

Project Report
on
Interior Design Database Management System
(G -05)

Submitted By:

Tanaz Pathan (202318056)
Kavisha Madani (202318007)

Instructor:

Prof. Minal Bhise

Guide: **Kalgi Gandhi**

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1. SRS

Software Requirements Specification

for

Interior Design Database Management System

Version 1.5

Prepared by

Group Name: G-05

**Kavisha Madani
Tanaz Pathan**

**202318007
202318056**

**202318007@daiict.ac.in
202318056@daiict.ac.in**

Instructor: Prof. Minal Bhise

Course: IT607

Teaching Assistant: Kalgi Gandhi

Date: 30-08-2023

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1 Introduction

Interior decorating is the art of decorating a residential home or commercial business according to a client's personal preferences and style. It includes selecting color schemes, flooring materials, furniture, artwork, and accessories. Interior design is the art and science of enhancing the interior of a building to achieve a healthier and more aesthetically pleasing environment for the people using the space. It involves a complex process of planning, researching, coordinating, and managing resources to create a functional and visually appealing space. Interior designers must consider a wide range of factors, including the space's intended use, the client's needs and preferences, the budget, and the applicable building codes and regulations.

Problem Statement

Interior design projects can be complex and challenging, especially for large commercial or institutional spaces. Managing multiple stakeholders, coordinating resources, and tracking progress can be a daunting task. This is where an interior design database management system (IDDBMS) can be invaluable. An Interior Design Database Management System is a software application that helps interior designers and their teams manage projects more efficiently and effectively. It provides a central repository for all project data, including client information, project plans, budgets, specifications, and product information. An Interior Design Database Management System can also help to automate tasks such as communication, scheduling, and budget tracking.

1.1 Document Purpose

The purpose of this document is to describe the Interior Design Database Management System (IDDBMS), a software solution that is designed to optimize various aspects of interior design projects. The IDDBMS is a user-friendly system that helps interior designers, project managers, clients, and suppliers to collaborate effectively and manage projects efficiently.

The IDDBMS provides a centralized platform for all project data, including client information, project plans, budgets, specifications, and product information. This allows all stakeholders to have access to the same information in real time, which can help to improve communication and reduce the risk of errors and omissions.

The IDDBMS also includes a variety of features that can help to streamline and automate the interior design process. For example, the system can help designers to create and manage project schedules, track resource usage. Clients are empowered with transparent insights into their project's progress, allowing them to actively participate in the creative journey as their ideas come to life. The system further enhances client engagement by providing a platform for clients to communicate their style and preferences, ensuring that the design aligns perfectly with their vision. On the other hand, suppliers benefit from streamlined interactions with designers and project managers, ensuring the precise delivery of materials and furnishings. In short, the IDDBMS is a valuable tool for interior design professionals of all types. It can help to make projects more efficient, effective, and collaborative.

Here are some specific examples of how the IDDBMS can help to optimize various aspects of interior design projects:

- Project planning: The IDDBMS can help designers to create and manage project plans by providing a central repository for all project data. The system can also be used to track project progress and identify potential risks and roadblocks.
- Resource allocation: The IDDBMS can help designers to allocate resources efficiently by providing visibility into resource availability and utilization. The system can also be used to track resource usage and identify areas where costs can be reduced.
- Budget tracking: The IDDBMS can help designers to track project budgets and identify areas where savings can be made which can help designers to stay on track and make informed decisions.
- Communication and collaboration: The IDDBMS can facilitate communication and collaboration between designers, clients, suppliers, and other stakeholders by providing a central repository for all project documents and files.

Overall, the IDDBMS is a powerful tool that can help interior designers to optimize their projects in a variety of ways. The system can help to make projects more efficient, effective, and collaborative, which can lead to better outcomes for all stakeholders.

1.2 Intended Audience and Reading Suggestions

The Interior Design Database Management System (IDDBMS) project is designed for a wide range of stakeholders involved in interior design projects, including:

- Interior designers: The IDDBMS can help interior designers to be more efficient and productive, to improve the quality of their deliverables, and to better manage their projects.
- Project managers: The IDDBMS can help project managers to track project progress, identify potential risks and roadblocks, and make informed decisions about resource allocation and budget management.
- Clients: The IDDBMS can help clients to stay informed about their project progress, to provide feedback and input, and to see how their dream design is coming together.
- Suppliers: The IDDBMS can help suppliers to understand project requirements, to deliver products and services within budget, and to communicate better with other stakeholders.
- Staff: Personnel responsible for administrative tasks related to project management, client communication, and resource allocation can use the IDDBMS to streamline their workflows, enhance communication, and efficiently manage project-related administrative activities.

Reading Suggestions:

To expand the knowledge base for the development of the Interior Design Database

Software Requirements Specification for Interior Design Database Management System

Management System, a variety of resources have been identified that provide valuable insights into project management, database design, and the interior design industry which are as follows:

Software Requirements Specification by Karl Wiegers:

https://www.booksfree.org/wp-content/uploads/2022/03/Software_Requirements_3rd_Edition_compressed.pdf

- SRS documents should be clear, concise, complete, unambiguous, verifiable, and written in a language that is understandable to all stakeholders.
- SRS documents should cover functional requirements, non-functional requirements, and user requirements.
- SRS documents should be managed effectively to ensure that they are up-to-date and accurate.

Interior Design for Dummies by Linda Woodrum:

- Interior design is the process of creating functional and aesthetically pleasing spaces that meet the needs of the people who use them.
- Interior designers consider a variety of factors when designing a space, including the client's needs and budget, the space's function, and the overall aesthetic of the space.
- Interior designers use a variety of tools and techniques to create their designs, including computer-aided design (CAD) software, hand sketches, and physical models.

Database Systems: Concepts, Design, and Applications by Ramez Elmasri and Shamkant B Navathe:

- A database management system (DBMS) is a software application that is used to manage and store data.
- DBMSs provide a variety of features to help users manage their data, including data modeling, query languages, and transaction management.
- DBMSs are used in a wide variety of applications, including e-commerce, customer relationship management (CRM), and enterprise resource planning (ERP) systems.

Fundamentals of Database Systems by Ramez Elmasri and Shamkant B. Navathe

https://asolanki.co.in/wp-content/uploads/2019/02/Fundamentals_of_Database_Systems_6th_Edition-1.pdf

- Data modeling is the process of creating a conceptual model of the data that is to be stored in the database.
- Query languages are used to retrieve data from the database.

- Transaction management ensures that data is stored in a consistent state, even in the event of a failure.

Project Management: A Systems Approach to Planning, Scheduling, and Controlling by Harold Kerzner:

<http://www.mim.ac.mw/books/Kerzner%27s%20Project%20Management%20A%20Systems%20Approach...10thed.pdf>

- Project management is a process of applying knowledge, skills, tools, and techniques to the activities of a project to meet the project requirements.
- The project management process is divided into five phases: initiation, planning, execution, monitoring and controlling, and closing.
- Project managers are responsible for planning, organizing, and managing the resources of a project to achieve the project's objectives.
- Project managers must use a variety of tools and techniques to manage the project effectively, including risk management, communication management, and procurement management.
- Project managers must also be able to manage stakeholders effectively to ensure that the project meets the needs of all stakeholders.

1.3 Product Scope

The Interior Design Database Management System project includes a special computer program designed to fit the specific needs of interior design projects. The system's primary focus is on enhancing project management, resource allocation, budget tracking, and communication among various stakeholders, including interior designers, project managers, clients, and suppliers.

The system's key features and functionalities include:

- Project Planning: The IDDBMS provides a variety of tools for creating project timelines, defining milestones, and allocating tasks to team members. These tools can help designers to create realistic and achievable project plans, to track progress against the plan, and to identify and mitigate potential risks. The IDDBMS also provides the ability to create dependencies between tasks, which can help to ensure that tasks are completed in the correct order and that the project is completed on time.
- Resource Allocation: The IDDBMS provides capabilities to assign designers, materials, and equipment efficiently to maximize resource utilization. These capabilities can help designers to identify and avoid resource bottlenecks, to ensure that resources are used in the most effective way possible, and to reduce project costs. The IDDBMS also provides the ability to track resource usage in real time, which can help designers to identify areas where resources are being overused or underused.

- Budget Tracking: The IDDBMS provides modules for estimating project costs, tracking actual expenditures, and generating budget reports. These modules can help project managers to create accurate project budgets, to track spending against the budget, and to identify and address any potential budget overruns which can help project managers to analyze their spending and to make informed decisions about budget allocation.
- Client Engagement: The IDDBMS not only offers clients transparency into project progress and budget utilization but also actively involves them in the creative process. Clients have the opportunity to provide feedback and share their style preferences through the system. This proactive engagement ensures that the design aligns with their vision and preferences, fostering a collaborative and satisfactory experience.
- Supplier Coordination: The IDDBMS provides channels for seamless communication and coordination with suppliers for material deliveries. These channels can help to avoid delays, to ensure that materials are delivered on time and within budget, and to reduce the risk of errors and omissions, which can help project managers to identify and address any potential delivery problems.

The system is made to be really easy to use, with screens that anyone can understand and move around in without any trouble. It also has special pages just for different kinds of users, like designers, managers, clients, and suppliers. This helps everyone see the things they need in one place.

Now, while the system is great at helping with interior design projects and making them smoother, it's important to know that it's not meant for actually creating the designs themselves or doing the actual building work. It's more like a helper for managing the project – keeping things organized, helping people work together, and tracking important details. The creative design part and the actual construction part are not included in what this system does.

1.4 Description

Our Interior Design Database Management System project sets out on a mission to make interior design smoother and better. It's like combining creative design with smart organization. The project's main goal is to create a super modern computer program that helps designers, project managers, clients, and suppliers work together easily for successful interior design projects.

Interior design projects managed by the IDDBMS can span diverse settings such as homes, offices, shops, hotels, restaurants, healthcare facilities, educational institutions, and more. But they can be tricky to manage. That is where our project comes in. It's not just about making things look good, but also about making sure everything happens on time and within budgets. Our system will be like a special hub where everyone can plan resources, and track progress.

The system is made to be easy to use, with screens that anyone can understand and move around in without any trouble. It also has special pages just for different kinds of users, like designers, managers, clients, and suppliers. The system is not meant for actually creating the designs themselves or doing the actual building work. It is more like a helper for managing the project – keeping things organized, helping people work together, and tracking important details.

To make this system, we are not just guessing what people need. We are reading a lot about interior design and project management from books, websites, and more. We are also talking to people, pretending to be in different roles like designers or clients, to understand their needs. And we are even watching how things work in real life. All these ideas will help us build a system that makes interior design projects successful, from start to finish.

The Interior Design Database Management System (IDDBMS) is a software application that is designed to streamline and enhance the interior design process. It serves as a central hub for all project data, including client information, project plans, budgets, specifications, and product information. This allows all stakeholders to have access to the same information in real time, which can help to improve communication, reduce errors, and ensure that projects are completed on time and within budget.

- ❖ **The system should maintain the key functionalities and features mentioned in the product scope section.**
- ❖ **The IDDBMS offers number of benefits to interior designers, project managers and their clients, including:**
 - Task scheduling: The IDDBMS can help interior designers to save time and improve their productivity by automating many of the tasks involved in project management. The IDDBMS can help project managers to create and manage project plans by scheduling tasks and allocating resources. This can help to ensure that projects stay on track and within budget.
 - Resource allocation: The IDDBMS can help interior designers to allocate resources efficiently by tracking the availability and utilization of designers, materials, and equipment. This can help to avoid resource bottlenecks and ensure that resources are used in the most effective way possible.
 - Budget tracking: The IDDBMS can help project managers to track project budgets accurately by tracking actual expenditures and comparing them to the budget plan. This can help to identify any potential budget overruns early on and take corrective action.
 - Feedback mechanism: The IDDBMS can help to improve client satisfaction by providing clients with real-time final results. The IDDBMS provides a feedback mechanism for clients to provide feedback on the design process and the final results. This feedback can help interior designers to improve their services and to ensure that clients are satisfied with the project.

Overall, the IDDBMS is a valuable tool for interior designing companies. It can help to improve efficiency, productivity, communication, collaboration, and client satisfaction.

❖ **Functional requirements for Interior Design Database Management System:**

1. Data Management

- Users should be able to add, edit, and delete data in the database.
- Users should be able to search for data in the database using various criteria.
- Users should be able to export data from the database to various formats, such as CSV and Excel.

2. Collaboration

- Users should be able to share data and collaborate on projects with other users.
- Users should be able to leave comments and feedback on data and projects.
- Users should be able to receive notifications when data is updated or when comments are added.

❖ Non-functional requirements for Interior Design Database Management System:

- Performance: The IDDBMS system must be able to handle a large number of users and concurrent transactions without any significant performance degradation. The system should be able to respond to user requests in a timely manner, even during peak usage times.
- Scalability: The IDDBMS system must be scalable to accommodate future growth in the number of users, projects, and data. The system should be able to handle increased workloads without any significant performance degradation.
- Security: The IDDBMS system must be secure and protect all data from unauthorized access, use, disclosure, modification, or destruction. The system should implement appropriate security measures, such as user authentication, authorization, and encryption

❖ Maintenance requirements for Interior Design Database Management System:

The IDDBMS system will be maintained by a team of developers and system administrators. The team will be responsible for fixing bugs, adding new features, and keeping the system up-to-date.

