Transparency	Vague

Agencies	General
Commitments	Vague
Relationships	Vague
Client-worker Matchmaking	Duplicate
Reliable solution	Vague
Payment Monitoring	Irrelevant
Financial transactions	Duplicate
Heart	Vague
Responsibility	Vague
Workforce	Vague
Tasks	Vague
Payment processes	Irrelevant
Risk	Vague
Errors	Vague
Workers	Irrelevant
Morale	Vague
Job satisfaction	Vague
Automation	Vague
Processes	Vague
Service Quality Assurance	Irrelevant
Reputation	Vague

Success	Vague
Tools	Irrelevant
Tasks	Vague
Feedback	Irrelevant
Areas	Vague
Improvement	Vague
Adjustments	Vague
Assurance	Vague
Ongoing process	Vague
Culture	Vague
Excellence	Vague
Organization	Vague
Scheduling and Resource Allocation	Irrelevant
Efficient scheduling	Irrelevant
Resource allocation	Irrelevant
Skills	General
Availability	General
Professionals	Vague
Needs	Vague
Travel time	Vague
Costs	Vague

Scheduling	Duplicate
Resource allocation	Vague
Puzzles	Vague
Services	Duplicate
Clients	Duplicate
Time	Vague
Costs	Vague
Inventory and Equipment Management	Irrelevant
Agencies	Duplicate
Equipment	Duplicate
Essential	Vague
Inventory	Duplicate
Spare parts	Vague
Tools	Vague
Resources	Vague
Technicians	Vague
Maintenance scheduling	Duplicate
Condition	Vague
Equipment	Duplicate
Downtime	Vague
Safety	Duplicate
Management	Duplicate

Equipment	Duplicate
Real-time	Vague
Technicians	Duplicate
Resources	Vague
Power	Vague
Data	Vague
Insights	Vague
Era	Vague
DBMS	Irrelevant
Home service agencies	Duplicate
Data	Vague
Insights	Vague
Trends	Vague
Client preferences	Duplicate
Operational efficiency	Vague
Decision-making	General
Resource allocation	Duplicate
Business strategy	Vague
Services	Duplicate
Geographic areas	Vague

Workforce distribution	Vague
Demands	Vague
Marketing efforts	Vague
Services	Duplicate
Conclusion	Vague
Solution	Vague
Operations	Vague
Agencies	Duplicate
Clients	Duplicate
Workers	Duplicate
Contracts	Duplicate
Financial transactions	Duplicate
Mission	Vague
Client satisfaction	Duplicate
Resource management	Duplicate
System	General
Proficiency	Vague
Agencies	Duplicate
Clients	Duplicate
Workers	Duplicate
Contracts	Duplicate
Transactions	Vague

Technology	Duplicate
Quality	Vague
Transparency	Vague
Decision-making	Duplicate
Industry	Vague
Era	Vague
Data	Vague
Beacon	Vague
Innovation	Vague
Efficiency	Vague
Testament	Vague
Technology	Duplicate
Lives	Vague
Clients	Duplicate
Caregivers	Irrelevant
World	Vague
Home care services	Irrelevant
Comprehensive solution	Vague
Administrative processes	Vague
Quality of care	Irrelevant
Transparency	Duplicate
Decision-making	Duplicate
Era	Duplicate

Big data	Vague
DBMS	Duplicate
Home service agencies	Irrelevant
Data	Vague
Insights	Vague
Trends	Vague
Client preferences	Duplicate
Caregiver performance	Duplicate
Services	Duplicate
Demographics	Vague
Service utilization patterns	Vague
Business strategy	Vague
Data analysis	Vague
Marketing efforts	Vague
Services	Duplicate

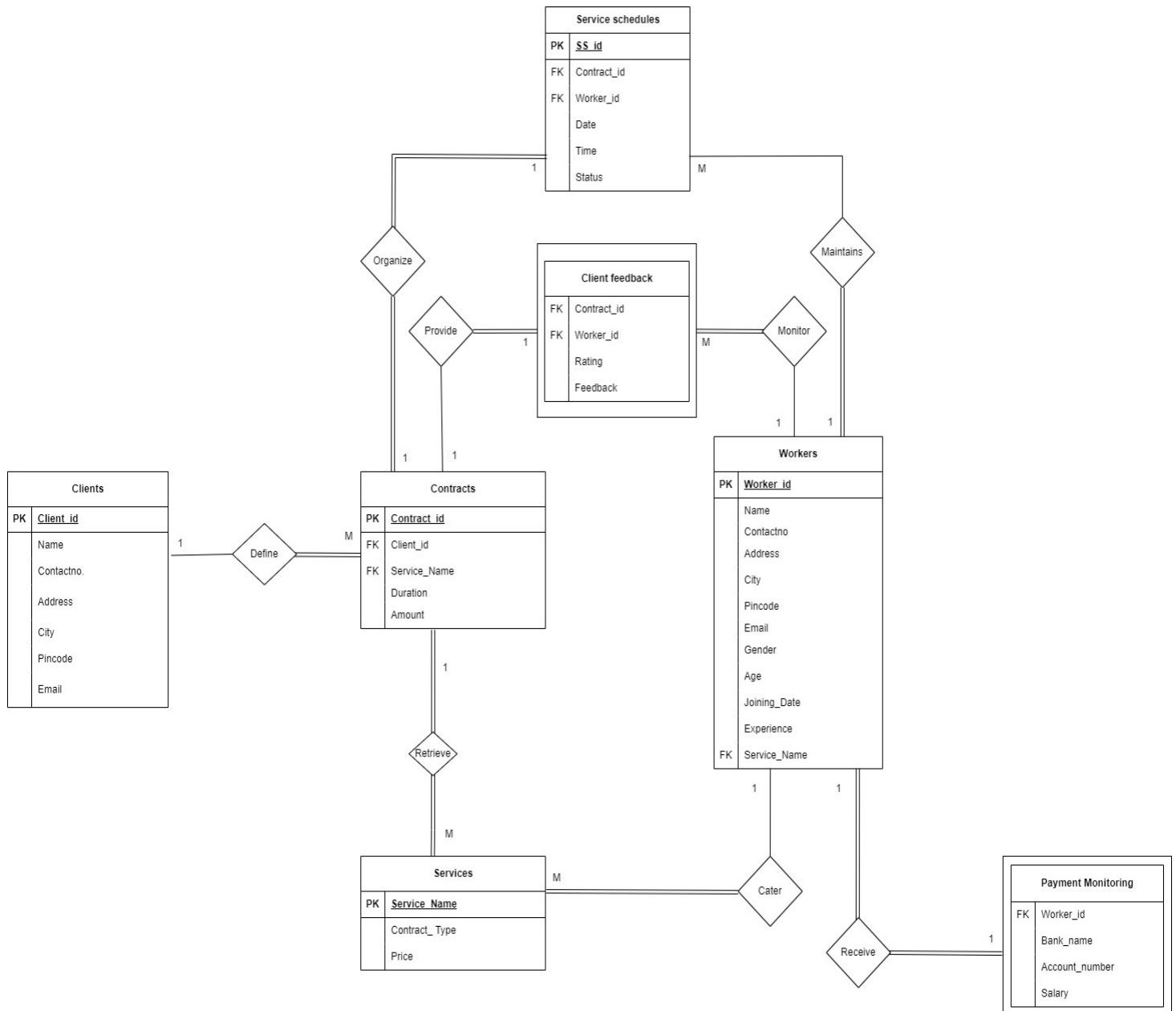
2.2 Entity-Attribute Table

Final Entity Set

Noun	List of Attributes
Clients	<ul style="list-style-type: none"> • <u>Client_id</u> • Name

	<ul style="list-style-type: none"> • Contactno • Address • Email
Workers	<ul style="list-style-type: none"> • <u>Worker_id</u> • Name • Address • Contactno • Email • Gender • Age • Joining_Date • Experience • <u>Service_Name</u>
Services	<ul style="list-style-type: none"> • <u>Service_Name</u> • Contract_Type • Price
Contracts	<ul style="list-style-type: none"> • <u>Contract_id</u> • Client_id • Service_Name • Duration • Date • Time • Amount
Service schedules	<ul style="list-style-type: none"> • <u>SS_id</u> • Contract_id • Worker_id • Date • Time • Status
Client feedback	<ul style="list-style-type: none"> • Contract_id • Worker_id • Rating • Feedback
Salary	<ul style="list-style-type: none"> • Worker_id • Bank_name • Account_number • Salary

2.3 ERD



1. 3. Database Schema

3.1 Relational Schema

1. **Clients** (Client_id (INT), Name (VARCHAR), Contactno (INT), Address(VARCHAR), Email (VARCHAR))
2. **Workers** (Worker_id (INT), Name (VARCHAR), Contactno (INT), Address (VARCHAR), Email (VARCHAR), Gender (VARCHAR), Age (INT), Joining_Date (DATE), Experience (INT), Service_Name (VARCHAR))
3. **Services** (Service_Name (VARCHAR), Contract_Type (VARCHAR), Price(INT))
4. **Contracts** (Contract_id (INT), Client_id (INT), Service_Name (VARCHAR), Required_experience (INT), Duration (INT), Date (DATE), Time(TIME), Amount (INT))
5. **Service schedules** (SS_id (INT), Contract_id (INT), Worker_id (INT), Date (DATE), Time(TIME), Status (VARCHAR))
6. **Client feedback** (Contract_id (INT), Worker_id (INT), Rating (INT), Feedback (VARCHAR))
7. **Payment Monitoring** (Worker_id (INT), Bank_name(VARCHAR), Account_number(INT), Salary (INT))

3.2 Schema Refinement Process

List of redundancies:

Update, Insert and Delete anomaly: If any alterations are made to the date and time within the contract table, we must also update the corresponding information in the service schedule table. Duplicating date and time values can result in data redundancy.

This issue was resolved by eliminating the repeating information.