The maintenance team will use a variety of tools and techniques to maintain the IDDBMS system. These tools and techniques include:

- Monitoring: The team will use monitoring tools to track the performance and health of the system. This will help the team to identify and address potential problems before they cause outages or other problems.
- Logging: The team will use logging tools to collect data about the system's operation. This data can be used to troubleshoot problems and to identify areas where the system can be improved.
- Backup and recovery: The team will implement a backup and recovery plan to protect the system from data loss and to ensure that the system can be recovered quickly in the event of a disaster.

The maintenance team will also work with users to collect feedback and to identify areas where the system can be improved. This feedback will be used to prioritize new features and bug fixes.

1.5 References and Acknowledgements:

- https://en.wikipedia.org/wiki/Interior_design
- https://www.archdaily.com/search/projects?ad_source=jv-header&ad_name=main-menu
- <https://www.infurnia.com/blog/problems-interior-design-industry>
- <https://www.avasiti.in/>
- <https://www.ikea.com/in/en/>
- [https://www.sciencedirect.com/science/article/pii/S1877042814013603?ref=pdf_download&fr](https://www.sciencedirect.com/science/article/pii/S1877042814013603?ref=pdff_download&fr)
- <https://www.designdocs.com/blog/10-unexpected-challenges-interior-designers-face-today>
- <https://foyr.com/learn/interior-design-basic-concepts-and-principles/>
- <https://mlgindia.com/architects-and-interior-designers-database/#:~:text=Need%20For%20Architects%20%26%20Interior%20Designers%20Database&text=These%20databases%20will%20be%20extremely,related%20to%20Architects%20%26%20Interior%20Designers>

2 Fact Finding Phase

2.1 Background Reading

1. Description of each reading-

Interior Design Database Management System (G1-G8)

<https://www.smartsheet.com/content/project-description>

The article "Interior Design Database Management System (G1-G8)" provides a comprehensive overview of the benefits and features of such a system for interior designers. It discusses how a database management system can help interior designers to:

- Improve efficiency: A database management system can automate many of the tasks that interior designers perform on a regular basis, such as generating reports, tracking project progress, and managing inventory. This can free up interior designers to focus on more creative and strategic work.
- Increase accuracy: A database management system can help to reduce the risk of errors by ensuring that all data is stored in a centralized location and that all users are working with the same up-to-date information.
- Improve collaboration: A database management system can make it easier for interior designers to collaborate with other professionals involved in a project, such as project managers and suppliers. By sharing access to the database, everyone involved in the project can stay up-to-date on the latest progress and make changes as needed.
- Make better decisions: A database management system can help interior designers to make better decisions by providing them with access to data and insights that would be difficult or impossible to obtain manually.
- The article also acknowledges that there are some challenges associated with implementing a database management system, such as the cost of the system and the time required to learn how to use it. However, the article argues that the benefits of using a database management system far outweigh the challenges.

Overall, the article "Interior Design Database Management System (G1-G8)" is a valuable resource for interior designers who are considering implementing a database management system in their business. The article provides a comprehensive overview of the benefits and features of such a system, as well as the challenges that may be involved in implementation.

10 Tips for Writing Effective Software Requirements Specifications

https://www.linkedin.com/pulse/top-tips-writing-software-requirements-get-results-inapp?trk=public_post-content_share-article

This article provides 10 tips for writing effective SRS documents, including:

- Make the SRS document specific and measurable. This means that the requirements

should be stated in a clear and unambiguous way, and they should be measurable so that it can be determined whether or not the requirements have been met.

- Make the SRS document achievable and relevant. The requirements should be achievable within the given budget and time constraints, and they should be relevant to the needs of the users and stakeholders.
- Make the SRS document time-bound. The requirements should be specified with a clear deadline, so that the development team knows when they need to be completed.
- Write the SRS document in a clear and concise language. The requirements should be written in a way that is easy to understand for all stakeholders, including technical and non-technical users.
- Organize the SRS document in a logical way. The requirements should be organized in a way that makes sense, and they should be grouped together by related topics.
- Use diagrams and illustrations to clarify complex requirements. Diagrams and illustrations can be used to help explain complex requirements in a more visual way.
- Validate the SRS document with stakeholders. The SRS document should be reviewed and validated by all stakeholders, including users, developers, and testers. This will help to ensure that the requirements are complete, accurate, and achievable.
- Manage change effectively. Change to SRS documents is inevitable, but it is important to manage change in a controlled way. This will help to ensure that the requirements are not compromised by uncontrolled change.
- Keep the SRS document up-to-date. The SRS document should be kept up-to-date as the software changes. This will help to ensure that the requirements are always accurate and reflect the current state of the system.

Project Management Institute (PMI), A Guide to the Project Management Body of Knowledge (PMBOK Guide), 7th Edition, 2021

[file:///C:/Users/kavis/OneDrive/Desktop/DAIICIT/PMBOK%207th%20Edition%20\(iBIMOne.com\).pdf](file:///C:/Users/kavis/OneDrive/Desktop/DAIICIT/PMBOK%207th%20Edition%20(iBIMOne.com).pdf)

The PMBOK Guide (Project Management Body of Knowledge) is a collection of best practices for project management. It is published by the Project Management Institute (PMI) and is used by project managers around the world.

The PMBOK Guide is divided into 10 knowledge areas, each of which covers a specific aspect of project management. The 10 knowledge areas are:

- Project Scope Management
- Project Schedule Management
- Project Cost Management
- Project Quality Management
- Project Resource Management

- Project Communication Management
- Project Risk Management
- Project Procurement Management
- Project Stakeholder Management
- Project Integration Management

Each knowledge area is further divided into processes, tools, and techniques. The processes are the steps that project managers need to follow in order to complete a project successfully. The tools and techniques are the resources that project managers can use to implement the processes.

The PMBOK Guide is a valuable resource for project managers of all experience levels. It provides a comprehensive overview of the project management process and can help project managers to improve their skills and knowledge.

The PMBOK Guide can be used to develop and implement an interior design database management system in a number of ways. For example, project managers can use the PMBOK Guide to:

- Define the scope of the project: The PMBOK Guide provides guidance on how to define the scope of a project, which is the work that needs to be completed in order to achieve the project's objectives.
- Create a project schedule: The PMBOK Guide provides guidance on how to create a project schedule, which is a plan for completing the project's work on time.
- Develop a project budget: The PMBOK Guide provides guidance on how to develop a project budget, which is an estimate of the costs associated with completing the project's work.
- Manage risks: The PMBOK Guide provides guidance on how to identify, assess, and manage risks to the project.
- Communicate with stakeholders: The PMBOK Guide provides guidance on how to communicate with stakeholders, which are the people and organizations that are affected by the project.
- Manage the project: The PMBOK Guide provides guidance on how to manage the project overall, including monitoring and controlling the project's progress and making changes to the project as needed.

By using the PMBOK Guide, project managers can increase the chances of success for their interior design database management system projects.

American Society of Interior Designers (ASID), Professional Standards, 2023
<https://www.asid.org/asid-2023-soid-es-form>

The American Society of Interior Designers (ASID) Professional Standards are a set of guidelines that ASID members are required to follow. The standards cover a wide range of

topics, including:

- Ethics: Interior designers should use their database management system in a way that is ethical and responsible. For example, they should protect the confidentiality of client data and avoid using the system to engage in unfair or deceptive practices.
- Business practices: Interior designers should have a clear and concise contract with their clients that outlines the scope of work, fees, and other important terms related to the development and implementation of the database management system.
- Design standards: Interior designers should ensure that their database management system is designed and implemented in a way that is safe, accessible, and environmentally sustainable. For example, the system should be designed to protect users from data breaches and other security threats. It should also be accessible to users with disabilities. And it should be designed to minimize its environmental impact.

The ASID Professional Standards are a valuable resource for interior designers who want to maintain a high level of professionalism and ensure that their database management system meets the needs of their clients and other stakeholders.

By following the ASID Professional Standards, interior designers can ensure that their database management system is developed and implemented in a way that is ethical, professional, and meets the needs of their clients and other stakeholders.

In addition to the ASID Professional Standards, interior designers should also be familiar with the professional standards of other organizations involved in the development and implementation of database management systems, such as the Project Management Institute (PMI) and the International Organization for Standardization (ISO).

Interior Design Wikipedia Article

https://en.wikipedia.org/wiki/Interior_design

The Wikipedia article on interior design provides a comprehensive overview of the profession, including its history, different types, skills required, and notable practitioners. This information can be helpful for understanding the needs of interior designers and the role that a database management system can play in supporting their work.

1. History of Interior Design

The practice of interior design dates back to ancient times, when humans first began to decorate their homes and other spaces. However, the profession of interior design as we know it today began to emerge in the 19th century, as a result of the Industrial Revolution and the rise of the middle class.

During the Industrial Revolution, there was a growing demand for homes and other buildings that were both functional and aesthetically pleasing. Interior designers helped to meet this demand by creating spaces that were both comfortable and stylish.

In the 20th century, the profession of interior design continued to grow and evolve. Interior designers began to specialize in different areas, such as residential design, commercial design,

and hospitality design. They also began to incorporate new materials and technologies into their designs.

2. Types of Interior Design

There are many different types of interior design, each with its own unique focus. Some of the most common types of interior design include:

- Residential interior design: This type of interior design focuses on the design of homes and apartments. Residential interior designers work with clients to create spaces that are both functional and reflect their personal style.
- Commercial interior design: This type of interior design focuses on the design of commercial spaces, such as offices, retail stores, and restaurants. Commercial interior designers work with clients to create spaces that are both functional and reflect the brand identity of the client.
- Hospitality interior design: This type of interior design focuses on the design of hotels, resorts, and other hospitality spaces. Hospitality interior designers work with clients to create spaces that are both comfortable and inviting for guests.
- Healthcare interior design: This type of interior design focuses on the design of hospitals, clinics, and other healthcare facilities. Healthcare interior designers work with clients to create spaces that are both functional and promote healing.
- Institutional interior design: This type of interior design focuses on the design of schools, libraries, and other institutional spaces. Institutional interior designers work with clients to create spaces that are both functional and conducive to learning and productivity.
- Skills and Knowledge Required for Interior Designers: Interior designers need to have a strong foundation in art, design, and architecture. They also need to be able to understand the needs of their clients and to create spaces that are both functional and aesthetically pleasing.

In addition to these general skills, interior designers also need to have specific knowledge of the different materials and products that are used in interior design. They also need to be familiar with the building codes and regulations that apply to interior design projects.

3. Role of a Database Management System in Supporting Interior Designers

A database management system can play a valuable role in supporting interior designers in a number of ways. For example, a database management system can be used to:

- Track project information: A database management system can be used to track all of the information related to an interior design project, such as the client contact information, the project budget and timeline, the material and product specifications, and the task completion status. This can help interior designers to stay organized and on track with their projects.

- Collaborate with other professionals: A database management system can be used to collaborate with other professionals involved in an interior design project, such as architects, contractors, and suppliers. For example, interior designers can share project information with other professionals or allow them to access the database directly to update information.

Overall, a database management system can be a valuable tool for interior designers, helping them to improve their efficiency, accuracy, and communication.

Simple project report for a software engineering course
<https://www.studocu.com/in/document/visvesvaraya-technological-university/software-engineering/simple-project-for-report/64495592>

This website provides a good overview of the steps involved in developing a database management system (DBMS) for a small business. The report includes the following sections:

- Introduction: This section provides a brief overview of DBMSs and their benefits for small businesses.
- Requirements gathering and analysis: This section describes the process of gathering and analyzing requirements from the stakeholders of the DBMS.
- Database design: This section describes the process of designing the database, including the creation of entity-relationship diagrams (ERDs).
- Database implementation: This section describes the process of implementing the database, including the creation of database tables and the writing of SQL queries.
- Database testing and deployment: This section describes the process of testing and deploying the database.

The report also includes a conclusion section that summarizes the key points of the report and provides some recommendations for further work. This document could be used as a reference for developing an interior design database management system by following the steps outlined in the report. However, it is important to note that the specific requirements of an interior design database management system may differ from the requirements of a DBMS for a small business. For example, an interior design database management system may need to track additional information such as client preferences, material samples, and project photos.