Conversion to 1 NF:

For relational database table to be in 1NF it must satisfy three main conditions:

- It must contain only atomic (indivisible) values in each column, there must be a unique identifier, the data in each column should be of the same data type.
- The clients table did not meet the first normal form (1NF) criteria because the "address" attribute was multivalued. Consequently, we resolved this issue by splitting the column into separate "address," "city," and "pin code" columns.

- The workers table did not meet the first normal form (1NF) criteria because the "address" attribute was multivalued. Consequently, we resolved this issue by splitting the column into separate "address," "city," and "pin code" columns.

Conversion to 2 NF:

In order to satisfy 2NF criteria, a table must meet two requirements: It should already conform to 1NF, meaning that all attributes must be atomic (indivisible). Secondly, it must ensure that no partial dependencies exist within the table.

All the tables are in 2NF.

Conversion to 3 NF:

To achieve 3NF, three criteria must be met:

- First, the table must be in 2NF, meaning that it has a primary key, and all non-key attributes are functionally dependent on the entire primary key.
- Second, it should eliminate transitive dependencies, which means that non-key attributes are not dependent on other non-key attributes.
- Lastly, 3NF also requires the removal of partial dependencies.

All the tables are in 3NF.

3.3 Normalized Schema

- Clients** (Client_id (INT), Name (VARCHAR), Contactno (INT), Address(VARCHAR), City(VARCHAR), Pincode(INT), Email (VARCHAR))
- Workers** (Worker_id (INT), Name (VARCHAR), Contactno (INT), Address (VARCHAR), City (VARCHAR), Pincode (INT), Email (VARCHAR), Gender (VARCHAR), Age (INT), Joining_Date (DATE), Experience (INT), Service_Name (VARCHAR))
- Services** (Service_Name (VARCHAR), Contract_Type (VARCHAR), Price(INT))
- Contracts** (Contract_id (INT), Client_id (INT), Service_Name (VARCHAR), Required_experience (INT), Duration (INT), Amount (INT))
- Service schedules** (SS_id (INT), Contract_id (INT), Worker_id (INT), DateTime (TIME), Date (DATE), Status (VARCHAR))
- Client feedback** (Contract_id (INT), Worker_id (INT), Rating (INT), Feedback (VARCHAR))
- Payment Monitoring** (Worker_id (INT), Bank_name(VARCHAR), Account_number(INT), Salary (INT))

4. DDL & SQL

DDL Scripts

--Schema

```
CREATE SCHEMA IF NOT EXISTS home_care
AUTHORIZATION postgres;
```

```
SET SEARCH_PATH TO home_care;
```

--Clients table

```
CREATE TABLE Clients (
    Client_id INT PRIMARY KEY,
    Name VARCHAR(100) NOT NULL,
    Contactno VARCHAR(10) NOT NULL,
    Address VARCHAR(255) NOT NULL,
    City VARCHAR(50) NOT NULL,
    Pincode VARCHAR(6) NOT NULL,
    Email VARCHAR(50) UNIQUE
);
```

--Services table

```
CREATE TABLE Services (
    Service_Name VARCHAR(100) PRIMARY KEY,
    Contract_Type VARCHAR(100) NOT NULL,
    Price INT NOT NULL
);
```

--Workers table

```
CREATE TABLE Workers (
    Worker_id INT PRIMARY KEY,
    Name VARCHAR(100) NOT NULL,
    Contactno VARCHAR(10) NOT NULL,
    Address VARCHAR(255) NOT NULL,
    City VARCHAR(50) NOT NULL,
    Pincode VARCHAR(6) NOT NULL,
    Email VARCHAR(50),
    Gender VARCHAR(10) NOT NULL,
    Age INT NOT NULL,
    Joining_Date DATE NOT NULL,
    Experience INT NOT NULL,
    Service_Name VARCHAR(100) REFERENCES Services(Service_Name)
);
```

```
-- Contracts table
CREATE TABLE Contracts (
    Contract_id INT PRIMARY KEY,
    Client_id INT REFERENCES Clients(Client_id),
    Duration INT NOT NULL,
    Service_Name VARCHAR(100) REFERENCES Services(Service_Name),
    Amount INT NOT NULL
);

-- Service_Schedules table
CREATE TABLE Service_Schedules (
    SS_id INT PRIMARY KEY,
    Contract_id INT REFERENCES Contracts(Contract_id),
    Worker_id INT REFERENCES Workers(Worker_id),
    Date DATE NOT NULL,
    Time TIME NOT NULL,
    Status VARCHAR(50) NOT NULL,
    CONSTRAINT Unique_Date_Time_Worker UNIQUE (Date, Time, Worker_id)
);

-- Client_Feedback table
CREATE TABLE Client_Feedback (
    Contract_id INT REFERENCES Contracts(Contract_id),
    Worker_id INT REFERENCES Workers(Worker_id),
    Rating INT CHECK (Rating >= 1 AND Rating <= 5),
    Feedback VARCHAR(255)
);

-- Payment_Monitoring table
CREATE TABLE Payment_Monitoring (
    Worker_id INT PRIMARY KEY REFERENCES Workers(Worker_id),
    Bank_name VARCHAR(100),
    Account_number VARCHAR(100) UNIQUE,
    Salary INT NOT NULL
);
```

The screenshot shows the pgAdmin 4 interface. The left panel is the Object Explorer, displaying a tree structure of database objects under the 'home_care' schema. The right panel is the Query Editor, showing a large block of SQL code for creating tables such as Contracts, Service_Schedules, Client_Feedback, and Payment_Monitoring. Below the code, it says 'Query returned successfully in 112 msec.' and 'Total rows: 0 of 0'. At the bottom, there are tabs for Data Output, Messages, and Notifications, with 'Messages' being the active tab. The status bar at the bottom right shows 'Ln 59, Col 1', 'ENG IN', and the date '08-11-2023'.

```

42 CREATE TABLE Contracts (
43     Contract_id INT PRIMARY KEY,
44     Client_id INT REFERENCES Clients(Client_id),
45     Service_Name VARCHAR(100) REFERENCES Services(Service_Name),
46     Amount INT NOT NULL
47 );
48
49 -- Service_Schedules table
50 CREATE TABLE Service_Schedules (
51     SS_id INT PRIMARY KEY,
52     Contract_id INT REFERENCES Contracts(Contract_id),
53     Worker_id INT REFERENCES Workers(Worker_id),
54     Date DATE NOT NULL,
55     Time TIME NOT NULL,
56     Status VARCHAR(50) NOT NULL,
57     CONSTRAINT Unique_Date_Time_Worker UNIQUE (Date, Time, Worker_id)
58 );
59
60 -- Client_Feedback table
61 CREATE TABLE Client_Feedback (
62     Contract_id INT REFERENCES Contracts(Contract_id),
63     Worker_id INT REFERENCES Workers(Worker_id),
64     Rating INT CHECK (Rating >= 1 AND Rating <= 5),
65     Feedback VARCHAR(255)
66 );
67
68 -- Payment_Monitoring table

```

INSERT Queries

1. Insert into Clients table

```

--Insert into Clients Table
SET SEARCH_PATH TO home_care;
INSERT INTO clients (Client_id, Name, Contactno, Address, City, Pincode, Email)
VALUES
(1, 'Aarav Patel', '9856343256', '12 Elm Street', 'Bhavnagar', '364001', 'aarav.patel@email.com'),
(2, 'Aisha Kumar', '9546739821', '56 Maple Avenue', 'Kachchhi', '370485', 'aisha.kumar@email.com'),
(3, 'Akash Gupta', '9237136386', '89 Oak Lane', 'Ankleshwar', '393010', 'akash.gupta@email.com'),
(4, 'Amrita Sharma', '8927532951', '1 Pine Road', 'Valsad', '396001', 'amrita.sharma@email.com'),
(5, 'Anika Reddy', '8617929516', '34 Birch Drive', 'Anand', '388001', ''),
(6, 'Arjun Singh', '8308326081', '67 Cedar Court', 'Ankleshwar', '393010', 'arjun.singh@email.com'),
(7, 'Arya Desai', '9998722646', '90 Redwood Way', 'Rajkot', '360001', 'arya.desai@email.com'),
(8, 'Avani Bhatt', '9689119211', '32 Willow Lane', 'Ahmedabad', '320008', 'avani.bhatt@email.com'),
(9, 'Devi Iyer', '9379515776', '65 Magnolia Street', 'Ankleshwar', '393010', ''),
(10, 'Dia Chatterjee', '9069912341', '98 Sycamore Avenue', 'Anand', '388001', 'dia.chatterjee@email.com'),
(11, 'Esha Banerjee', '9760308906', '11 Spruce Road', 'Ankleshwar', '393010', 'esha.banerjee@email.com'),
(12, 'Gaurav Trivedi', '9250705471', '22 Walnut Drive', 'Gandhinagar', '382002', 'gaurav.trivedi@email.com'),
(13, 'Gayatri Menon', '9141102036', '27 Aspen Court', 'Ahmedabad', '380005', 'gayatri.menon@email.com'),
(14, 'Ishaan Dave', '9031498601', '44 Chestnut Lane', 'Ahmedabad', '380001', 'ishaan.dave@email.com'),
(15, 'Jai Oberoi', '8921895166', '42 Juniper Street', 'Ankleshwar', '393010', 'jai.oberoi@email.com');

```

INSERT 0 15

Query returned successfully in 97 msec.

2. Insert into Services table

```

82 --Insert into Services Table
83 SET SEARCH_PATH TO home_care;
84 INSERT INTO services (Service_Name, Contract_Type, Price)
85 VALUES
86 ('Electrical work', 'Per Service', 250),
87 ('Mobility support', 'Weekly', 8500),
88 ('Veterinary visits', 'Per Visit', 1500),
89 ('Cleaning Services', 'Monthly', 10000),
90 ('Personal Grooming Services', 'Per Visit', 750),
91 ('Gardening', 'Monthly', 2500),
92 ('Cooking services', 'Weekly', 7000),
93 ('Caregiver', 'Hourly', 750),
94 ('Automobile services', 'Per Service', 500),
95 ('Healthcare Service', 'Per Visit', 750);
96

```

Data Output Messages Notifications

INSERT 0 15

Query returned successfully in 97 msec.