2. References for each background reading-

- <https://www.smartsheet.com/content/project-description>
- https://www.linkedin.com/pulse/top-tips-writing-software-requirements-get-results-inapp-trk-public_post-content_share-article
- [file:///C:/Users/kavis/OneDrive/Desktop/DAIICT/PMBOK%207th%20Edition%20\(iBIMOne.com\).pdf](file:///C:/Users/kavis/OneDrive/Desktop/DAIICT/PMBOK%207th%20Edition%20(iBIMOne.com).pdf)
- <https://www.asid.org/asid-2023-soid-es-form>

- https://en.wikipedia.org/wiki/Interior_design
- <https://www.studocu.com/in/document/visvesvaraya-technological-university/software-engineering/simple-project-for-report/64495592>

3. Summary of each background reading-

1. Interior Design Database Management System (G1-G8)
 - Improves efficiency by automating many of the tasks that interior designers perform on a regular basis.
 - Increases accuracy by reducing the risk of errors by ensuring that all data is stored in a centralized location and that all users are working with the same up-to-date information.
 - Improves collaboration by making it easier for interior designers to collaborate with other professionals involved in a project, such as project managers and suppliers.
 - Helps interior designers to make better decisions by providing them with access to data and insights that would be difficult or impossible to obtain manually.
2. 10 Tips for Writing Effective Software Requirements Specifications
 - Make the SRS document specific and measurable.
 - Make the SRS document achievable and relevant.
 - Make the SRS document time-bound.
 - Write the SRS document in a clear and concise language.
 - Organize the SRS document in a logical way.
 - Use diagrams and illustrations to clarify complex requirements.
 - Validate the SRS document with stakeholders.
 - Manage change effectively.
 - Keep the SRS document up-to-date.
3. Project Management Institute (PMI), A Guide to the Project Management Body of Knowledge (PMBOK Guide), 7th Edition, 2021
 - PMBOK Guide is a collection of best practices for project management.
 - It covers 10 knowledge areas of project management: Project Scope Management, Project Schedule Management, Project Cost Management, Project Quality Management, Project Resource Management, Project Communication Management, Project Risk Management, Project Procurement Management, Project Stakeholder Management, Project Integration Management.
 - Each knowledge area is further divided into processes, tools, and techniques.
 - The PMBOK Guide can be used to develop and implement an interior design database management system in a number of ways, such as defining the scope of the project, creating a project schedule, developing a project budget, managing risks, communicating with stakeholders, and managing the project overall.
4. American Society of Interior Designers (ASID), Professional Standards, 2023
 - The ASID Professional Standards are a set of guidelines that ASID members are required to follow.
 - The standard covers a wide range of topics, including ethics, business practices, and

design standards.

- The ASID Professional Standards are a valuable resource for interior designers who want to maintain a high level of professionalism and ensure that their database management system meets the needs of their clients and other stakeholders.

5. Interior Design Wikipedia Article

- The Wikipedia article on interior design provides a comprehensive overview of the profession, including its history, different types, skills required, and notable practitioners.
- This information can be helpful for understanding the needs of interior designers and the role that a database management system can play in supporting their work.

6. Simple project report for a software engineering course

- This document provides a good overview of the steps involved in developing a database management system (DBMS) for a small business.
- The report includes the following sections:
 - Introduction
 - Requirements gathering and analysis
 - Database design
 - Database implementation
 - Database testing and deployment

This document could be used as a reference for developing an interior design database management system by following the steps outlined in the report. However, it is important to note that the specific requirements of an interior design database management system may differ from the requirements of a DBMS for a small business. For example, an interior design database management system may need to track additional information such as client preferences, material samples, and project photos.

Interior Designer Interview Plan:

System: Interior Designer Database Management System

Project Reference: SF/SJ/2003/12

Participants: Tanaz Pathan (Interviewer)
Kavisha Madani (Interviewer)
Dishita Madani (Int. Des.)

Date: 21/09/2023 **Time:** 11:00

Duration: 45 minutes **Place:** Through Google Meet

Purpose of Interview:

To get familiar with the domain of interior design and gather information on the specific features and functionality that interior designers need and want in an interior design database management system.

Agenda:

- Brief introduction and background of the project.
- Discussion about the types of interior design projects typically managed.
- Exploration of common challenges encountered in interior design projects.
- Gathering insights into the specific features and functionalities needed for an interior design database management system.
- Discussion on how interior design projects are typically managed, from initial consultation to project completion.
- Exploring how collaboration and communication occurs.
- Understanding how data related to clients, projects, materials, and tasks is currently organized and maintained.

Documents to be Brought to the Interview:

- Sample project plans or documentation related to recent interior design projects.
- Any specific data or templates that are commonly used.

Interior Designer Interview Summary:

System: Interior Designer Database Management System

Project Reference: SF/SJ/2003/12

Participants: Tanaz Pathan (Interviewer)
Kavisha Madani (Interviewer)
Nishita Dasani (Int. Des.)

Date: 21/09/2023

Time: 11:00

Duration: 45 minutes

Place: Through Google Meet

Purpose of Interview:

To get familiar with the domain of interior design and gather information on the specific features and functionality that interior designers need and want in an interior design database management system

1. Interior designers typically work on a variety of projects, both residential and commercial. Some common types of projects include:
 - Home renovations and remodels
 - New home construction
 - Office design
 - Retail store design
 - Restaurant design
 - Hospitality design (hotels, resorts, etc.)
2. The different stages of a typical interior design project can vary depending on the size and complexity of the project, but they generally include the following:
 - Consultation: The interior designer meets with the client to discuss their needs and goals for the project.
 - Space planning: The interior designer creates a floor plan and space plan for the project.
 - Material and product selection: The interior designer selects the materials and products that will be used in the project.
 - Design development: The interior designer creates detailed drawings and renderings of the project.
 - Construction: The interior designer oversees the construction of the project.
 - Installation: The interior designer oversees the installation of the furniture, fixtures, and accessories in the project.
3. The types of data that interior designers track at each stage of a project can vary

- depending on the specific project, but some common types of data include:
- Client information: Name, contact information, preferences, budget
 - Project information: Budget, timeline, scope of work, material and product specifications, task list
 - Supplier information: Name, contact information, pricing, lead times
 - Product information: Name, manufacturer, cost, dimensions, specifications
 - Task information: Description, deadline, status, assigned to
4. Some of the challenges that interior designers face in managing their data include:
- Data silos: Interior designers often use a variety of different software applications to manage their data, such as CAD software, project management software, and accounting software. This can lead to data silos, where data is stored in different places and is difficult to access and share.
 - Data accuracy and consistency: It can be difficult to ensure that data is accurate and consistent across all of the different systems that interior designers use.
 - Data security: Interior designers need to ensure that their data is secure from unauthorized access, use, or disclosure.
5. Some of the information that interior designers would like to be able to generate reports on include:
- Project budgets: Interior designers need to be able to track their project budgets to ensure that they are staying on track.
 - Project timelines: Interior designers need to be able to track their project timelines to ensure that they are meeting their deadlines.
 - Material usage: Interior designers need to be able to track their material usage to ensure that they are staying within budget and to avoid waste.
 - Client preferences: Interior designers need to be able to track their clients' preferences to ensure that they are designing spaces that meet their needs and wants.
6. Some of the features that interior designers would like to see in a database management system include:
- Centralized data storage: Interior designers would like to be able to store all of their data in a centralized location, so that it is easy to access and share.
 - Data accuracy and consistency: Interior designers would like to be able to ensure that their data is accurate and consistent across all of the different systems that they use.
 - Data security: Interior designers would like to be able to ensure that their data is secured from unauthorized access, use, or disclosure.
 - Collaboration features: Interior designers would like to be able to easily collaborate with other stakeholders.
7. Here are some specific tasks that interior designers would like to be able to automate with an interior design database management system:
- Task assignment and tracking: Interior designers often have to manage a large number of tasks, such as creating and updating design plans, sourcing materials, and communicating with clients and contractors. An interior design database management system could automate the assignment and tracking of tasks, freeing up interior designers to focus on more creative and strategic work.
 - Material tracking: Interior designers need to be able to track the materials that are being used in each project. An interior design database management system could

automate the tracking of material orders, deliveries, and inventory. This could help interior designers to avoid delays and ensure that the right materials are available when they are needed.

- Schedule tracking: Interior designers need to be able to track the schedule for each project. An interior design database management system could automate the tracking of milestones, deadlines, and dependencies. This could help interior designers to stay on track and identify any potential delays early on.

Project Manager Interview Plan:

System: Interior Designer Database Management System

Project Reference: SF/SJ/2003/12

Participants: Kavisha Madani (Interviewer)
Tanaz Pathan (Int.)
Heet Gandhi (Proj Man.)

Date: 22/09/2023 **Time:** 11:30

Duration: 40 minutes **Place:** Through Google Meet

Purpose of Interview:

To understand the project management processes and requirements to effectively design a system that supports project managers in interior design projects.

Agenda:

- Brief introduction and background of the project.
- Discussion about the key responsibilities and challenges faced by project managers in interior design projects.
- Gathering insights into the specific features and functionalities needed in an interior design database management system to support project management.
- Discussing the importance of reporting and analytics in project monitoring and decision-making.
- Inquiring about the project manager's vision for improving project management processes.

Documents to be Brought to the Interview:

- Sample project plans or documentation related to recent interior design projects.
- Relevant project data or templates that are commonly utilized.

Project Manager Interview Summary:

System: Interior Designer Database Management System

Project Reference: SF/SJ/2003/12

Participants: Kavisha Madani (Int)

Tanaz Pathan (Int)

Heet Gandhi (Pro man.)

Date: 22/09/2023

Time: 11:30

Duration: 40 minutes

Place: Through Google Meet

Purpose of Interview:

To understand the project management processes and requirements to effectively design a system that supports project managers in interior design projects.

1. Biggest challenges that project managers face when managing interior design projects:
 - Scope creep: This is when the scope of the project changes unexpectedly, often due to changes in the client's requirements.
 - Budget overruns: This can happen due to unexpected costs, such as delays or changes in the material costs.
 - Managing multiple stakeholders: Interior design projects often involve a large number of stakeholders, each with their own needs and priorities.
 - Meeting deadlines: Interior design projects often have tight deadlines, which can be difficult to meet due to unforeseen challenges.
2. Features that project managers would like to see in an interior design database management system:
 - Centralized data storage: The system should provide a central place to store all of the project data, such as project information, client information, design plans, and material specifications.
 - Task management: The system should allow project managers to create and manage tasks, assign tasks to team members, and track the progress of tasks.
 - Integration with other project management tools: The system should be able to integrate with other project management tools, such as project scheduling software and task management software.
3. An interior design database management system could help project managers to better manage their projects in a number of ways:
 - Improved efficiency and effectiveness: By centralizing data, automating tasks, and providing reporting and analytics, an interior design database management system can help project managers to work more efficiently and effectively.

Software Requirements Specification for Interior Design Database Management System

- Reduced risk: By helping project managers to track the progress of the project and identify potential problems early on, an interior design database management system can help to reduce the risk of project delays and budget overruns.
 - Improved collaboration: By providing tools for collaboration, an interior design database management system can help to improve collaboration between project managers, team members, and stakeholders.
4. Specific tasks that project managers would like to be able to automate with an interior design database management system:
- Task assignment and tracking
 - Budget tracking
 - Material tracking
 - Schedule tracking

Supplier Interview Plan:

System: Interior Designer Database Management System

Project Reference: SF/SJ/2003/12

Participants: Kavisha Madani (Interviewee)
Tanaz Pathan (Interviewer)

Date: 23/09/2023 **Time:** 11:30

Duration: 30 minutes **Place:** Roleplay

Purpose of Interview:

To gain insights into the role of suppliers in interior design projects and understand their requirements and preferences in an Interior Design Database Management System (IDDBMS).

Agenda:

- Brief introduction and background of the project.
- Discussion of the various types of interior design projects the supplier typically provides materials and resources for.
- Identifying common challenges and obstacles encountered by the supplier when working with interior designers and project managers.
- Gathering insights into the supplier's expectations regarding the features and functionalities of the IDDBMS.
- Discussion of preferences for data organization, communication, and collaboration within the system.
- Understanding how the supplier currently collaborates and communicates with various stakeholders involved in interior design projects.
- Exploration of how the supplier currently organizes and maintains data related to product information, pricing, orders, and deliveries.
- Discussion of any challenges or issues related to data management.

Documents to be Brought to the Interview:

- Samples or specifications of the products or materials that are commonly supplied for interior design projects.
- Records of recent orders fulfilled for interior design projects.
- Any templates, forms, or documents that are commonly used for order processing, invoicing, or other interactions with interior design project stakeholders.

Supplier Interview Summary:

System: Interior Designer Database Management System

Project Reference: SF/SJ/2003/12

Participants: Kavisha Madani (Interviewee)
Tanaz Pathan (Interviewer)

Date: 23/09/2023

Time: 11:30

Duration: 30 minutes

Place: Roleplay

Purpose of Interview:

To gain insights into the role of suppliers in interior design projects and understand their requirements and preferences in an Interior Design Database Management System (IDDBMS).

1. Types of Projects Handled by Suppliers:

- Suppliers typically provide materials and resources for a variety of interior design projects, including residential and commercial projects. These may include home renovations, new construction, office design, retail store design, restaurant design, and hospitality projects like hotels and resorts.

2. Supplier Involvement in Different Project Stages:

- Suppliers participate in various stages of interior design projects, including supplying materials and products, providing pricing and lead time information, and coordinating deliveries to project sites.

3. Data Suppliers Deal With:

- Suppliers manage data related to the materials and products they offer, pricing information, lead times for deliveries, and communication with interior designers and project managers.

4. Challenges Faced by Suppliers:

- Suppliers encounter challenges in managing product information, coordinating with multiple stakeholders, and ensuring timely deliveries while adhering to budgets.

5. Information Suppliers Want to Track:

- Suppliers would like to track orders, delivery schedules, pricing details, and communication records with interior designers and project managers.

6. Desired Features in a Database Management System:

- Suppliers seek features in an IDDBMS such as centralized data storage for product information, accurate and consistent data management, data security measures, and the ability to collaborate with other stakeholders effectively.

7. Tasks Suppliers Would Like to Automate:

- Automation of tasks related to order processing, order tracking, and communication with interior designers and project managers would enhance efficiency in supplier operations.

Combined Requirements for IDDBMS from All Interviews:

- Ability to handle various project types, including residential and commercial projects, such as home renovations, new construction, office design, retail store design, restaurant design, and hospitality projects.
- Efficient tracking of client information, project details, budgets, timelines, and project scope.
- Comprehensive management of supplier information, including contact details, what materials do they supply, and pricing.
- Detailed tracking of materials and product specifications, including costs and lead times.
- Task management, including task descriptions, deadlines, and assignments to team members.
- Effective project budget tracking, including expenditures and cost monitoring.
- Supplier coordination, including order placement and delivery tracking.
- Ensuring data accuracy and consistency across different systems.
- Enhanced data security measures to protect against unauthorized access.
- Ability to integrate with other software applications.
- Ability to be accessed by multiple users from different locations.
- Collaboration features for effective communication among interior designers, project managers, and suppliers.
- Automation of tasks related to order processing, order tracking, and communication with interior designers, project managers, and suppliers.
- Centralized data storage for product information and project-related data.
- Version control for design documents to prevent accidental changes and ensure up-to-date information.
- User-friendly interface with different user roles (designers, project managers, clients, and suppliers).
- Support for managing scope changes, budget fluctuations, and project communication.
- Integration with other project management tools used in the industry.

2.3 Questionnaire:

Interior Design Client Questionnaire

<https://forms.gle/sq75sE89hXgSJ9qK8>

Please circle your answers to the following questions:

1. What type of space are you looking to design/redesign?
 - a. Home
 - b. Office
 - c. Retail Store
 - d. Restaurant / Café / Hotel
 - e. Hospitality Space / Healthcare Facility (e.g., clinic, hospital)
 - f. Educational Facility (e.g., school, library)
 - g. Entertainment Venue (e.g., gaming room, theatre)
 - h. Outdoor Space (e.g., garden, patio)
 - i. Other:

2. What is your budget for this project?
 - a. Less than 2 lacs
 - b. 2 lacs - 5 lacs
 - c. 5 lacs - 10 lacs
 - d. 10 lacs - 20 lacs
 - e. 20 lacs - 50 lacs
 - f. Over 50 lacs

3. What is your preferred design style?
 - a. Modern
 - b. Traditional
 - c. Contemporary
 - d. Rustic
 - e. Minimalist
 - f. Other:

4. What is your desired timeline for completing this project?
 - a. Less than 3 months
 - b. 3- 6 months
 - c. 6 - 12 months
 - d. More than 12 months

5. What is the size of the space you want to design/redesign?
 - a. Small (less than 500 sq. ft.)
 - b. Medium (500-1000 sq. ft.)
 - c. Large (more than 1000 sq. ft.)

6. What are the must have features for your space?
 - a. Storage
 - b. Lighting
 - c. Seating
 - d. Workspaces

- e. Entertainment
- f. Other:

7. Would you like to have branded furnishings and decor items?

- a. Yes
- b. No
- c. Maybe

8. What are your material preferences?

- a. Wood
- b. Stone
- c. Metal
- d. Glass
- e. Other:

9. What is your preferred flooring material?

- a. Hardwood
- b. Laminate
- c. Tile
- d. Carpet
- e. Other:

10. What are your color preferences?

- a. Neutral (e.g., white, beige, grey, brown, etc.)
- b. Bold (e.g., red, orange, yellow, green, blue, purple, etc.)
- c. Pastel (e.g., light pink, light blue, light yellow, light green, etc.)
- d. Earthy (e.g., terra cotta, sage green, mustard yellow, etc.)
- e. Jewel tones (e.g., emerald green, sapphire blue, ruby red, etc.)
- f. Metallic (e.g., gold, silver, copper, bronze, etc.)
- g. Other:

11. Do you have any special requirements, such as wheelchair accessibility or child-friendly features? (Write NA if no such requirements)

Summary:

What type of space are you looking to design/redesign?

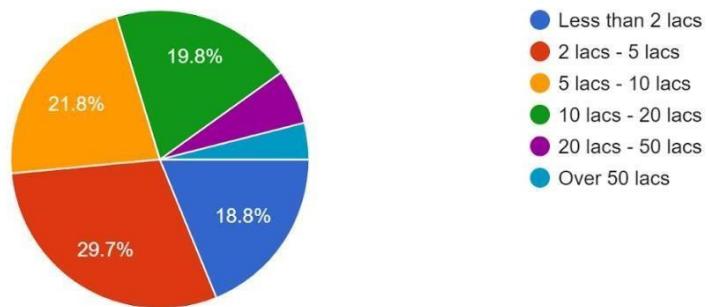
101 responses



▲ 1/2 ▼

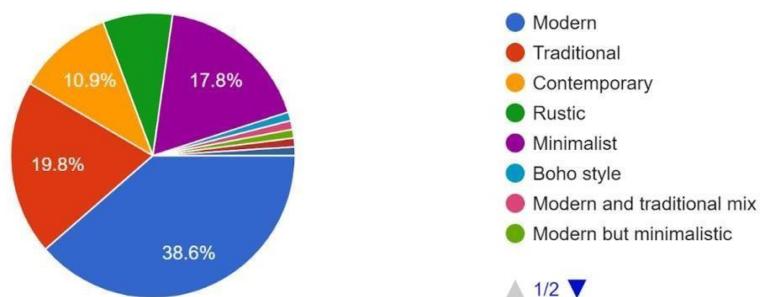
What is your budget for this project?

101 responses



What is your preferred design style?

101 responses

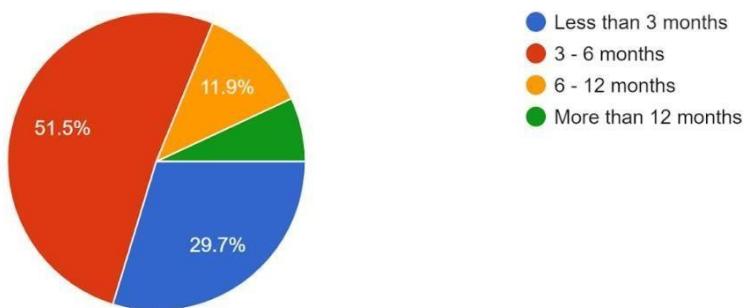


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Software Requirements Specification for Interior Design Database Management System

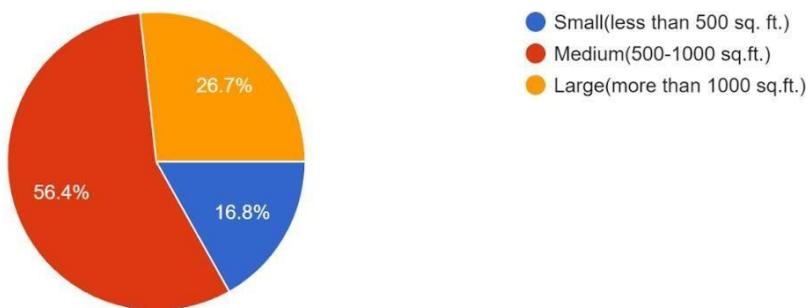
What is your desired timeline for completing this project?

101 responses



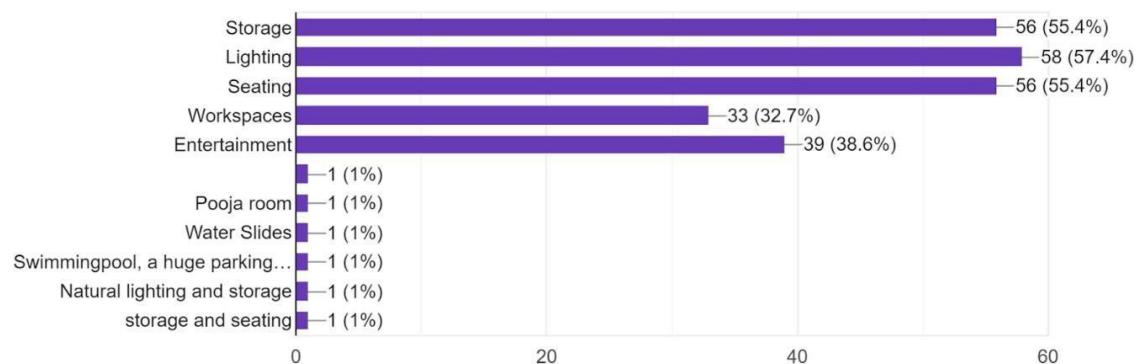
What is the size of the space you want to design/redesign?

101 responses



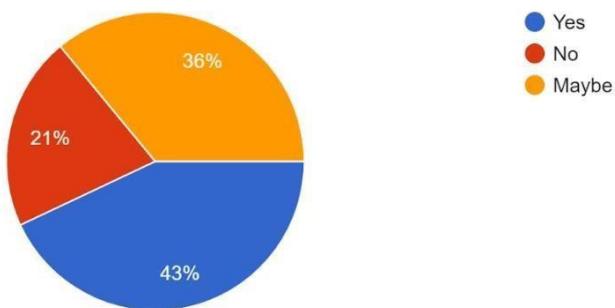
What are the must have features for your space?

101 responses



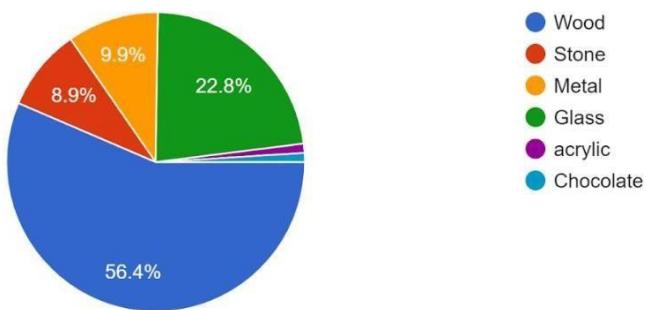
Would you like to have branded furnishings and decor items?

100 responses



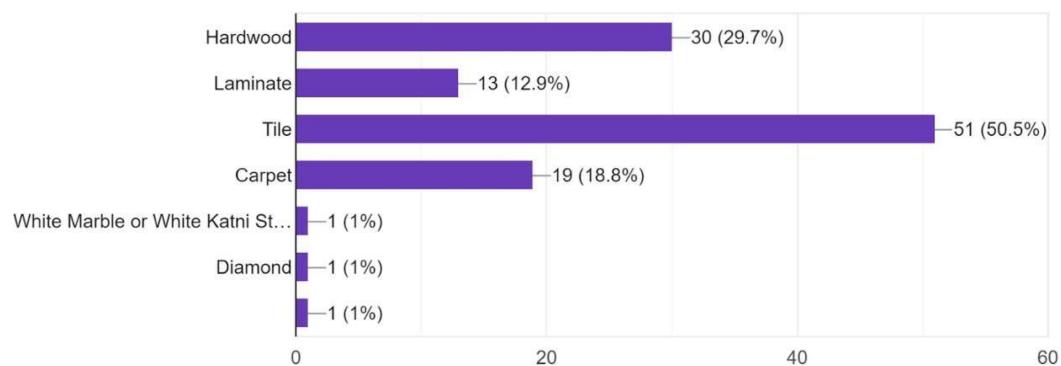
What are your material preferences?

101 responses



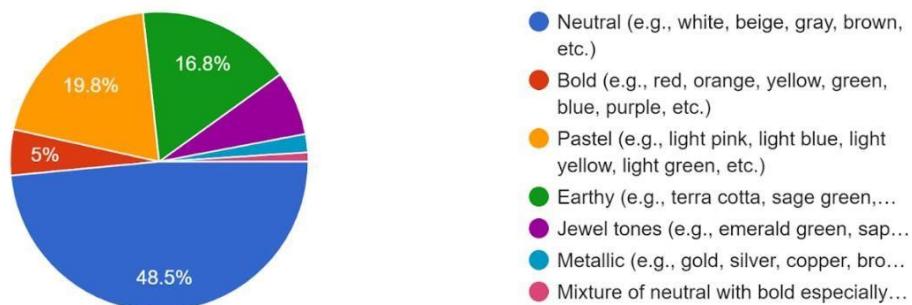
What is your preferred flooring material?

101 responses



What are your color preferences?