3. Insert into Contracts table

```

11 INSERT INTO Contracts (Contract_id, Client_id, Service_Name, Duration, Amount) VALUES
12 (1, 1, 'Cooking services', 4, 7000),
13 (2, 2, 'Cleaning Services', 7, 50000),
14 (3, 3, 'Electrical work', 1, 250),
15 (4, 2, 'Personal Grooming Services', 1, 750),
16 (5, 4, 'Veterinary visits', 1, 1500),
17 (6, 5, 'Cooking services', 1, 14000),
18 (7, 6, 'Electrical work', 1, 250),
19 (8, 7, 'Cooking services', 3, 7000),
20 (9, 8, 'Gardening', 2, 1500),
21 (10, 9, 'Healthcare Service', 1, 750),
22 (11, 10, 'Mobility support', 4, 17000),
23 (12, 5, 'Cleaning Services', 4, 100000),
24 (13, 8, 'Automobile services', 1, 500),
25 (14, 11, 'Caregiver', 12, 3750);
26

```

Data Output Messages Notifications

INSERT 0 14

Query returned successfully in 36 msec.

4. Insert into Workers table

```

82 --Insert into Workers Table
83 SET SEARCH_PATH TO home_care;
84 INSERT INTO workers (Worker_id, Name, Contactno, Address, City, Pincode, Email, Gender, Age, Joining_Date, Experience, Service_Name)
85 VALUES
86 (1, 'Dr. Rajesh Kumar', '9875246589', '1 Main Street', 'Shimla', '171001', NULL, 'Male', 35, '2019-03-12', 15, 'Healthcare Service'),
87 (2, 'Sangeeta Sharma', '8956482569', '45 Park Avenue', 'Delhi', '110001', 'sangeeta.sharma@example.com', 'Female', 42, '2018-05-23', 20, 'Cooking services'),
88 (3, 'Amit Patel', '8954632578', '9 Elm Road', 'Bangalore', '560001', 'amit.patel@example.com', 'Male', 28, '2022-09-01', 5, 'Caregiver'),
89 (4, 'Priya Verma', '9598264879', '24 Oak Lane', 'Chennai', '600001', 'priya.verma@example.com', 'Female', 45, '2018-07-15', 25, 'Personal Grooming Services'),
90 (5, 'Sunil Gupta', '9137957874', '7 Pine Street', 'Lucknow', '226001', 'sunil.gupta@example.com', 'Male', 31, '2020-12-10', 10, 'Automobile services'),
91 (6, 'Neha Choudhary', '9854678361', '80 Cedar Avenue', 'Pune', '411001', 'neha.choudhary@example.com', 'Female', 39, '2018-02-28', 18, 'Personal Grooming Services'),
92 (7, 'Ravi Singh', '9971398849', '31 Maple Road', 'Hyderabad', '500001', 'ravi.singh@example.com', 'Male', 26, '2023-05-17', 3, 'Automobile services'),
93 (8, 'Pooja Khanna', '9888119337', '4 Birch Lane', 'Kolkata', '700001', 'pooja.khanna@example.com', 'Female', 50, '2018-10-02', 30, 'Personal Grooming Services'),
94 (9, 'Anand Sharma', '9804839825', '7 Willow Street', 'Shimla', '171001', 'anand.sharma@example.com', 'Male', 34, '2021-02-14', 12, 'Cooking services'),
95 (10, 'Dr. Meera Reddy', '9721560313', '32 Redwood Avenue', 'Delhi', '110001', 'meera.reddy@example.com', 'Female', 44, '2018-04-25', 26, 'Veterinary visits'),
96 (11, 'Vikram Joshi', '9638280801', '65 Blueberry Road', 'Bangalore', '560001', NULL, 'Male', 29, '2023-01-08', 6, 'Gardening'),
97 (12, 'Deepika Kapoor', '9555001289', '10 Cherry Lane', 'Chennai', '600001', 'deepika.kapoor@example.com', 'Female', 47, '2019-08-20', 28, 'Caregiver'),
98 (13, 'Dr. Arjun Sinha', '9471721777', '3 Magnolia Street', 'Lucknow', '226001', 'arjun.sinha@example.com', 'Male', 32, '2019-04-14', 14, 'Healthcare Services'),
99 (14, 'Dr. Shalini Shah', '9388442265', '6 Sycamore Road', 'Pune', '411001', 'shalini.shah@example.com', 'Female', 40, '2018-08-09', 19, 'Healthcare Services')
100

```

Data Output Messages Notifications

INSERT 0 14

Query returned successfully in 36 msec.

5. Insert into Service Schedules table

```

82 --Insert into Service Schedules Table
83 SET SEARCH_PATH TO home_care;
84 INSERT INTO service_schedules (SS_id, Contract_id, Worker_id, Date, Time, Status)
85 VALUES
86 (1, 1, 2, '10/2/2023', '8:00:00', 'Completed'),
87 (5, 5, 10, '10/3/2023', '10:00:00', 'Completed'),
88 (9, 9, 11, '10/4/2023', '15:00:00', 'Cancelled'),
89 (10, 10, 14, '10/4/2023', '9:45:00', 'Completed')
90
91

```

Data Output Messages Notifications

INSERT 0 4

Query returned successfully in 37 msec.

6. Insert into Payment Monitoring table

```

82 --Insert into Payment Monitoring Table
83 SET SEARCH_PATH TO home_care;
84 INSERT INTO payment_monitoring (Worker_id, Bank_name, Account_number, Salary)
85 VALUES
86 (1, 'Andhra Bank', '87469321580', 29700),
87 (2, 'Central Bank of India', '34587129034', 31600),
88 (3, 'Bank of Baroda', '63982456712', 32500),
89 (4, 'UCO Bank', '54792013685', 29200),
90 (5, 'Punjab National Bank', '18264935702', 28800),
91 (6, 'Bank of India', '98347106524', 30200),
92 (7, 'Corporation Bank', '57691082435', 27300),
93 (8, 'Indian Bank', '45203619847', 32400),
94 (9, 'Indian Bank', '76430128569', 31200),
95 (10, 'Indian Bank', '29584671023', 31600),
96 (11, 'Indian Bank', '69257310486', 29000),
97 (12, 'Indian Overseas Bank', '13576984205', 29700),
98 (13, 'Punjab & Sind Bank', '86745091236', 32100),
99 (14, 'Indian Bank', '20134695872', 34500);
100
101

```

Data Output Messages Notifications

INSERT 0 14

Query returned successfully in 38 msec.

7. Insert into Client Feedback table

```

82 --Insert into Client Feedback Table
83 SET SEARCH_PATH TO homes_care;
84 INSERT INTO client_feedback (Contract_id, Worker_id, Rating, Feedback)
85 VALUES
86 (1, 2, 2.3, 'Terrible service'),
87 (9, 11, 4.2, 'Satisfactory')
88
89

```

Data Output Messages Notifications

INSERT 0 2

Query returned successfully in 40 msec.

4. List the name of clients who reside in Ahmedabad.

SQL Query:

```
SELECT name
FROM Clients
where City = 'Ahmedabad';
```

```
55 -- 4. List the name of clients who reside in ahmedabad.
56 SELECT name
57 FROM Clients
58 where City = 'Ahmedabad';
--
```

Data Output		Messages	Notifications

	name
1	Avani Bhatt
2	Gayatri Menon
3	Ishaan Dave
4	Kiara Mehta
5	Madhav Joshi
6	Mira Malhotra

Total rows: 34 of 34 Query complete 00:00:00.072

5. List Lucknow residents who provide Automobile services.

SQL Query:

```
SELECT name
FROM Workers
WHERE City = 'Lucknow' and Service_Name = 'Automobile services';
```

```
60 -- 5. List lucknow residents who provide Automobile services
61 SELECT name
62 FROM Workers
63 WHERE City = 'Lucknow' and Service_Name = 'Automobile services';
```

Data Output		Messages	Notifications

	name
1	Sunil Gupta
2	Anil Sharma

Total rows: 2 of 2 Query complete 00:00:00.070

6. Count the number of contracts who got cancelled.SQL Query:

```
SELECT COUNT(Contract_id) AS cancelled_contracts  
FROM Service_Schedules  
WHERE status = 'Cancelled';
```

```
65 -- 6. Count the number of contracts who got cancelled.  
66 SELECT COUNT(Contract_id) AS cancelled_contracts  
67 FROM Service_Schedules  
68 WHERE status = 'Cancelled';  
69
```

Data Output Messages Notifications



	cancelled_contracts	bigint
1		23

Total rows: 1 of 1 Query complete 00:00:00.116

7. Select clients with surname 'sharma'SQL Query:

```
SELECT clients  
FROM workers  
WHERE name LIKE '% Sharma';
```

```
70 -- 7. Select clients with surname 'sharma'  
71 SELECT name  
72 FROM clients  
73 WHERE name LIKE '% Sharma';  
74
```

Data Output Messages Notifications



	name	character varying (100)
1	Amrita Sharma	
2	Rahul Sharma	
3	Suman Sharma	
4	Deeksha Sharma	
5	Jai Sharma	

Total rows: 5 of 5 Query complete 00:00:00.070

8. Find workers who have joined the organization before '2022-01-01'

SQL Query:

```
SELECT name
FROM workers
WHERE joining_date < '2022-01-01';
```

```
73 -- 8. Find workers who have joined the organization before '2022-01-01'
74 SELECT name
75 FROM workers
76 WHERE joining_date < '2022-01-01';
```