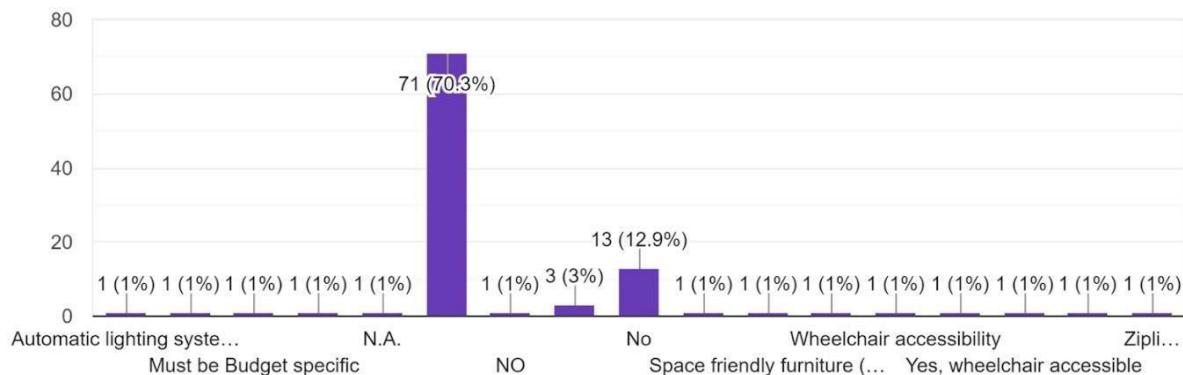
101 responses



Do you have any special requirements, such as wheelchair accessibility or child-friendly features?

(write NA if no such requirements)

101 responses



Combined Requirements for IDDBMS from Questionnaire:

- The client is open to design styles and can choose between traditional, minimalist, or modern.
- The budget for the project can fall into one of the following ranges: less than 2 lacs, 2 lacs - 5 lacs, 5 lacs - 10 lacs, 10 lacs - 20 lacs, or over 50 lacs.
- The client has specified two timeline options: 3 - 6 months and 6 - 12 months.
- The client has size preferences for the space, which can be small (less than 500 sq. ft.), medium (500-1000 sq. ft.), or large (more than 1000 sq. ft.).
- The project must incorporate essential features such as seating, storage, lighting, and workspaces.
- The inclusion of branded furnishings is optional, depending on the client's preference.
- Material preferences for the project include wood and glass.
- The flooring materials that can be used are hardwood, tile, or carpet.

- The client has specified color preferences that include earthy tones, neutral colors, or jewel tones.

2.4 Observations:

- Interior design projects often involve numerous stakeholders, including clients, designers, project managers, suppliers, necessitating a robust database system for effective coordination.
- The dynamic nature of interior design projects can lead to scope changes, budget fluctuations, and communication challenges that require comprehensive tracking and management.
- Project managers require centralized data storage to manage project-related information efficiently.
- The ability to track project progress, budgets, timelines, and materials usage is essential for monitoring and mitigating risks.
- Integration with other project management tools can streamline workflows and improve project management efficiency.
- Automation of repetitive tasks, such as task assignment, budget tracking, and material tracking, can enhance productivity and reduce errors.

Combined Requirements from Observations:

- A centralized database system that accommodates multiple stakeholders and dynamic project requirements.
- Tools for managing scope changes, budget fluctuations, and effective communication.
- Robust data storage capabilities to support project managers in organizing project-related information.
- Comprehensive tracking and management of project progress, budgets, timelines, and materials usage.
- Seamless integration with other project management tools used in the industry.
- Automation of repetitive tasks, such as task assignment, budget tracking, and material tracking.

2.5 Fact Finding Chart:

| Objective | Technique | Subject(s) | Time Commitment |
|--|--------------------|---|------------------------|
| To get familiar with the domain of Interior Design | Background Reading | Articles and Books based on Interior Design | 5 days |
| To get familiar with the domain of interior design and gather information on the specific features and functionality that interior designers need and want in an interior design database management system. | Interview | Interior Designer | 45 minutes |
| To understand the project management processes and requirements to effectively design a system that supports project managers in interior design projects. | Interview | Product Manager | 40 minutes |
| To understand the supply and demand of the raw material in the market | Interview | Supplier | 30 minutes |
| To understand the need of clients | Questionnaire | Client | 1 hour |
| To follow up development of database understanding | Observation | Interior Designing Company | 3 hours |

3 List of Requirements

- Ability to handle various project types, including residential and commercial projects.
- Efficient tracking of client information, project details, budgets, timelines, and project scope.
- Task management, including task descriptions, deadlines, and assignments to team members.
- Effective project budget tracking, including expenditures and cost monitoring.
- Centralized data storage for product information and project-related data.
- Support for managing scope changes, budget fluctuations, and project communication.
- Integration with other project management tools used in the industry.
- Automation of repetitive tasks, such as task assignment, budget tracking, and material tracking.
- Comprehensive management of supplier information, including contact details, pricing, and lead times and which kind of materials they supply.
- Detailed tracking of materials and product specifications, including costs.
- Supplier coordination for order placement.
- Automation of tasks related to order processing, order tracking, and communication with interior designers, project managers, and suppliers.
- Efficient tracking of resource allocation, including designers, materials, and equipment.
- Users should be able to generate reports on various aspects of the IDDBMS system, such as project budgets, timelines, material usage, and client preferences.
- Tools for managing scope changes, budget fluctuations, and effective communication.
- Communication and collaboration features to facilitate interactions among team members and stakeholders.
- Users should be able to leave comments and feedback on data and projects.
- Users should be able to receive notifications when data is updated or when comments are added.
- Automation of tasks related to order processing, order tracking, and communication with interior designers, project managers, and suppliers.
- Users should be able to add, edit, and delete data in the database.
- Users should be able to search for data in the database using various criteria.
- Users should be able to export data from the database to various formats, such as CSV and Excel.
- Ensuring data accuracy and consistency across different systems.
- Security: The IDDBMS system must be secure and protect all data from unauthorized access, use, disclosure, modification, or destruction. The system should implement appropriate security measures, such as user authentication, authorization, and encryption.
- Performance: The IDDBMS system must be able to handle a large number of users and concurrent transactions without any significant performance degradation. The system should be able to respond to user requests in a timely manner, even during peak usage times.
- Scalability: The IDDBMS system must be scalable to accommodate future growth in the number of users, projects, and data. The system should be able to handle increased workloads without any significant performance degradation.
- User-friendly interface with different user roles (designers, project managers, clients, and suppliers).

Software Requirements Specification for Interior Design Database Management System

- Role-based access control to ensure that users only have access to the features and data relevant to their roles.
- User authentication and authorization mechanisms to safeguard sensitive project information.
- Ability to upload, store, and manage various document types, including contracts, invoices, and project specifications.
- Ability to import data from external sources or other software applications used in the interior design industry.
- Support for exporting data in standard formats for compatibility with other tools and systems.

4 User Categories and Privileges

Administrator:

Description: Administrators have full control over the IDDBMS and can manage system settings, user roles, and access privileges.

Privileges:

- Create, modify, and delete user accounts.
- Configure system settings and preferences.
- Access to all data and functionality within the system.
- Manage user roles and their associated privileges.
- Perform system maintenance tasks, such as backups and updates.

Interior Designer:

Description: Interior designers are responsible for creating and managing interior design projects, including client interactions, project planning, and design documentation.

Privileges:

- Create and manage interior design projects.
- Add and edit project details, including budgets and timelines.
- Upload and manage design documents.
- Assign and manage tasks to team members.
- Communicate with clients and team members within the system.

Project Manager:

Description: Project managers oversee multiple interior design projects, ensuring they stay on track, within budget, and meet client expectations.

Privileges:

- View and manage all interior design projects.
- Monitor project progress, budgets, and timelines.
- Assign and reassign tasks to team members.
- Access client feedback and approvals.

Client:

Description: Clients are the end-users or customers who hire interior designers for their projects. They need access to project details, budgets, and the ability to provide feedback.

Privileges:

- Access to their specific interior design projects.
- View project details, budgets, and timelines.
- Provide feedback on designs and milestones.
- Approve project milestones and budgets.
- Communicate with their assigned interior designer and project manager.

Supplier:

Description: Suppliers provide materials and products for interior design projects. They require access to orders, delivery schedules, and communication with designers.

Privileges:

- View and manage orders and deliveries.
- Communicate with interior designers and project managers.
- Access information related to materials and pricing.

5 Assumption

When designing the Interior Design Database Management System (IDDBMS), it's essential to make certain assumptions to guide the design process effectively. Here are some key assumptions that can be considered:

- Client Location and Project Eligibility: The IDDBMS will operate based on the assumption that clients engaging with the system are undertaking interior design projects primarily within specified geographical regions. These regions will be determined by factors such as city boundaries or predefined zones, ensuring that the system aligns with local regulatory and operational considerations.
- Designer-Client Matching: The assignment of interior designers to clients will consider factors such as the location of the designer's workspace in proximity to the client's project site. This geographical matching will be based on the respective addresses' details to optimize communication and collaboration between clients and designers.
- Designer Specialization and Qualifications: Designers will provide details about their areas of specialization and expertise during the registration process. The system will assume that client projects will be matched with designers based on their declared qualifications, skills, and project requirements, ensuring a tailored approach to interior design services.
- Client Feedback Integration: The IDDBMS will assume the incorporation of mechanisms to collect and analyze client feedback for continuous improvement in service quality. It is anticipated that the system will actively utilize feedback from clients to enhance the overall design experience and meet evolving preferences.
- Security and Confidentiality: The system will operate under the assumption that robust security measures and data protection protocols are in place to safeguard sensitive client, designer, and project information. Ensuring confidentiality and preventing unauthorized access will be integral to the system's design and implementation.
- Billing and Payment Integration: The system will assume integration with a secure payment gateway to facilitate online transactions for interior design services. Specific details regarding payment gateway integration, such as methods supported, are considered to be external to the current project scope.
- Project Prioritization Logic: The IDDBMS will operate under the assumption that service requests and project assignments will be prioritized based on factors such as project urgency, client preferences, and designer availability. The system is expected to incorporate prioritization logic to optimize project management and resource allocation.
- Material and Supplier Integration: The IDDBMS will assume integration with a material and supplier management system, allowing project managers to seamlessly access information about available materials, costs, and supplier details. This integration aims to enhance the efficiency of the procurement process.

6 Business Constraints

When designing the Interior Design Database Management System (IDDBMS), it's important to consider potential business constraints that may impact the system's development and operation. Here are some common business constraints that could apply to the IDDBMS:

- Budget Constraints: The availability of financial resources to develop, maintain, and support the IDDBMS may be limited. Staying within budgetary constraints is essential.
- Timeline Constraints: There may be specific project deadlines or timeframes within which the IDDBMS needs to be deployed or updated. Meeting these timelines is crucial.
- Resource Availability: Constraints related to the availability of skilled personnel, both for system development and ongoing maintenance, should be considered.
- Data Security and Privacy Regulations: Compliance with data security and privacy regulations is crucial. The IDDBMS must adhere to relevant legal requirements and industry standards to protect sensitive information and ensure user privacy.

2. ERD

1. Noun Analysis Table

Table.0. All Extracted Noun and Verbs from Problem Description

| Noun | Verb |
|---------------------------------|--------------|
| Interior design database system | decorating |
| preferences | planning |
| space | create |
| art | flooring |
| building | researching |
| range | pleasing |
| accessories | appealing |
| email | decorating |
| furniture | managing |
| designers | includes |
| Interior design database system | coordinating |
| space | enhancing |
| preferences | tracking |

Software Requirements Specification for Interior Design Database Management System

| | |
|---------------------------------|---------------|
| art | managing |
| building | manage |
| process | reporting |
| home | coordinating |
| budget | scheduling |
| client | provides |
| business | collaborate |
| schemes | describe |
| colors | optimize |
| style | manage |
| resources | manage |
| space | provides |
| client | create |
| materials | insights |
| Interior design database system | manage |
| management | furnishing |
| project | participate |
| teams | tracking |
| Interior design database system | providing |
| product | generate |
| management | collaborating |
| task | tracking |
| project | identify |
| invoice | reports |
| Interior design database system | tracking |

Software Requirements Specification for Interior Design Database Management System

| | |
|---------------------------------|---------------|
| project | reports |
| task | providing |
| Support and IT staff | identify |
| management | tracking |
| project | reporting |
| Invoice | providing |
| plans | providing |
| designers | identify |
| data | generate |
| space | collaborating |
| Support and IT staff | tracking |
| Invoice | providing |
| software | identify |
| budget | planning |
| resources | providing |
| Support and IT staff | keep |
| client | create |
| stakeholders | tracking |
| Invoice | plans |
| information | tracking |
| Interior design database system | allocate |
| project | optimize |
| Support and IT staff | collaborating |
| product | provide |
| information | manage |

Software Requirements Specification for Interior Design Database Management System

| | |
|---------------------------------|-------------|
| project | include |
| time | identify |
| aspect | tracking |
| Interior design database system | deliver |
| project | tracking |
| suppliers | enhance |
| plans | budgeting |
| managers | deliver |
| Support and IT staff | communicate |
| document | manage |
| designers | assist |
| Support and IT staff | maintaining |
| user | providing |
| communication | addressing |
| solution | provide |
| project | managed |
| software | create |
| budgets | creating |
| clients | meet |
| Support and IT staff | designing |
| clients | creating |
| management | manage |
| designers | provide |
| Support and IT staff | planning |
| project | modeling |

Software Requirements Specification for Interior Design Database Management System

| | |
|---------------------------------|-------------|
| report | ensure |
| project | creating |
| resources | modeling |
| schedule | planning |
| tool | manage |
| usage | controlling |
| Support and IT staff | ensure |
| ideas | manage |
| performance | planning |
| interaction | controlling |
| suppliers | closing |
| projects | planning |
| manager | divided |
| Invoice | achieve |
| process | execution |
| budget | planning |
| progress | monitoring |
| project | managing |
| Invoice | including |
| materials | planning |
| professionals | gives |
| clients | scheduling |
| system | tracking |
| interior design database system | design |
| project | including |