Data Output Messages Notifications

	name	character varying (100)	lock
1	Dr. Rajesh Kumar		
2	Sangeeta Sharma		
3	Priya Verma		
4	Sunil Gupta		
5	Pooja Khanna		
6	Anand Sharma		

Total rows: 38 of 38 Query complete 00:00:00.283

Ln 67, Col 11

9. Provide a list of workers who hold a doctorate degree.

SQL Query:

```
SELECT name
FROM workers
WHERE name LIKE 'Dr.%';
```

```
80 --9. Provide a list of workers who hold a doctorate degree.
81 SELECT name
82 FROM workers
83 WHERE name LIKE 'Dr.%'
```

Data Output Messages Notifications

	name	character varying (100)	lock
1	Dr. Rajesh Kumar		
2	Dr. Meera Reddy		
3	Dr. Arjun Sinha		
4	Dr. Shalini Shah		
5	Dr. Ananya Joshi		
6	Dr. Aarti Datal		

Total rows: 11 of 11 Query complete 00:00:00.069

10. List the total number of clients from each city in descending order

SQL Query:

```
SELECT city, COUNT(city) AS number_of_clients
FROM clients
GROUP BY city
ORDER BY number_of_clients desc;
```

```
85  -- 10. List the total number of clients from each city in descending order
86  SELECT city, COUNT(city) AS number_of_clients
87  FROM clients
88  GROUP BY city
89  ORDER BY number_of_clients desc;
```

		city character varying (50)	number_of_clients bigint
1	Ahmedabad	34	
2	Kachchh	12	
3	Ankleshwar	9	
4	Bhavnagar	8	
5	Rajkot	8	
6	Anand	7	

Total rows: 11 of 11 Query complete 00:00:00.071

11. Find worker with the highest salary.

SQL Query:

```
SELECT Worker_id,salary
FROM Payment_Monitoring
ORDER BY Salary DESC
LIMIT 1;
```

```
216  SELECT Worker_id,salary
217  FROM Payment_Monitoring
218  ORDER BY Salary DESC
219  LIMIT 1;
220
```

		worker_id [PK] integer	salary integer
1	48	61000	

12. Calculate the total number of contracts for each service.

SQL Query:

```
SELECT service_name, COUNT(service_name) AS number_of_contracts
FROM contracts
GROUP BY service_name;
```

91	--11. Calculate the total number of contracts for each service																					
92	SELECT service_name, COUNT(service_name) AS number_of_contracts																					
93	FROM contracts																					
94	GROUP BY service_name;																					
	Data Output Messages Notifications																					
	<table border="1"> <thead> <tr> <th></th> <th>service_name</th> <th>number_of_contracts</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Personal Grooming Services</td> <td>24</td> </tr> <tr> <td>2</td> <td>Electrical work</td> <td>18</td> </tr> <tr> <td>3</td> <td>Cooking services</td> <td>25</td> </tr> <tr> <td>4</td> <td>Caregiver</td> <td>13</td> </tr> <tr> <td>5</td> <td>Automobile services</td> <td>12</td> </tr> <tr> <td>6</td> <td>Cleaning Services</td> <td>23</td> </tr> </tbody> </table>		service_name	number_of_contracts	1	Personal Grooming Services	24	2	Electrical work	18	3	Cooking services	25	4	Caregiver	13	5	Automobile services	12	6	Cleaning Services	23
	service_name	number_of_contracts																				
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4	Caregiver	13																				
5	Automobile services	12																				
6	Cleaning Services	23																				
	Total rows: 10 of 10 Query complete 00:00:00.066																					

13. List all workers and their respective salaries from the Payment_Monitoring table:

SQL Query:

```
SELECT W.Name AS Worker_Name, PM.Salary
FROM Workers W
INNER JOIN Payment_Monitoring PM ON W.Worker_id = PM.Worker_id;
```

```
243 SELECT W.Name AS Worker_Name, PM.Salary
244 FROM Workers W
245 INNER JOIN Payment_Monitoring PM ON W.Worker_id = PM.Worker_id;
246
247
```

	Data Output Messages Notifications																																							
	<table border="1"> <thead> <tr> <th></th> <th>worker_name</th> <th>salary</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Dr. Rajesh Kumar</td> <td>29700</td> </tr> <tr> <td>2</td> <td>Sangeeta Sharma</td> <td>31600</td> </tr> <tr> <td>3</td> <td>Amit Patel</td> <td>32500</td> </tr> <tr> <td>4</td> <td>Priya Verma</td> <td>29200</td> </tr> <tr> <td>5</td> <td>Sunil Gupta</td> <td>28800</td> </tr> <tr> <td>6</td> <td>Neha Choudhary</td> <td>30200</td> </tr> <tr> <td>7</td> <td>Ravi Singh</td> <td>27300</td> </tr> <tr> <td>8</td> <td>Pooja Khanna</td> <td>32400</td> </tr> <tr> <td>9</td> <td>Anand Sharma</td> <td>31200</td> </tr> <tr> <td>10</td> <td>Dr. Meera Reddy</td> <td>31600</td> </tr> <tr> <td>11</td> <td>Vikram Joshi</td> <td>29000</td> </tr> <tr> <td>12</td> <td>Deepika Kapoor</td> <td>29700</td> </tr> </tbody> </table>		worker_name	salary	1	Dr. Rajesh Kumar	29700	2	Sangeeta Sharma	31600	3	Amit Patel	32500	4	Priya Verma	29200	5	Sunil Gupta	28800	6	Neha Choudhary	30200	7	Ravi Singh	27300	8	Pooja Khanna	32400	9	Anand Sharma	31200	10	Dr. Meera Reddy	31600	11	Vikram Joshi	29000	12	Deepika Kapoor	29700
	worker_name	salary																																						
1	Dr. Rajesh Kumar	29700																																						
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10	Dr. Meera Reddy	31600																																						
11	Vikram Joshi	29000																																						
12	Deepika Kapoor	29700																																						
	Total rows: 50 of 50 Query complete 00:00:00.074																																							

14. Retrieve the workers details who have not been scheduled for any service.

SQL Query:

```
SELECT * FROM workers
LEFT join service_schedules
ON workers.worker_id = service_schedules.worker_id
WHERE workers.worker_id IS NULL;
```

```
96  --12. Retrieve the workers details who have not been scheduled for any service.
97  SELECT * FROM workers
98  LEFT join service_schedules
99  ON workers.worker_id = service_schedules.worker_id
100 WHERE workers.worker_id IS NULL;
```

Data Output Messages Notifications

	service_name character varying (100)	number_of_contracts bigint
1	Personal Grooming Services	24
2	Electrical work	18
3	Cooking services	25
4	Caregiver	13
5	Automobile services	12
6	Cleaning Services	23

Total rows: 10 of 10 Query complete 00:00:00.066

15. Retrieve the worker name and their total contract amount.

SQL Query:

```
SELECT workers.worker_id, workers.name, sum(contracts.amount) as
total_contract_amount
FROM workers
INNER JOIN service_schedules ON workers.worker_id = service_schedules.worker_id
INNER JOIN contracts ON service_schedules.contract_id = contracts.contract_id
GROUP BY workers.worker_id
```

```
102  --13. Retrieve the worker name and their total contract amount.
103  SELECT workers.worker_id, workers.name, sum(contracts.amount) as total_contract_amount
104  FROM workers
105  INNER JOIN service_schedules ON workers.worker_id = service_schedules.worker_id
106  INNER JOIN contracts ON service_schedules.contract_id = contracts.contract_id
107  GROUP BY workers.worker_id
```

Data Output Messages Notifications

	worker_id [PK] integer	name character varying (100)	total_contract_amount bigint
1	42	Dr. Preeti Patel	4500
2	29	Ramesh Choudhary	93500
3	4	Priya Verma	1500
4	34	Dr. Swati Reddy	2250
5	41	Rajesh Mehta	1750
6	40	Simran Singh	2250

Total rows: 49 of 49 Query complete 00:00:00.064

16. Calculate the average rating for each worker.

SQL Query:

```
SELECT workers.worker_id, workers.name, AVG(client_feedback.rating) AS average_rating
FROM workers
JOIN client_feedback
ON workers.worker_id = client_feedback.Worker_id
GROUP BY workers.worker_id
ORDER BY average_rating desc;
```

```
109 --14.Calculate the average rating for each worker.
110 SELECT workers.worker_id, workers.name, AVG(client_feedback.rating) AS average_rating
111 FROM workers
112 JOIN client_feedback
113 ON workers.worker_id = client_feedback.Worker_id
114 GROUP BY workers.worker_id
115 ORDER BY average_rating desc;
```

Data Output Messages Notifications

worker_id	name	average_rating
[PK] integer	character varying (100)	double precision
1	34 Dr. Swati Reddy	4.5
2	1 Dr. Rajesh Kumar	4.35
3	15 Sanjay Tiwari	4.3
4	30 Ritu Sharma	4.3
5	47 Anupam Agarwal	4.3
6	24 Sneha Sharma	4.275

Total rows: 39 of 39 Query complete 00:00:00.064

17. Calculate the total amount earned by the service providers (workers) for a Cleaning service.

SQL Query:

```
SELECT SUM(C.Amount) AS total_earnings
FROM home_care.Contracts C
WHERE C.Service_Name = 'Cleaning Services';
```

```
195 SELECT SUM(C.Amount) AS total_earnings
196 FROM home_care.Contracts C
197 WHERE C.Service_Name = 'Cleaning Services';
198
```

Data Output Messages Notifications

total_earnings
bigint
1 1280000

18. List clients who have provided feedback along with their feedback.

SQL Query:

```
SELECT clients.Client_id, clients.Name, Client_feedback.Feedback
FROM Clients
INNER JOIN contracts ON Clients.client_id = contracts.client_id
INNER JOIN Client_feedback ON contracts.contract_id = Client_feedback.contract_id;
```

```
117 --15. List clients who have provided feedback along with their feedback
118 SELECT clients.Client_id, clients.Name, Client_feedback.Feedback
119 FROM Clients
120 INNER JOIN contracts ON Clients.client_id = contracts.client_id
121 INNER JOIN Client_feedback ON contracts.contract_id = Client_feedback.contract_id;
```