Software Requirements Specification for Interior Design Database Management System

| | |
|---------------------------------|------------|
| designer | including |
| Support and IT staff | enhancing |
| resources | create |
| project | completing |
| designer | provide |
| report | planning |
| resources | ensure |
| project | defining |
| report | creating |
| designer | include |
| IT staff | identify |
| resources | allocating |
| interior design database system | tracking |
| project | provide |
| usage | identify |
| designer | spending |
| project | tracking |
| area | identify |
| repository | provide |
| Support and IT staff | spending |
| budget | tracking |
| progress | identify |
| designer | provide |
| communication | informed |
| interior design database system | create |

Software Requirements Specification for Interior Design Database Management System

| | |
|---------------------------------|---------------|
| project | improve |
| budget | provide |
| progress | informed |
| performance | ensure |
| supplies | avoid |
| project | provide |
| files | regenerate |
| plans | analyze |
| budgets | generating |
| resources | maximize |
| Invoice | assign |
| documents | include |
| stakeholders | overrun |
| clients | collaborating |
| utilization | estimating |
| decision | provide |
| Invoice | ensure |
| risk | inform |
| project | reduce |
| designers | improve |
| project | provide |
| Support and IT staff | inform |
| Invoice | ensure |
| interior design database system | reduce |
| project | ensure |

Software Requirements Specification for Interior Design Database Management System

| | |
|---------------------------------|-----------|
| project | provide |
| managers | organized |
| designers | avoid |
| Support and IT staff | working |
| managers | provide |
| project | generate |
| designers | prevent |
| progress | deliver |
| interior design database system | identify |
| Invoice | delay |
| progress | provide |
| project | helping |
| clients | organized |
| management | lacking |
| Support and IT staff | meeting |
| management | managing |
| project | creating |
| clients | include |
| feedback | keeping |
| resource | making |
| Invoice | create |
| project | organized |
| stakeholders | tracking |
| risk | managing |
| allocation | creating |

Software Requirements Specification for Interior Design Database Management System

| | |
|---------------------------------|------------|
| suppliers | manage |
| communication | combining |
| interior design database system | helping |
| finance | keeping |
| suppliers | help |
| project | improve |
| communication | ensure |
| finance | watching |
| Support and IT staff | designed |
| project | pretending |
| product | talking |
| resource | making |
| time | including |
| task | completed |
| project | reading |
| manager | guessing |
| budget | helping |
| manager | scheduling |
| client | automating |
| Invoice | improve |
| finance | ensure |
| allocation | maintain |
| management | manage |
| support | including |
| staff | allocating |

Software Requirements Specification for Interior Design Database Management System

| | |
|---------------------------------|---------------|
| security | involved |
| operation | tracking |
| support | tracking |
| staff | improve |
| support | ensure |
| support | sharing |
| interior design database system | providing |
| design | comparing |
| database | action |
| management | communication |
| development | allocating |
| project | having |
| design | provide |
| insights | change |
| database | reduce |
| requirements | ensure |
| documents | change |
| design | provide |
| management | communicating |
| date | working |
| software | change |
| documents | provide |
| requirements | informed |
| stakeholders | updated |
| specification | providing |

Software Requirements Specification for Interior Design Database Management System

| | |
|-----------------|---------------|
| documents | provide |
| Invoice | communicating |
| Invoice | prevent |
| space | completed |
| requirements | conferencing |
| interior design | tracking |
| designers | reduce |
| space | provide |
| Invoice | include |
| variety | ensure |
| design | informed |
| requirements | provide |
| interior design | ensure |
| variety | include |
| woodrum | informed |
| model | change |
| variety | provide |
| tools | ensure |
| technique | include |
| sketches | change |
| process | provide |
| space | keeping |
| budget | providing |
| client | include |
| software | provide |

Software Requirements Specification for Interior Design Database Management System

| | |
|---------------------------------|---------------|
| space | allowing |
| people | identify |
| function | involved |
| Data management | tracking |
| system | improved |
| application | managing |
| variety | reporting |
| Support and IT staff | receive |
| Data management | generate |
| Invoice | Collaborating |
| system | formatting |
| variety | reporting |
| interior design database system | search |
| database | maintaining |
| Data management | identify |
| database | maintaining |
| resource | usage |
| commerce | implement |
| application | monitoring |
| design | identify |
| users | logging |
| transaction | protect |
| enterprise | improved |
| Support and IT staff | modify |
| store | usage |

Software Requirements Specification for Interior Design Database Management System

| | |
|-------------|--------------|
| features | ensure |
| software | collect |
| customer | identify |
| language | prioritizing |
| system | collect |
| Invoice | improved |
| query | maintaining |
| data | implement |
| database | protect |
| system | logging |
| transaction | monitoring |
| query | maintaining |
| management | fixing |
| database | increased |
| data | include |
| model | outage |
| database | recovered |
| process | fixing |
| data | keeping |
| language | adding |
| failure | tracking |
| project | accommodate |
| data | |
| project | |
| management | |

Software Requirements Specification for Interior Design Database Management System

| | |
|---------------|--|
| project | |
| management | |
| project | |
| project | |
| management | |
| managers | |
| project | |
| management | |
| tools | |
| managers | |
| management | |
| managers | |
| project | |
| management | |
| tools | |
| project | |
| techniques | |
| process | |
| project | |
| techniques | |
| process | |
| stakeholders | |
| project | |
| system | |
| communication | |

Software Requirements Specification for Interior Design Database Management System

| | |
|---------------|--|
| variety | |
| resource | |
| stakeholders | |
| skills | |
| risk | |
| approach | |
| objective | |
| initiation | |
| phase | |
| project | |
| design | |
| management | |
| resource | |
| computer | |
| project | |
| design | |
| management | |
| project | |
| system | |
| project | |
| manager | |
| designer | |
| program | |
| budget | |
| communication | |

Software Requirements Specification for Interior Design Database Management System

| | |
|---------------------------------|--|
| database | |
| stakeholders | |
| clients | |
| system | |
| allocation | |
| project | |
| task | |
| tools | |
| interior design database system | |
| project | |
| task | |
| tools | |
| Support and IT staff | |
| project | |
| task | |
| team | |
| project | |
| time | |
| plan | |
| system | |
| plan | |
| designers | |
| members | |
| progress | |
| features | |

Software Requirements Specification for Interior Design Database Management System

| | |
|---------------------------------|--|
| variety | |
| order | |
| timeline | |
| risk | |
| track | |
| dependencies | |
| budget | |
| interior design database system | |
| designers | |
| resources | |
| budget | |
| designers | |
| Support and IT staff | |
| resources | |
| budget | |
| designers | |
| resources | |
| budget | |
| communication | |
| interior design database system | |
| designers | |
| budget | |
| communication | |
| designers | |
| communication | |

Software Requirements Specification for Interior Design Database Management System

| | |
|---------------------------------|--|
| budget | |
| interior design database system | |
| project | |
| reports | |
| time | |
| channel | |
| project | |
| interior design database system | |
| reports | |
| time | |
| project | |
| channel | |
| resources | |
| cost | |
| module | |
| module | |
| resources | |
| track | |
| cost | |
| track | |
| expenditure | |
| address | |
| team | |
| area | |
| page | |

Software Requirements Specification for Interior Design Database Management System

| | |
|---------------------------------|--|
| usage | |
| users | |
| suppliers | |
| files | |
| members | |
| variety | |
| budget | |
| share | |
| workflow | |
| materials | |
| document | |
| risk | |
| streamline | |
| store | |
| hub | |
| equipment | |
| clients | |
| decisions | |
| allocation | |
| Support and IT staff | |
| clients | |
| time | |
| design | |
| project | |
| interior design database system | |

Software Requirements Specification for Interior Design Database Management System

| | |
|---------------------------------|--|
| clients | |
| time | |
| design | |
| project | |
| clients | |
| design | |
| interior design database system | |
| time | |
| clients | |
| Support and IT staff | |
| client | |
| project | |
| clients | |
| supplier | |
| Support and IT staff | |
| channel | |
| budget | |
| interior design database system | |
| channel | |
| designers | |
| budget | |
| version | |
| risk | |
| coordination | |
| storage | |

Software Requirements Specification for Interior Design Database Management System

| | |
|---------------|--|
| track | |
| risk | |
| storage | |
| track | |
| coordination | |
| status | |
| concept | |
| report | |
| feedback | |
| address | |
| floor | |
| design | |
| visual | |
| problem | |
| revolution | |
| idea | |
| supplier | |
| project | |
| plan | |
| error | |
| document | |
| date | |
| progress | |
| communication | |
| delivery | |

Software Requirements Specification for Interior Design Database Management System

| | |
|----------------|--|
| board | |
| chaor | |
| change | |
| materials | |
| documents | |
| material | |
| result | |
| stakeholders | |
| documentation | |
| decision | |
| engagement | |
| delivery | |
| representation | |
| system | |
| part | |
| design | |
| things | |
| system | |
| work | |
| screen | |
| users | |
| details | |
| suppliers | |
| project | |
| place | |

Software Requirements Specification for Interior Design Database Management System

| | |
|-----------------|--|
| design | |
| managers | |
| designers | |
| construction | |
| project | |
| part | |
| system | |
| clients | |
| building | |
| helper | |
| page | |
| things | |
| design | |
| trouble | |
| work | |
| people | |
| interior design | |
| project | |
| system | |
| supplier | |
| things | |
| interior design | |
| project | |
| system | |
| supplier | |

Software Requirements Specification for Interior Design Database Management System

| | |
|-----------------|--|
| things | |
| project | |
| interior design | |
| system | |
| projector | |
| interior design | |
| project | |
| system | |
| projector | |
| designers | |
| managers | |
| interior design | |
| designer | |
| managers | |
| clients | |
| project | |
| design | |
| clients | |
| screen | |
| time | |
| goal | |
| users | |
| plan | |
| idea | |
| organization | |

Software Requirements Specification for Interior Design Database Management System

| | |
|-----------------|--|
| details | |
| program | |
| progress | |
| budget | |
| resource | |
| share | |
| database | |
| hub | |
| home | |
| building | |
| helper | |
| page | |
| trouble | |
| management | |
| people | |
| track | |
| interior design | |
| information | |
| project | |
| system | |
| management | |
| interior design | |
| information | |
| system | |
| project | |

Software Requirements Specification for Interior Design Database Management System

| | |
|---------------------------------|--|
| management | |
| interior design | |
| project | |
| information | |
| people | |
| system | |
| access | |
| interior design | |
| people | |
| product | |
| application | |
| idea | |
| central | |
| thing | |
| plan | |
| error | |
| designer | |
| data | |
| process | |
| budget | |
| communication | |
| software | |
| budget | |
| reduce | |
| interior design database system | |

Software Requirements Specification for Interior Design Database Management System

| | |
|---------------------------------|--|
| client | |
| database | |
| streamline | |
| hub | |
| stakeholders | |
| clients | |
| date | |
| work | |
| website | |
| designers | |
| interior design database system | |
| task | |
| productivity | |
| designers | |
| interior design database system | |
| task | |
| designers | |
| productivity | |
| interior design database system | |
| project | |
| product | |
| task | |
| plan | |
| project | |
| budget | |

Software Requirements Specification for Interior Design Database Management System

| | |
|---------------------------------|--|
| features | |
| project | |
| section | |
| resources | |
| scope | |
| clients | |
| system | |
| management | |
| track | |
| designers | |
| interior design database system | |
| budget | |
| communication | |
| project | |
| designers | |
| collaboration | |
| designers | |
| Support and IT staff | |
| information | |
| resource | |
| budget | |
| project | |
| designers | |
| resource | |
| communication | |

Software Requirements Specification for Interior Design Database Management System

| | |
|---------------------------------|--|
| design | |
| collaboration | |
| budget | |
| designers | |
| project | |
| information | |
| interior design database system | |
| design | |
| central | |
| designers | |
| resource | |
| concept | |
| feedback | |
| communication | |
| designers | |
| collaboration | |
| central | |
| expenditure | |
| floor | |
| project | |
| task | |
| Support and IT staff | |
| length | |
| supplier | |
| managers | |

Software Requirements Specification for Interior Design Database Management System

| | |
|---------------------------------|--|
| documents | |
| data | |
| plan | |
| progress | |
| features | |
| variety | |
| budget | |
| board | |
| share | |
| materials | |
| documents | |
| stakeholders | |
| equipments | |
| clients | |
| utilization | |
| decision | |
| allocation | |
| support | |
| location | |
| track | |
| interior design database system | |
| time | |
| error | |
| documents | |
| risk | |

Software Requirements Specification for Interior Design Database Management System

| | |
|---------------------------------|--|
| Error | |
| Support and IT staff | |
| documents | |
| risk | |
| time | |
| documents | |
| error | |
| interior design database system | |
| risk | |
| time | |
| stakeholders | |
| designers | |
| version | |
| Support and IT staff | |
| stakeholders | |
| interior design database system | |
| designers | |
| version | |
| stakeholders | |
| features | |
| communication | |
| control | |
| project | |
| communication | |
| features | |