Data Output Messages Notifications

	client_id integer	name character varying (100)	feedback character varying (255)
1	1	Aarav Patel	Terrible service
2	2	Aisha Kumar	I'm content with it
3	3	Akash Gupta	Highly recommended
4	2	Aisha Kumar	Great work
5	6	Arjun Singh	Wasted time and money
6	7	Arya Desai	Not exceptional
7	8	Avani Bhatt	Satisfactory

Total rows: 75 of 75 Query complete 00:00:00.057

19. Retrieve the worker's name and service details for the 140th service schedule.

SQL Query:

```
SELECT Workers.Name, Contracts.service_name, Contracts.amount, Service_schedules.date,
Service_schedules.time
FROM Workers
INNER JOIN Service_schedules ON Workers.Worker_id = Service_schedules.Worker_id
INNER JOIN Contracts ON Service_schedules.contract_id = Contracts.contract_id
WHERE Service_schedules.SS_id = 140;
```

```
123 -- 16. Find the worker's name and service details for a 140th service schedule
124 SELECT Workers.Name, Contracts.service_name, Contracts.amount, Service_schedules.date, Service_schedules.time
125 FROM Workers
126 INNER JOIN Service_schedules ON Workers.Worker_id = Service_schedules.Worker_id
127 INNER JOIN Contracts ON Service_schedules.contract_id = Contracts.contract_id
128 WHERE Service_schedules.SS_id = 140;
```

Data Output Messages Notifications

	name character varying (100)	service_name character varying (100)	amount integer	date date	time time without time zone
1	Anil Sharma	Automobile services	500	2023-11-10	08:00:00

Total rows: 1 of 1 Query complete 00:00:00.053

20. Find the client who have spent the most on contracts.

SQL Query:

```

SELECT Clients.Client_id, Clients.Name, SUM(Amount) AS Total_Amount
FROM Clients
JOIN Contracts
ON Clients.Client_id = Contracts.Client_id
GROUP BY Clients.Client_id
ORDER BY Total_Amount DESC
LIMIT 1;

```

```

-- 17. Find the clients who have spent the most on contracts.
SELECT Clients.Client_id, Clients.Name, SUM(Amount) AS Total_Amount
FROM Clients
JOIN Contracts
ON Clients.Client_id = Contracts.Client_id
GROUP BY Clients.Client_id
ORDER BY Total_Amount DESC
LIMIT 1;

```

	client_id [PK] integer	name character varying (100)	total_amount bigint
1	97	Prisha Krishnan	170250

Total rows: 1 of 1 Query complete 00:00:00.064

21. Find the client with the most number of contracts.

SQL Query:

```

SELECT Client_id, Name
FROM Clients
WHERE Client_id =
    (SELECT Client_id
     FROM (
        SELECT Client_id, COUNT(*) as number_of_contracts
        FROM Contracts
        GROUP BY Client_id
        ORDER BY number_of_contracts DESC
        LIMIT 1
    ) AS Subquery );

```

```

-- 21. Find the client with the most number of contracts.
SELECT Client_id, Name
FROM Clients
WHERE Client_id =
    (SELECT Client_id
     FROM (
        SELECT Client_id, COUNT(*) as number_of_contracts
        FROM Contracts
        GROUP BY Client_id
        ORDER BY number_of_contracts DESC
        LIMIT 1
    ) AS Subquery );

```

	client_id [PK] integer	name character varying (100)	number_of_contracts
1	2	Aisha Kumar	2

Total rows: 1 of 1 Query complete 00:00:00.062

22. Calculate the total feedback count for each worker

SQL Query:

```
SELECT Worker_id, COUNT(*) AS feedback_count
FROM Client_Feedback
GROUP BY Worker_id;
```

```
170  SELECT Worker_id, COUNT(*) AS feedback_count
171  FROM Client_Feedback
172  GROUP BY Worker_id;
173
```

Data Output **Messages** **Notifications**

	worker_id integer	feedback_count bigint
29	28	1
30	20	2
31	33	3
32	1	2
33	5	2
34	18	1
35	2	3
36	16	1
37	27	2
38	23	1
39	11	2

Total rows: 39 of 39 Query complete 00:00:00.091

23. Retrieve the list of workers who have been scheduled more times than the average number of times a worker is scheduled.

SQL Query:

```
SELECT w.*
FROM Workers w
JOIN Service_Schedules ss
ON w.Worker_id = ss.Worker_id
GROUP BY w.Worker_id
HAVING COUNT(ss.SS_id) > (SELECT AVG(schedule_count)
                             FROM (SELECT Worker_id, COUNT(SS_id) AS schedule_count
                                   FROM Service_Schedules
                                   GROUP BY Worker_id) AS avg_schedules);
```

```
66  -- Retrieve the list of workers who have been scheduled more times than the average number of times a worker is scheduled.
67  SELECT w.*
68  FROM Workers w
69  JOIN Service_Schedules ss
70  ON w.Worker_id = ss.Worker_id
71  GROUP BY w.Worker_id
72  HAVING COUNT(ss.SS_id) > (SELECT AVG(schedule_count)
73      FROM (SELECT Worker_id, COUNT(SS_id) AS schedule_count
74          FROM Service_Schedules
75          GROUP BY Worker_id) AS avg_schedules);
```

Data Output **Messages** **Notifications**

worker_id [PK] integer	name character varying (100)	contactno character varying (10)	address character varying (255)	city character varying (50)	pincode character varying (6)	email character varying (50)	gender character varying (10)	age integer	join dat
1	29 Ramesh Choudhary	8139249585	41 Maple Road	Lucknow	226001	ramesh.choudhary@example.co...	Male	28	20:
2	41 Rajesh Mehta	8648745012	12 Pine Street	Shimla	171001	rajesh.mehta@example.com	Male	30	20:
3	43 Mohit Shah	8142245044	90 Willow Street	Bangalore	560001	mohit.shah@example.com	Male	33	20:

Total rows: 23 of 23 Query complete 00:00:00.054 Ln 68, Col 15

24. Find the maximum number of contracts scheduled on a single daySQL Query:

```
SELECT Date, COUNT(*) AS contract_count
FROM Service_Schedules
GROUP BY Date
ORDER BY contract_count DESC
LIMIT 1;
```

```
187  SELECT Date, COUNT(*) AS contract_count
188  FROM Service_Schedules
189  GROUP BY Date
190  ORDER BY contract_count DESC
191  LIMIT 1;
192
193
```

Data Output Messages Notifications

	date date	contract_count bigint
1	2023-11-15	22

25. Retrieve the workers who have obtained ratings above 3:SQL Query:

```
SELECT DISTINCT Workers.Name, Rating
FROM Workers
JOIN Client_Feedback
ON Workers.Worker_id = Client_Feedback.Worker_id
WHERE Client_Feedback.Rating > 3;
```

```
63  -- 25. Retrieve the workers who have obtained ratings above 3:
64  SELECT DISTINCT Workers.Name, Rating
65  FROM Workers
66  JOIN Client_Feedback
67  ON Workers.Worker_id = Client_Feedback.Worker_id
68  WHERE Client_Feedback.Rating > 3;
```

Data Output Messages Notifications

	name character varying (100)	rating double precision
1	Dr. Swati Reddy	4.2
2	Manish Kumar	3.5
3	Prakash Mishra	4.7
4	Anand Sharma	3.6
5	Sneha Sharma	4

Total rows: 59 of 59 Query complete 00:00:00.096

26. Calculate the total revenue generated by each service, sorted from highest to lowest revenue.

SQL Query:

```

SELECT Services.Service_Name, SUM(Contracts.Amount) AS Total_Revenue
FROM Services
LEFT JOIN Contracts
ON Services.Service_Name = Contracts.Service_Name
GROUP BY Services.Service_Name
ORDER BY Total_Revenue DESC;
160 --20. Calculate the total revenue generated by each service, sorted from highest to lowest revenue.
161 SELECT Services.Service_Name, SUM(Contracts.Amount) AS Total_Revenue
162 FROM Services
163 LEFT JOIN Contracts
164 ON Services.Service_Name = Contracts.Service_Name
165 GROUP BY Services.Service_Name
166 ORDER BY Total_Revenue DESC;

```

Data Output Messages Notifications

The screenshot shows a table with two columns: 'service_name' and 'total_revenue'. The data is as follows:

	service_name	total_revenue
1	Cleaning Services	1280000
2	Cooking services	406000
3	Mobility support	314500
4	Caregiver	60750
5	Gardening	37250
6	Veterinary visits	27000

Total rows: 10 of 10 Query complete 00:00:00.154

27. List the workers who have not received any feedback.

SQL Query:

```

SELECT workers.worker_id, workers.name
FROM workers
LEFT JOIN client_feedback
ON workers.worker_id = client_feedback.Worker_id
WHERE client_feedback.worker_id IS NULL;

```

```

168 -- 21. List the workers who have not received any feedback.
169 SELECT workers.worker_id, workers.name
170 FROM workers
171 LEFT JOIN client_feedback
172 ON workers.worker_id = client_feedback.Worker_id
173 WHERE client_feedback.worker_id IS NULL;

```

Data Output Messages Notifications

The screenshot shows a table with two columns: 'worker_id' and 'name'. The data is as follows:

	worker_id	name
1	7	Ravi Singh
2	8	Pooja Khanna
3	13	Dr. Arjun Sinha
4	19	Rohit Malik
5	22	Shreya Gupta
6	29	Ramesh Choudhary

Total rows: 11 of 11 Query complete 00:00:00.079

28. Find the worker who has the highest total contract amount.

SQL Query:

```

SELECT workers.name, workers.worker_id, SUM(contracts.amount) AS
total_contract_amount
FROM workers
JOIN service_schedules ON workers.worker_id = service_schedules.worker_id
JOIN contracts ON service_schedules.contract_id = contracts.contract_id
GROUP BY workers.worker_id, workers.name
ORDER BY total_contract_amount DESC
LIMIT 1;

```

The screenshot shows a database interface with a SQL query editor at the top and a results grid below. The results grid has three columns: name, worker_id, and total_contract_amount. One row is shown, representing Nisha Mehta with worker_id 18 and total contract amount 390000.

	name	worker_id	total_contract_amount
1	Nisha Mehta	18	390000

Total rows: 1 of 1 Query complete 00:00:00.081

29. Find the top 10 clients with the highest total spending from all contracts and get their avg rating.

SQL Query:

```

SELECT clients.name, contracts.client_id, sum(contracts.amount), avg(rating)
FROM contracts
JOIN client_feedback
ON contracts.contract_id = client_feedback.contract_id
JOIN clients ON contracts.client_id = clients.client_id
GROUP BY contracts.client_id, clients.name
ORDER BY sum(contracts.amount) DESC
LIMIT 10;

```

The screenshot shows a database interface with a SQL query editor at the top and a results grid below. The results grid has five columns: name, client_id, sum, and avg. Five rows are shown, representing clients with the highest total spending: Navya Mukherjee, Aisha Kumar, Saanvi Rao, Akash Gupta, and Gaurav Trivedi. The average rating for these clients is also listed.

	name	client_id	sum	avg
1	Navya Mukherjee	93	110000	3.2
2	Aisha Kumar	2	99750	4.2
3	Saanvi Rao	38	70000	4
4	Akash Gupta	3	61000	4.100000000000005
5	Gaurav Trivedi	12	50250	2.55

Total rows: 10 of 10 Query complete 00:00:00.122

30. Calculate the total number of workers for each service.

SQL Query:

```

SELECT Services.Service_Name, COUNT(Workers.Worker_id) AS Total_Workers
FROM Services
LEFT JOIN Workers ON Services.Service_Name = Workers.Service_Name
GROUP BY Services.Service_Name
ORDER BY Services.Service_Name;
194 --24. Calculate the total number of workers for each service, sorted by service name.
195 SELECT Services.Service_Name, COUNT(Workers.Worker_id) AS Total_Workers
196 FROM Services
197 LEFT JOIN Workers ON Services.Service_Name = Workers.Service_Name
198 GROUP BY Services.Service_Name
199 ORDER BY Services.Service_Name;
200

```

The screenshot shows a table with two columns: 'service_name' and 'total_workers'. The data is as follows:

service_name	total_workers
Automobile services	5
Caregiver	5
Cleaning Services	7
Cooking services	7
Electrical work	3

Total rows: 10 of 10 Query complete 00:00:00.088

31. List the workers who are available for scheduling (have no conflicting service schedules) on '11-11-2023' at '14:00:00'.

SQL Query:

```

SELECT Workers.Worker_id, Workers.Name
FROM Workers
WHERE Workers.Worker_id NOT IN (
    SELECT Worker_id
    FROM Service_Schedules
    WHERE Date = '11-11-2023' AND Time = '14:00:00'
);

```

```

201 --25. List the workers who are available for scheduling (have no conflicting service schedules) on '11-11-2023' at '14:00:00'.
202 SELECT Workers.Worker_id, Workers.Name
203 FROM Workers
204 WHERE Workers.Worker_id NOT IN (
205     SELECT Worker_id
206     FROM Service_Schedules
207     WHERE Date = '11-11-2023' AND Time = '14:00:00'
208 );

```

The screenshot shows a table with two columns: 'worker_id' and 'name'. The data is as follows:

worker_id	name
1	Dr. Rajesh Kumar
2	Sangeeta Sharma
3	Amit Patel
4	Priya Verma
5	Sunil Gupta

Total rows: 49 of 49 Query complete 00:00:00.075

32. Find clients who have contracts with a total amount greater than 50000

SQL Query:

```

SELECT Clients.Name AS Client_Name, SUM(Contracts.Amount) AS Total_Amount
FROM Clients
JOIN Contracts ON Clients.Client_id = Contracts.Client_id
GROUP BY Clients.Name
HAVING SUM(Contracts.Amount) > 50000;

```

```

278 -- Find clients who have contracts with a total amount greater than 50000
279 SELECT Clients.Name AS Client_Name, SUM(Contracts.Amount) AS Total_Amount
280 FROM Clients
281 JOIN Contracts ON Clients.Client_id = Contracts.Client_id
282 GROUP BY Clients.Name
283 HAVING SUM(Contracts.Amount) > 50000;

```

Data Output Messages Notifications

	client_name	total_amount
1	Yuvana Saxena	120000
2	Navya Mukherjee	110000
3	Rohit Raj	60500
4	Saanvi Rao	84750
5	Akash Gupta	91250
6	Drishti Krishnan	170250

Total rows: 13 of 13 Query complete 00:00:00.061

33. List the clients who have more than one cancelled contract.

SQL Query:

```

SELECT Clients.Client_id, Clients.Name
FROM Clients
JOIN Contracts ON Clients.Client_id = Contracts.Client_id
JOIN Service_Schedules ON Contracts.Contract_id = Service_Schedules.Contract_id
WHERE Service_Schedules.Status = 'Cancelled'
GROUP BY Clients.Client_id, Clients.Name
HAVING COUNT(Contracts.Contract_id) > 1;

```

```

210 -- 26. List the clients who have more than one cancelled contract.
211 SELECT Clients.Client_id, Clients.Name
212 FROM Clients
213 JOIN Contracts ON Clients.Client_id = Contracts.Client_id
214 JOIN Service_Schedules ON Contracts.Contract_id = Service_Schedules.Contract_id
215 WHERE Service_Schedules.Status = 'Cancelled'
216 GROUP BY Clients.Client_id, Clients.Name
217 HAVING COUNT(Contracts.Contract_id) > 1;
218

```

Data Output Messages Notifications

	client_id	name
1	58	Aaradhy Rao
2	8	Avani Bhatt

Total rows: 2 of 2 Query complete 00:00:00.147

34. Retrieve experience of workers in the company

SQL Query:

```
SELECT Worker_id, Name, Joining_Date, EXTRACT(YEAR FROM
AGE(CURRENT_DATE, Joining_Date)) AS Years_of_Experience
FROM Workers
```

```
268 --Retrieve experience of workers in the company
269 SELECT Worker_id, Name, Joining_Date, EXTRACT(YEAR FROM AGE(CURRENT_DATE, Joining_Date)) AS Years_of_Experience
270 FROM Workers
271
272
```

Data Output Messages Notifications

	worker_id [PK] integer	name character varying (100)	joining_date date	years_of_experience numeric
1	1	Dr. Rajesh Kumar	2019-03-12	4
2	2	Sangeeta Sharma	2018-05-23	5
3	3	Amit Patel	2022-09-01	1

Total rows: 51 of 51 Query complete 00:00:00.082

35. Retrieve the clients who have contracts with the same worker for more than one service

SQL Query:

```
SELECT workers.name,service_schedules.worker_id,
COUNT(service_schedules.worker_id)
FROM service_schedules
JOIN workers
ON service_schedules.worker_id = workers.worker_id
GROUP BY service_schedules.worker_id,workers.name
```

```
291 --Retrieve the clients who have contracts with the same worker for more than one service
292 SELECT workers.name,service_schedules.worker_id, COUNT(service_schedules.worker_id)
293 FROM service_schedules
294 JOIN workers
295 ON service_schedules.worker_id = workers.worker_id
296 GROUP BY service_schedules.worker_id,workers.name
```

Data Output Messages Notifications

	name character varying (100)	worker_id integer	count bigint
44	Simran Singh	40	3
45	Pradeep Jain	39	1
46	Aditya Kapoor	33	4
47	Anil Sharma	37	1
48	Dr. Arjun Sinha	13	2
49	Dr. Ananya Joshi	26	4

Total rows: 49 of 49 Query complete 00:00:00.062

36. Calculate the total number of service schedules for each workerSQL Query:

```
SELECT Worker_id, COUNT(*) AS Total_Service_Schedules
FROM Service_Schedules
GROUP BY Worker_id
ORDER BY Total_Service_Schedules DESC;
```

```
272 --Calculate the total number of service schedules for each worker
273 SELECT Worker_id, COUNT(*) AS Total_Service_Schedules
274 FROM Service_Schedules
275 GROUP BY Worker_id
276 ORDER BY Total_Service_Schedules DESC;
```

Data Output Messages Notifications



	worker_id	total_service_schedules
	integer	bigint
1	21	8
2	24	7
3	36	7
4	41	7
5	2	6
6	11	6

Total rows: 49 of 49 Query complete 00:00:00.069

37. List all the veterinarians who have experience greater than the average experience of workers in the same city.SQL Query:

```
SELECT DISTINCT w.Name AS Veterinarian_Name
FROM Workers w
WHERE w.Experience > (
    SELECT AVG(w2.Experience)
    FROM Workers w2
    WHERE w2.City = w.City
);
```

```
63 -- 36. List all the veterinarians who have experience greater than the average experience of workers in the same city.
64 SELECT w.Name
65 FROM Workers w
66 WHERE w.Experience > (
67     SELECT AVG(w2.Experience)
68     FROM Workers w2
69     WHERE w2.City = w.City
70 );
```

Data Output Messages Notifications



	name
	character varying (100)
1	Dr. Rajesh Kumar
2	Deepika Kapoor
3	Dr. Arjun Sinha
4	Anjali Desai
5	Manish Kumar

Total rows: 28 of 28 Query complete 00:00:00.054

38. Calculate the total number of clients for each service and order them by service name:**SQL Query:**

```

SELECT Services.Service_Name, COUNT(DISTINCT Contracts.Client_id) AS
Total_Clients
FROM Services
LEFT JOIN Contracts ON Services.Service_Name = Contracts.Service_Name
GROUP BY Services.Service_Name
ORDER BY Services.Service_Name;