Software Requirements Specification for Interior Design Database Management System

| | |
|---------------------------------|--|
| control | |
| project | |
| system | |
| information | |
| video | |
| project | |
| system | |
| task | |
| event | |
| problem | |
| list | |
| document | |
| data | |
| progress | |
| variety | |
| resource | |
| version | |
| track | |
| Support and IT staff | |
| clients | |
| project | |
| feedback | |
| design | |
| interior design database system | |
| project | |

Software Requirements Specification for Interior Design Database Management System

| | |
|---------------------------------|--|
| clients | |
| feedback | |
| design | |
| interior design database system | |
| design | |
| feedback | |
| project | |
| satisfaction | |
| design | |
| designers | |
| Support and IT staff | |
| clients | |
| feedback | |
| satisfaction | |
| project | |
| design | |
| clients | |
| interior design database system | |
| feedback | |
| clients | |
| project | |
| clients | |
| satisfaction | |
| designers | |
| process | |

Software Requirements Specification for Interior Design Database Management System

| | |
|----------------------|--|
| documents | |
| budget | |
| clients | |
| designers | |
| process | |
| satisfaction | |
| documents | |
| clients | |
| budget | |
| process | |
| documents | |
| clients | |
| progress | |
| approval | |
| Support and IT staff | |
| mechanism | |
| clients | |
| progress | |
| portal | |
| result | |
| clients | |
| approval | |
| portal | |
| result | |
| utilization | |

Software Requirements Specification for Interior Design Database Management System

| | |
|---------------|--|
| decision | |
| status | |
| project | |
| tool | |
| action | |
| error | |
| data | |
| utilization | |
| features | |
| communication | |
| variety | |
| service | |
| stakeholders | |
| resources | |
| collaboration | |
| track | |
| users | |
| data | |
| database | |
| comment | |
| project | |
| system | |
| users | |
| comment | |
| data | |

Software Requirements Specification for Interior Design Database Management System

| | |
|----------------------|--|
| project | |
| users | |
| data | |
| system | |
| management | |
| users | |
| database | |
| management | |
| report | |
| data | |
| users | |
| feedback | |
| data | |
| design | |
| users | |
| format | |
| notification | |
| users | |
| report | |
| requirements | |
| delete | |
| Support and IT staff | |
| share | |
| collaboration | |
| system | |

Software Requirements Specification for Interior Design Database Management System

| | |
|---------------------------------|--|
| data | |
| interior design database system | |
| users | |
| system | |
| tools | |
| data | |
| Support and IT staff | |
| tools | |
| system | |
| tools | |
| data | |
| interior design database system | |
| tools | |
| system | |
| interior design database system | |
| data | |
| performance | |
| problem | |
| users | |
| maintenance | |
| feedback | |
| performance | |
| users | |
| problem | |
| maintenance | |

Software Requirements Specification for Interior Design Database Management System

| | |
|--------------|--|
| feedback | |
| performance | |
| users | |
| problem | |
| maintenance | |
| performance | |
| area | |
| problem | |
| area | |
| degradation | |
| security | |
| design | |
| techniques | |
| degradation | |
| design | |
| techniques | |
| users | |
| security | |
| features | |
| requirements | |
| users | |
| database | |
| features | |
| requirements | |
| database | |

Software Requirements Specification for Interior Design Database Management System

| | |
|---------------|--|
| project | |
| management | |
| time | |
| access | |
| project | |
| management | |
| address | |
| authorization | |
| growth | |
| event | |
| developers | |
| plan | |
| secure | |
| preference | |
| operation | |
| help | |
| system | |
| project | |
| administrator | |
| date | |
| variety | |
| budget | |
| client | |
| material | |
| timeline | |

| | |
|----------------|--|
| work | |
| destruction | |
| track | |
| authentication | |
| transaction | |

Table.1. Candidate Entity Set:

| Noun | Reason |
|-----------|--|
| Designers | Designers are a crucial group involved in Interior Designing. We need to keep track of information about each designer like their skills, experience, and projects they are working on. This helps us to manage and coordinate their roles effectively and the system must be able to support their needs. |
| Budget | It is essential for managing the financial aspects of Interior Design Projects. The budget is a key factor in decision making and tracking project costs. By treating 'Budget' as an entity, we can efficiently record and monitor project budgets, expenses and financial data. This allows us to control spending, ensure projects stay within the budget, making it a valuable inclusion in our system. |
| Client | Clients are the individuals for whom the design projects are executed, and they provide essential input, requirements and feedback. By considering a client as an entity, we can effectively manage client information, preferences, project associations and communication. This enables us to provide a personalized and transparent experience, ensuring client satisfaction and effective project execution. |
| Materials | Materials are fundamental components in Interior Design Projects. They encompass various items, such as furniture, fabrics, fixtures, and more which are used to create the design elements. This enables designers and project managers to make informed decisions about material selection, procurement and budgeting, ensuring that the right materials are used in projects (Effective Material Management within the system). |
| Project | It serves as the central focus of the interior design system. A |

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| | |
|------------------|---|
| | <p>project represents a distinct undertaking, such as a home renovation, office design, or other design endeavors. By treating "Project" as an entity, we can capture and manage critical project-related information, track progress, allocate resources, and establish relationships with clients and other entities, such as designers and materials. This entity set is essential for effective project management and ensuring that all project-specific data is organized and accessible within the system.</p> |
| Task | <p>It represents a fundamental unit of work within the interior design system. Tasks are essential for project management, involving activities like design, purchasing, construction, and communication. Assigning tasks to users, such as designers and project managers, forms a critical part of the workflow. By including "Task" as an entity set, the system can efficiently manage and organize these essential work units, ensuring that projects progress smoothly and are completed on time.</p> |
| Supplier | <p>They provide the materials and products necessary for projects, making them integral to the system. By including "Supplier" as an entity set, the system can effectively organize and access information about different suppliers. This facilitates tasks like material ordering, delivery tracking, and cost management. Managing suppliers as an entity set ensures a smooth flow of materials, reduces delays, and enhances the overall efficiency of the interior design system.</p> |
| Project Managers | <p>Project Managers are central figures in the interior design process. They are responsible for overseeing and coordinating various aspects of interior design projects. By organizing project managers as an entity set, the system can track their roles, responsibilities, and assignments, ensuring that projects are executed efficiently and on schedule.</p> |
| Feedback | <p>It plays a crucial role in improving the interior design process. Feedback represents valuable input and comments provided by clients, project managers, and other stakeholders about the projects and interactions within the system. By treating "Feedback" as an entity set, the system can efficiently capture and manage this information, including details like the feedback source, content, date, and actions taken in response to the feedback. This entity set allows for organized tracking of feedback, enabling the system to make necessary improvements and ensure the satisfaction of clients and stakeholders.</p> |

| | |
|---------|--|
| Invoice | It represents a distinct and essential concept within the system. Invoices are critical for tracking financial transactions and payments related to interior design projects. Creating an "Invoice" entity allows you to capture and manage information about each invoice, including its unique identifier, associated project, amount, due date, and payment status. This entity is pivotal for effective financial tracking and management in the system. |
|---------|--|

Table.2. Candidate Attribute Set:

| Noun | Likely Entity Set to be Assigned |
|--------------------|---|
| project_ID | Project, Task, Invoice, Budget_track, Feedback |
| project_name | Project |
| description | Project, Task |
| type | Project, Material, Feedback |
| project_budget | Project |
| timeline | Project |
| status | Project, Task |
| start_date | Project |
| end_date | Project |
| project_location | Project |
| client_ID | Client, Project, Feedback |
| project_manager_ID | Project_manager, Project, Invoice, Budget_track |
| designer_ID | Project, Designer |

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| | |
|------------------|---|
| supplier_ID | Supplier, Material |
| name | Supplier, Material, Client, Project_manager, Designer |
| website | Supplier |
| address | Supplier, Client |
| email | Supplier, Client, Project_manager, Designer |
| contact_number | Supplier, Client, Project_manager, Designer |
| material_ID | Material, Project |
| cost | Material |
| preference | Client |
| client_budget | Client |
| experience | Project_manager, Designer |
| salary | Project_manager, Designer |
| task_ID | Task |
| task_deadline | Task |
| invoice_ID | Invoice |
| amount | Invoice |
| payment_method | Invoice |
| budget_ID | Budget |
| initial_budget | Budget |
| current_budget | Budget |
| remaining_budget | Budget |
| expense_catogory | Budget |

| | |
|-------------------|----------|
| feedback_ID | Feedback |
| Feedback_date | Feedback |
| rating | Feedback |
| feedback_comments | Feedback |
| feedback_type | Feedback |

Table.3. Rejected Noun List

| Noun | Reject Reason |
|---------------------------------|---------------|
| Interior Design Database System | general |
| preferences | attributes |
| space | duplicate |
| art | general |
| building | duplicate |
| range | vague |
| accessories | vague |
| furniture | vague |
| process | general |
| home | duplicate |
| business | irrelevant |
| schemes | irrelevant |
| colors | vague |
| style | vague |
| resources | vague |

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| | |
|---------------|------------|
| management | general |
| teams | duplicate |
| product | vague |
| plans | duplicates |
| data | general |
| software | irrelevant |
| stakeholders | attributes |
| information | general |
| time | attributes |
| aspect | general |
| document | general |
| communication | general |
| solution | vague |
| report | irrelevant |
| schedule | vague |
| tool | irrelevant |
| usage | general |
| idea | general |
| performance | vague |
| interaction | general |
| process | duplicate |
| progress | general |
| professionals | irrelevant |
| system | irrelevant |
| repository | vague |

Software Requirements Specification for Interior Design Database Management System

| | |
|---------------|------------|
| files | vague |
| utilization | irrelevant |
| decision | general |
| risk | vague |
| finance | irrelevant |
| allocation | irrelevant |
| security | irrelevant |
| operation | general |
| development | general |
| insights | irrelevant |
| database | irrelevant |
| requirements | general |
| specification | vague |
| variety | vague |
| woodrum | vague |
| model | vague |
| sketches | irrelevant |
| people | general |
| function | general |
| application | irrelevant |
| commerce | vague |
| transaction | irrelevant |
| enterprise | irrelevant |
| store | vague |
| language | general |

Software Requirements Specification for Interior Design Database Management System

| | |
|--------------|------------|
| query | vague |
| failure | general |
| technique | general |
| skills | irrelevant |
| approach | general |
| objective | irrelevant |
| initiation | general |
| phase | irrelevant |
| computer | general |
| members | irrelevant |
| order | irrelevant |
| track | attributes |
| dependencies | vague |
| channel | vague |
| module | vague |
| page | general |
| users | duplicate |
| share | irrelevant |
| workflow | general |
| document | duplicate |
| hub | irrelevant |
| equipment | vague |
| version | general |
| coordination | irrelevant |
| storage | irrelevant |

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| | |
|----------------|------------|
| concept | general |
| floor | irrelevant |
| visual | irrelevant |
| problem | general |
| revolution | general |
| error | irrelevant |
| date | attributes |
| board | irrelevant |
| change | general |
| result | general |
| engagement | vague |
| delivery | irrelevant |
| representation | general |
| part | general |
| things | general |
| work | general |
| screen | irrelevant |
| construction | irrelevant |
| helper | general |
| trouble | vague |
| goal | general |
| organization | irrelevant |
| program | general |
| central | general |
| reduce | vague |