```

```

219 --27. Calculate the total number of clients for each service and order them by service name:
220 SELECT Services.Service_Name, COUNT(DISTINCT Contracts.Client_id) AS Total_Clients
221 FROM Services
222 LEFT JOIN Contracts ON Services.Service_Name = Contracts.Service_Name
223 GROUP BY Services.Service_Name
224 ORDER BY Services.Service_Name;

```

Data Output Messages Notifications

	service_name [PK] character varying (100)	total_clients bigint
1	Automobile services	12
2	Caregiver	13
3	Cleaning Services	20
4	Cooking services	24
5	Electrical work	17

Total rows: 10 of 10 Query complete 00:00:00.131

39. Identify Clients with Active Contracts**SQL Query:**

```

SELECT C.Client_id, C.Name AS Client_Name, COUNT(CONTRACTS.Contract_id) AS
Active_Contracts
FROM Clients C
LEFT JOIN Contracts ON C.Client_id = Contracts.Client_id
WHERE CURRENT_DATE <= (SELECT MAX(Service_Schedules.Date) FROM
Service_Schedules WHERE Service_Schedules.Contract_id = Contracts.Contract_id)
GROUP BY C.Client_id, C.Name
HAVING COUNT(CONTRACTS.Contract_id) > 0;

```

```

206 ---Identify Clients with Active Contracts:
207 SELECT C.Client_id, C.Name AS Client_Name, COUNT(CONTRACTS.Contract_id) AS Active_Contracts
208 FROM Clients C
209 LEFT JOIN Contracts ON C.Client_id = Contracts.Client_id
210 WHERE CURRENT_DATE <= (SELECT MAX(Service_Schedules.Date) FROM Service_Schedules WHERE Service_Schedules.Contract
211 GROUP BY C.Client_id, C.Name
212 HAVING COUNT(CONTRACTS.Contract_id) > 0;
213

```

Data Output Messages Notifications

	client_id [PK] integer	client_name character varying (100)	active_contracts bigint
1	22	Mira Malhotra	1
2	23	Mohan Nair	1

Total rows: 2 of 2 Query complete 00:00:00.100

Ln 212, Col 41

40. Calculate Average Contract Amount by City

SQL Query:

```
SELECT Cl.City, AVG(C.Amount) AS Average_Contract_Amount
FROM Clients Cl
LEFT JOIN Contracts C ON Cl.Client_id = C.Client_id
LEFT JOIN Service_Schedules SS ON C.Contract_id = SS.Contract_id
WHERE SS.Status = 'Completed'
GROUP BY Cl.City;
```

```
214 ---Calculate Average Contract Amount by City:
215 SELECT Cl.City, AVG(C.Amount) AS Average_Contract_Amount
216 FROM Clients Cl
217 LEFT JOIN Contracts C ON Cl.Client_id = C.Client_id
218 LEFT JOIN Service_Schedules SS ON C.Contract_id = SS.Contract_id
219 WHERE SS.Status = 'Completed'
220 GROUP BY Cl.City;
221
```

		Data Output	Messages	Notifications
city	character varying (50)	average_contract_amount	numeric	
1	Anand	15333.333333333333		
2	Surat	750.0000000000000000000000		
3	Jamnager	2250.0000000000000000000000		
4	Gandhinagar	12714.285714285714		
5	Rajkot	14638.888888888889		
6	Valsad	10450.0000000000000000000000		
7	Kachchh	20187.5000000000000000000000		
8	Bhavnagar	3000.000000000000000000000000		
9	Ahmedabad	10593.7500000000000000000000		
10	Ankleshwar	9653.8461538461538462		

Total rows: 10 of 10 Query complete 00:00:00.089

41. Find Workers with No Scheduled Services

SQL Query:

```
SELECT W.Worker_id, W.Name AS Worker_Name, W.Contactno, W.Email
FROM Workers W
LEFT JOIN Service_Schedules SS ON W.Worker_id = SS.Worker_id
WHERE SS.Worker_id IS NULL;
```

```
200 ---Find Workers with No Scheduled Services:
201 SELECT W.Worker_id, W.Name AS Worker_Name, W.Contactno, W.Email
202 FROM Workers W
203 LEFT JOIN Service_Schedules SS ON W.Worker_id = SS.Worker_id
204 WHERE SS.Worker_id IS NULL;
205
```

		Data Output	Messages	Notifications
worker_id	[PK] integer	worker_name	contactno	email
		character varying (100)	character varying (10)	character varying (50)
1	51	John Doe	9876543210	john.doe@example.com
2	8	Pooja Khanna	9888119337	pooja.khanna@example.com

Total rows: 2 of 2 Query complete 00:00:00.088

42. Retrieve client feedback information, including the client's name, worker's name, rating, and feedback.

SQL Query:

```

SELECT CF.Contract_id, CF.Worker_id, Cl.Name AS Client_Name, W.Name AS
Worker_Name, CF.Rating, CF.Feedback
FROM Client_Feedback CF
LEFT JOIN Clients Cl ON CF.Contract_id = Cl.Client_id
LEFT JOIN Workers W ON CF.Worker_id = W.Worker_id;
187 --- Retrieve client feedback information, including the client's name, worker's name, rating, and feedback.
188 SELECT CF.Contract_id, CF.Worker_id, Cl.Name AS Client_Name, W.Name AS Worker_Name, CF.Rating, CF.Feedback
189 FROM Client_Feedback CF
190 LEFT JOIN Clients Cl ON CF.Contract_id = Cl.Client_id
191 LEFT JOIN Workers W ON CF.Worker_id = W.Worker_id;
192

```

contract_id	worker_id	client_name	worker_name	rating	feedback
Integer	Integer	character varying (100)	character varying (100)	double precision	character varying (255)
1	1	Aarav Patel	Sangeeta Sharma	2.3	Terrible service
2	2	Aisha Kumar	Sanjay Tiwari	4.1	I'm content with it
3	3	Akash Gupta	Prakash Mishra	4.7	Highly recommended
4	4	Amrita Sharma	Sneha Sharma	4.9	Great work
5	7	Arya Desai	Rajesh Mehta	1.9	Wasted time and money
6	8	Avani Bhatt	Mohit Shah	3.4	Not exceptional
7	9	Devi Iyer	Vikram Joshi	4.2	Satisfactory
8	15	Jai Oberoi	Prakash Mishra	2	Unprofessional behavior
9	19	Laxmi Chowdhury	Ritu Sharma	4.3	Above average
10	24	Neha Kapoor	Priyanka Malhotra	3.2	There's room for improvement

Total rows: 76 of 76 Query complete 00:00:00.070 Ln 190, C 1

43. Trigger function for updating the **Amount column in the **Contracts** table based on the service utilized.**

SQL Query:

```

CREATE OR REPLACE FUNCTION update_contract_amount()
RETURNS TRIGGER AS $$
DECLARE
    service_price INT;
BEGIN
    SELECT Price INTO service_price
    FROM home_care.Services
    WHERE Service_Name = NEW.Service_Name;

    UPDATE home_care.Contracts
    SET Amount = service_price * NEW.Duration
    WHERE Contract_id = NEW.Contract_id;

    RETURN NEW;
END;
$$ LANGUAGE plpgsql;

```

```

CREATE TRIGGER update_contract_amount
AFTER INSERT ON home_care.Contracts
FOR EACH ROW
EXECUTE FUNCTION update_contract_amount();

CREATE OR REPLACE FUNCTION update_contract_amount()
RETURNS TRIGGER AS $$

DECLARE
    service_price INT;
BEGIN
    SELECT Price INTO service_price
    FROM home_care.Services
    WHERE Service_Name = NEW.Service_Name;

    UPDATE home_care.Contracts
    SET Amount = service_price * NEW.Duration
    WHERE Contract_id = NEW.Contract_id;

    RETURN NEW;
END;
$$ LANGUAGE plpgsql;

```

```

CREATE TRIGGER update_contract_amount
AFTER INSERT ON home_care.Contracts
FOR EACH ROW
EXECUTE FUNCTION update_contract_amount();

-- Insert a new row into the Contracts table with a default Amount of 0
INSERT INTO home_care.Contracts (Contract_id, Client_id, Service_Name, Duration, Amount)
VALUES (182, 48, 'Cleaning Services', 4, 0);

```

177	177	66	Electrical work	1	250
178	178	68	Cooking services	2	7000
179	179	53	Caregiver	2	3750
180	180	31	Personal Grooming Services	2	1500
181	182	48	Cleaning Services	4	40000

Total rows: 181 of 181 | Query complete 00:00:00.091

44. Stored procedure to insert a new client record.

SQL Query:

```

CREATE OR REPLACE FUNCTION InsertClient(
    p_Client_id INT,
    p_Name VARCHAR(100),
    p_ContactNo VARCHAR(10),
    p_Address VARCHAR(255),
    p_City VARCHAR(50),
    p_Pincode VARCHAR(6),
    p_Email VARCHAR(50)
) RETURNS VOID AS $$

BEGIN
    INSERT INTO Clients (Client_id, Name, Contactno, Address, City, Pincode, Email)
    VALUES (p_Client_id, p_Name, p_ContactNo, p_Address, p_City, p_Pincode, p_Email);
END;
$$ LANGUAGE plpgsql;

```

-- Example of calling the InsertClient stored procedure in PostgreSQL

```

SELECT InsertClient(101, 'John Doe', '1234567890', '123 Main St', 'Sample City', '123456',
'john@example.com');
SELECT *FROM clients

```

```

227 --28. Stored procedure to insert a new client record.
228 CREATE OR REPLACE FUNCTION InsertClient(
229     p_Client_id INT,
230     p_Name VARCHAR(100),
231     p_ContactNo VARCHAR(10),
232     p_Address VARCHAR(255),
233     p_City VARCHAR(50),
234     p_Pincode VARCHAR(6),
235     p_Email VARCHAR(50)
236 ) RETURNS VOID AS $$

237 BEGIN
238     INSERT INTO Clients (Client_id, Name, Contactno, Address, City, Pincode, Email)
239     VALUES (p_Client_id, p_Name, p_ContactNo, p_Address, p_City, p_Pincode, p_Email);
240 END;
241 $$ LANGUAGE plpgsql;
242
243 -- Example of calling the InsertClient stored procedure in PostgreSQL
244 SELECT InsertClient(101, 'John Doe', '1234567890', '123 Main St', 'Sample City', '123456', 'john@example.com');
245 SELECT *FROM clients
246

```

Data Output Messages Notifications

client_id [PK] integer	name character varying (100)	contactno character varying (10)	address character varying (255)	city character varying (50)	pincode character varying (6)	email character varying (50)
1	1 Aarav Patel	9856343256	12 Elm Street	Bhavnagar	364001	aarav.patel@email.com
2	2 Aisha Kumar	9546739821	56 Maple Avenue	Kachchh	370485	aisha.kumar@email.com
3	3 Akash Gupta	9237136386	89 Oak Lane	Ankleshwar	393010	akash.gupta@email.com
4	4 Amrita Sharma	8927532951	1 Pine Road	Valsad	396001	amrita.sharma@email.com
5	5 Anika Reddy	8617929516	34 Birch Drive	Anand	388001	[null]

Total rows: 101 of 101 | Query complete 00:00:00.075

45. Retrieve information about all service schedules, including the client's name, worker's name, and details about the service. Include only completed service schedules.

SQL Query:

```
SELECT SS.SS_id, SS.Date, SS.Time, SS.Status, W.Name AS Client_Name, W.Name AS Worker_Name, S.Service_Name, S.Contract_Type, S.Price
FROM Service_Schedules SS
RIGHT JOIN Contracts C ON SS.Contract_id = C.Contract_id
RIGHT JOIN Workers W ON SS.Worker_id = W.Worker_id
RIGHT JOIN Services S ON C.Service_Name = S.Service_Name
WHERE SS.Status = 'Completed';
```

```
174 ---Retrieve information about all service schedules, including the client's name, worker's name, and details about the si
175 SELECT SS.SS_id, SS.Date, SS.Time, SS.Status, W.Name AS Client_Name, W.Name AS Worker_Name, S.Service_Name, S.Contract_T
176 FROM Service_Schedules SS
177 RIGHT JOIN Contracts C ON SS.Contract_id = C.Contract_id
178 RIGHT JOIN Workers W ON SS.Worker_id = W.Worker_id
179 RIGHT JOIN Services S ON C.Service_Name = S.Service_Name
180 WHERE SS.Status = 'Completed';
181
```

The screenshot shows a database query results window with the following details:

- Data Output:** The results are displayed in a table format.
- Columns:** ss_id, date, time, status, client_name, worker_name, service_name, contract_type.
- Rows:** There are 10 rows of data, each representing a completed service schedule.
- Sample Data:**

ss_id	date	time	status	client_name	worker_name	service_name	contract_type
1	2023-02-10	08:00:00	Completed	Sangeeta Sharma	Sangeeta Sharma	Cooking services	Weekly
2	2023-02-10	09:30:00	Completed	Sanjay Tiwari	Sanjay Tiwari	Cleaning Services	Monthly
3	2023-02-10	13:15:00	Completed	Prakash Mishra	Prakash Mishra	Electrical work	Per Service
4	2023-03-10	10:00:00	Completed	Dr. Meera Reddy	Dr. Meera Reddy	Veterinary visits	Per Visit
5	2023-03-10	11:30:00	Completed	Anjali Desai	Anjali Desai	Cooking services	Weekly
6	2023-03-10	16:45:00	Completed	Rajesh Mehta	Rajesh Mehta	Electrical work	Per Service
7	2023-03-10	17:30:00	Completed	Mohit Shah	Mohit Shah	Cooking services	Weekly
8	2023-04-10	09:45:00	Completed	Dr. Shallini Shah	Dr. Shallini Shah	Healthcare Service	Per Visit
9	2023-05-10	15:45:00	Completed	Sumit Sharma	Sumit Sharma	Automobile services	Per Service
10	2023-05-10	19:45:00	Completed	Drankosh Mishra	Drankosh Mishra	Electrical work	Per Service
- Total rows:** 90 of 90
- Query complete:** 00:00:00.089
- Ln 177, Col 41**

46. Create a trigger to update a worker's salary when experience increases.

SQL Query:

```
CREATE OR REPLACE FUNCTION update_worker_salary_on_experience_increase()
RETURNS TRIGGER AS $$
BEGIN
    IF NEW.Experience > OLD.Experience THEN
        UPDATE Payment_Monitoring
        SET Salary = Salary + (Salary * 0.05) * (NEW.Experience - OLD.Experience)
        WHERE Worker_id = NEW.Worker_id;
    END IF;

    RETURN NEW;
END;
$$ LANGUAGE plpgsql;
```

```
CREATE TRIGGER experience_increase_trigger
AFTER UPDATE ON Workers
FOR EACH ROW
WHEN (NEW.Experience > OLD.Experience)
EXECUTE FUNCTION update_worker_salary_on_experience_increase();
```

```

-- Example:
UPDATE Workers
SET Experience = Experience + 1
WHERE Worker_id = 6;
SELECT Salary FROM payment_monitoring WHERE Worker_id = 6;

63 CREATE OR REPLACE FUNCTION update_worker_salary_on_experience_increase()
64 RETURNS TRIGGER AS $$ 
65 BEGIN
66 IF NEW.Experience > OLD.Experience THEN
67     UPDATE Payment_Monitoring
68         SET Salary = Salary + (Salary * 0.05) * (NEW.Experience - OLD.Experience)
69         WHERE Worker_id = NEW.Worker_id;
70 END IF;
71
72 RETURN NEW;
73 END;
74 $$ LANGUAGE plpgsql;
75
76 CREATE TRIGGER experience_increase_trigger
77 AFTER UPDATE ON Workers
78 FOR EACH ROW
79 WHEN (NEW.Experience > OLD.Experience)
80 EXECUTE FUNCTION update_worker_salary_on_experience_increase();
81
82 -- Example:
83 UPDATE Workers
84 SET Experience = Experience + 1
85 WHERE Worker_id = 6;
86 SELECT Salary FROM payment_monitoring WHERE Worker_id = 6;
87
88

```

Data Output Messages Notifications

The screenshot shows a PostgreSQL query editor interface. At the top, there are tabs for 'Data Output', 'Messages', and 'Notifications'. Below the tabs is a toolbar with various icons for file operations like opening, saving, and printing. A table is displayed with one row of data. The table has two columns: 'salary' and 'integer'. The first row contains the value '32761'. At the bottom of the interface, a status bar displays 'Total rows: 1 of 1' and 'Query complete 00:00:00.053'.

	salary integer
1	32761

Total rows: 1 of 1 Query complete 00:00:00.053

47. Create the stored procedure to insert new worker

SQL Query:

```

CREATE OR REPLACE PROCEDURE InsertWorker(
    p_Worker_id INT,
    p_Name VARCHAR(100),
    p_Contactno VARCHAR(10),
    p_Address VARCHAR(255),
    p_City VARCHAR(50),
    p_Pincode VARCHAR(6),
    p_Email VARCHAR(50),
    p_Gender VARCHAR(10),
    p_Age INT,
    p_Joining_Date DATE,
    p_Experience INT,
    p_Service_Name VARCHAR(100)
)
LANGUAGE plpgsql
AS $$

BEGIN
    INSERT INTO Workers (Worker_id, Name, Contactno, Address, City, Pincode, Email,
    Gender, Age, Joining_Date, Experience, Service_Name)
    VALUES (p_Worker_id, p_Name, p_Contactno, p_Address, p_City, p_Pincode, p_Email,
    p_Gender, p_Age, p_Joining_Date, p_Experience, p_Service_Name);
END;
$$;

```

--Example

```

CALL InsertWorker(51, 'John Doe', '9634567890', '13 Main St', 'Ahmedabad', '380051',
'john doe@example.com', 'Male', 30, '2023-11-08', 5, 'Gardening');
SELECT * FROM workers;

```

```

240 -- Create the stored procedure to insert new worker
241 CREATE OR REPLACE PROCEDURE InsertWorker(
242     p_Worker_id INT,
243     p_Name VARCHAR(100),
244     p_Contactno VARCHAR(10),
245     p_Address VARCHAR(255),
246     p_City VARCHAR(50),
247     p_Pincode VARCHAR(6),
248     p_Email VARCHAR(50),
249     p_Gender VARCHAR(10),
250     p_Age INT,
251     p_Joining_Date DATE,
252     p_Experience INT,
253     p_Service_Name VARCHAR(100)
254 )
255 LANGUAGE plpgsql
256 AS $$
257 BEGIN
258     INSERT INTO Workers (Worker_id, Name, Contactno, Address, City, Pincode, Email,
259     Gender, Age, Joining_Date, Experience, Service_Name)
260     VALUES (p_Worker_id, p_Name, p_Contactno, p_Address, p_City, p_Pincode, p_Email,
261     p_Gender, p_Age, p_Joining_Date, p_Experience, p_Service_Name);
262 END;
263 $$;
264
265 --Example
266 CALL InsertWorker(51, 'John Doe', '9634567890', '13 Main St', 'Ahmedabad', '380051', 'john doe@example.com', 'Male', 30, '2023-11-08', 5, 'Gardening');
267 SELECT * FROM workers;
268

```

Data Output Messages Notifications

	worker_id	name	contactno	address	city	pincode	email	gender	age	joining_date
51	51	John Doe	9634567890	13 Main St	Ahmedabad	380051	john doe@example.com	Male	30	2023-11-08

Total rows: 51 of 51 Query complete 00:00:00.114

Ln 252, Col 2