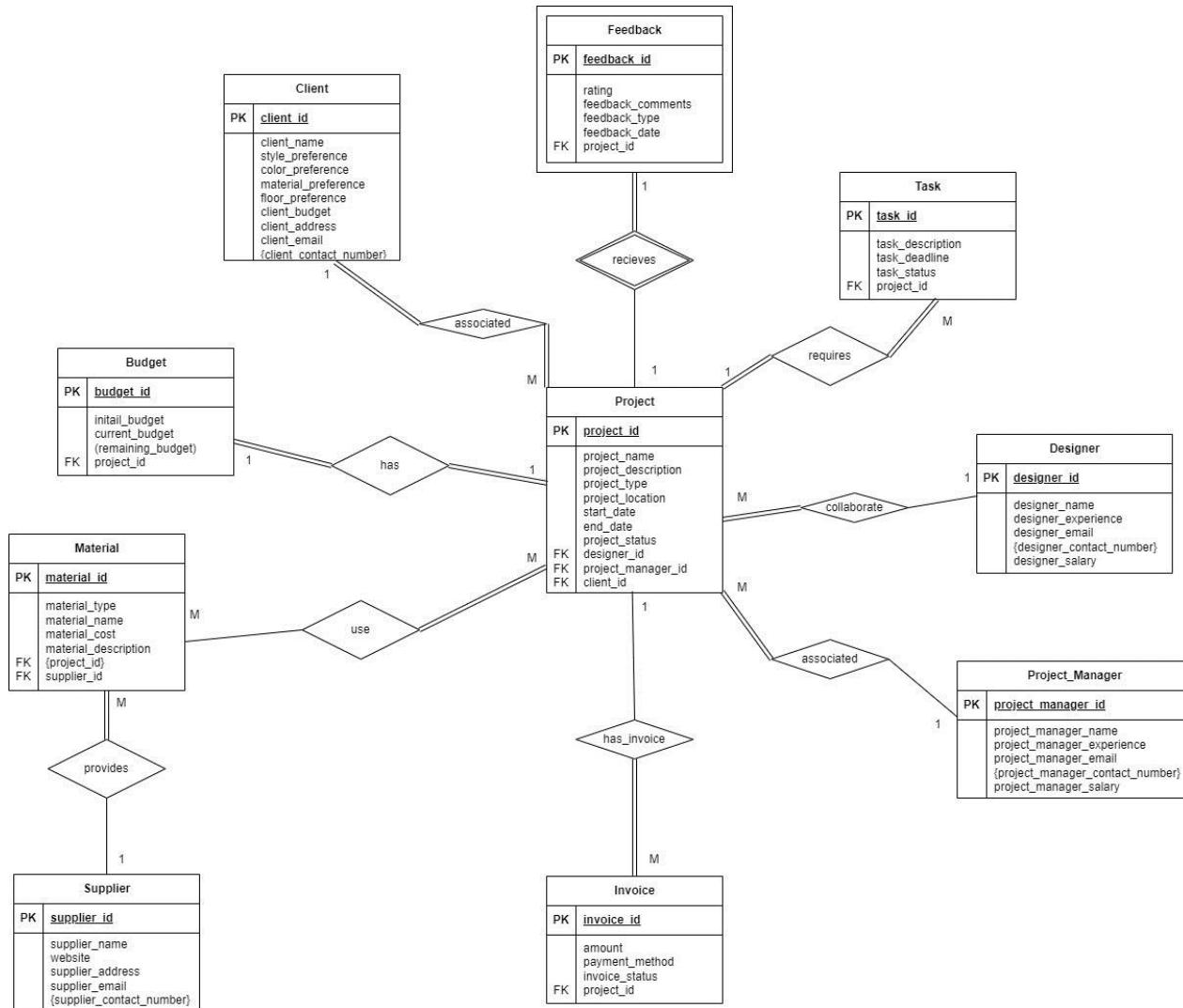
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| | |
|---------------|------------|
| streamline | irrelevant |
| productivity | irrelevant |
| section | general |
| scope | irrelevant |
| collaboration | irrelevant |
| expenditure | irrelevant |
| length | vague |
| video | vague |
| event | vague |
| list | general |
| satisfaction | general |
| approval | irrelevant |
| mechanism | irrelevant |
| portal | general |
| action | general |
| service | irrelevant |
| format | general |
| report | duplicate |
| delete | general |
| maintenance | irrelevant |
| degradation | vague |
| growth | vague |
| timeline | attributes |
| destruction | vague |

2. Entity Attribute Table

| Noun | List of Attributes |
|-----------------|---|
| Project | project_ID, project_name, project_type, project_description, project_location, start_date, end_date, project_status, designer_ID, project_manager_ID, client_ID |
| Supplier | supplier_ID, supplier_name, website, supplier_contact_number, supplier_address, supplier_email, |
| Material | material_ID, supplier_ID, project_ID, material_description, material_type, material_name, cost |
| Client | client_ID, client_name, style_preference, client_address, client_email, client_contact_number, color_preference, client_budget |
| Project_manager | project_manager_ID, project_manager_name, project_manager_experience, project_manager_email, project_manager_contact_number, project_manager_salary |
| Designer | designer_ID, designer_name, designer_contact_number, designer_salary, designer_experience, designer_email |
| Task | task_ID, task_description, task_deadline, task_status, project_ID |
| Invoice | invoice_ID, amount, payment_method, invoice_status, project_ID |
| Budget | budget_ID, project_ID, initial_budget, current_budget, remaining_budget |
| Feedback | feedback_ID, project_ID, feedback_comments, feedback_date, feedback_type |

3. ER Diagram



3. Database Schema

1. Relational Schema:

Client(client_id, client_name, style_preference, color_preference, material_preference, floor_preference, client_address, client_budget, client_email, client_contact_number)

Feedback(feedback_id, project_id, rating, feedback_comments, feedback_type, feedback_date)

Task(task_id, task_description, task_deadline, task_status, project_id)

Designer(designer_id, designer_name, designer_experience, designer_email, designer_contact_number, designer_salary)

Project_Manager(project_manager_id, project_manager_name, project_manager_experience, project_manager_email, project_manager_contact_number, project_manager_salary)

Project(project_id, project_name, project_description, project_type, project_location, start_date, end_date, project_status, designer_id, project_manager_id, client_id)

Budget(budget_id, initial_budget, current_budget, remaining_budget, project_id)

Material(material_id, material_type, material_name, material_description, cost, project_id, supplier_id)

Supplier(supplier_id, supplier_name, website, supplier_email, supplier_address, supplier_contact_number)

Invoice(invoice_id, amount, payment_method, payment_date, invoice_status, project_id)

2. Schema Refinement Process:

(i). List of redundancies existing for every schema which is part of the database:

- Client: No evident redundancy.
- Feedback: Potential redundancy with the client_id and project_id combination if a client provides multiple feedbacks for the same project.
- Task: No evident redundancy. Designer: No evident redundancy.
- Project Manager: No evident redundancy.
- Project: The association with client_id could lead to redundancy or if a client can associate with multiple projects.
- Budget: Potential redundancy if a project has multiple budgets over its lifecycle.
- Material: The association with project_id can lead to redundancy if the same material can be used across multiple projects.
- Supplier: No evident redundancy.
- Invoice: If a project has multiple invoices, the project_id could become redundant.

(ii). List of updates, delete, and insert anomalies for every schema:

- Client:
 - Update: Changing the address or contact_number might require changes in multiple places if duplicated.
 - Delete: Removing a client might orphan related feedback.
 - Insert: No evident anomalies.
- Feedback:
 - Update: If client_id or project_id changes, consistency must be maintained.
 - Delete: No evident anomalies.
 - Insert: Ensuring that the project and client exist before adding feedback.
- Task:
 - Update: Changing the project_id might affect consistency.
 - Delete: No evident anomalies.
 - Insert: Ensuring that the project exists before adding a task.
- Designer and Project Manager:
 - Update: Changes in contact_number or email could require multiple updates if duplicated.
 - Delete: Removing might orphan projects they're associated with.
 - Insert: No evident anomalies.
- Project:

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- Update: Changing associated client_id or budget_id might lead to inconsistencies.
 - Delete: Deleting a project might orphan tasks, feedbacks, and invoices.
 - Insert: Ensuring all foreign keys are valid before inserting.
-
- Budget:
 - Update: Modifying values might require recalculating the remaining budget.
 - Delete: No evident anomalies.
 - Insert: Ensuring that the project exists before adding a budget.
 - Material:
 - Update: Changing project_id might lead to inconsistencies.
 - Delete: Removing a material might affect project costs.
 - Insert: Ensuring the associated project exists.
 - Supplier:
 - Update/Delete/Insert: No evident anomalies.
 - Invoice:
 - Update: Changing project_id could lead to inconsistencies.
 - Delete: No evident anomalies.
 - Insert: Ensuring the project exists.

(iii). Document the logic of how you arrived at the 3NF/BCNF design step by step, starting from the original design:

Original Design (Unnormalized Form):

- Client(client_id, client_name, style_preference, color_preference, client_budget, client_address, client_email, client_contact_number)
- Budget(budget_id, initial_budget, current_budget, remaining_budget, project_id)
- Feedback(feedback_id, project_id, rating, comments, feedback_type, feedback_date)
- Project(project_id, project_name, project_type, project_description, project_location, start_date, end_date, project_status, designer_id, project_manager_id, client_id)
- Task(task_id, task_description, task_deadline, task_status, project_id)
- Designer(designer_id, designer_name, designer_experience, designer_email, designer_contact_number, designer_salary)
- Project_Manager(project_manager_id, project_manager_name, project_manager_experience, project_manager_email, project_manager_contact_number, project_manager_salary)

- Material(material_id, material_type, material_name, material_cost, material_description, project_id, supplier_id)
- Supplier(supplier_id, supplier_name, website, supplier_address, supplier_email, supplier_contact_number)
- Invoice(invoice_id, amount, payment_method, invoice_status, project_id)

A. 1NF (First Normal Form)

It deals with atomicity, meaning values in each column of a table are atomic. When dealing with multivalued attributes in relational database normalization, it's common to create separate tables to represent these attributes and establish a one-to-many relationship between the main entity and the new table. This ensures that the schema adheres to the First Normal Form (1NF), which requires that each column contains only atomic (indivisible) values.

Here's how you can handle the multivalued attributes you mentioned:

- Client_Contact
 - Instead of having the client_contact_number as a multivalued attribute in the Client table:
 - Client (client_id, client_name, style_preference, ... [other attributes excluding client_contact_number])
 - Client_Contact (client_id, contact_number)
- Supplier_Contact
 - Similar to the Client:
 - Supplier (supplier_id, supplier_name, website, ... [other attributes excluding supplier_contact_number])
 - Supplier_Contact (supplier_id, contact_number)
- Project_Manager_Contact
 - For the Project Manager's contact number:
 - Project_Manager (project_manager_id, project_manager_name, ... [other attributes excluding project_manager_contact_number])
 - ProjectManager_Contact (project_manager_id, contact_number)
- Designer_Contact
 - For the Designer's contact number:
 - Designer (designer_id, designer_name, ... [other attributes excluding designer_contact_number])
 - Designer_Contact (designer_id, contact_number)
- Material_Projects
 - For the multivalued project_id in the Material entity:
 - Material (material_id, material_type, material_name, ... [other attributes excluding project_id])
 - Material_Projects (material_id, project_id)

- Client_preferences
- For different types of preferences in the client entity:
 - Client (client_id, client_name, client_email, ... [other attributes excluding style_preference, color_preference, material_preference, floor_preference])
 - Client_Preferences (client_id, style_preference, color_preference, material_preference, floor_preference)

B. 2NF (Second Normal Form)

We need to ensure that all non-prime attributes are fully functionally dependent on the primary key. For 2NF, ensure no partial dependency. For tables where the primary key is composed of multiple columns, ensure that non-key columns are dependent on the entire composite key and not on its parts.

- Designer and Project_Manager: Both tables seem to be in 2NF since there's no partial dependency.
- Supplier: All attributes are directly dependent on supplier_id, hence in 2NF.
- Feedback: The table appears to be in 2NF since the non-prime attributes are functionally dependent on feedback_id.
- Budget: All attributes are directly dependent on budget_id, hence in 2NF.
- Task: All attributes are functionally dependent on task_id, so it's in 2NF.
- Client: All attributes are directly dependent on the primary key (client_id).
- Project: All non-prime are directly dependent on the entire primary key project_id. Hence in 2NF.
- Material: All non-prime are directly dependent on the entire primary key material_id, so its in 2NF.
- Invoice: All non-prime attributes are directly dependent on the entire primary key invoice_id.
- Client_Contact and Supplier_Contact and Project_Manager_Contact and Designer_Contact: All tables seem to be in 2NF since there's no partial dependency.
- Material_Projects: All attributes are directly dependent on the composite primary key (material_id, project_id).
- Client_Preferences Schema: Style_preference, color_preference, material_preference, and floor_preference are directly dependent on the primary key (client_id).

C. 3NF (Third Normal Form)

For 3NF, ensure that there are no transitive dependencies. Non-key columns should not be dependent on other non-key columns. Create separate tables for attributes that aren't dependent on the primary key.

- Designer and Project_Manager: Both tables seem to be in 3NF since there's no transitive dependency.
- Supplier: All attributes are directly dependent on supplier_id, hence in 3NF.

- Feedback: The table appears to be in 3NF since the non-prime attributes are functionally dependent on feedback_id.
- Budget: All attributes are directly dependent on budget_id, hence in 3NF.
- Task: All attributes are functionally dependent on task_id, so it's in 3NF.
- Client: All non-key attributes are directly dependent on the primary key (client_id). Hence in 3NF.
- Project: The non-prime attributes are directly dependent on the primary key. The table is in 3NF.
- Material: Material attributes are directly dependent on the primary key, The table is in 3NF.
- Invoice: Non-prime attributes are directly dependent on the entire primary key invoice_id. The table is in 3NF.
- Client_Contact: The contact_number is directly dependent on the primary key. The table is in 3NF.
- Supplier_Contact: The contact_number is directly dependent on the primary key. Hence in 3NF.
- Project_Manager_Contact: The contact_number is directly dependent on the primary key. The table is in 3NF.
- Designer_Contact Schema: The contact_number is directly dependent on the primary key. The table is in 3NF.
- Material_Projects Schema: The table is in 3NF as all attributes are directly dependent on the composite primary key (material_id, project_id).
- Client_Preferences: Style_preference, color_preference, material_preference, and floor_preference are directly dependent on the primary key (client_id). The table is in 3NF.

D. BCNF (Boyce – Codd Normal Form)

It's a stricter version of 3NF where, for any non-trivial functional dependency, $X \rightarrow Y$, X should be a super key.

Given our breakdown so far, all schemas are already in BCNF. There's no non-trivial functional dependency where the left-hand side is not a super key.

3. Normalized Schema

- Client(client_id, client_name, client_budget, client_address, client_email)
- Budget(budget_id, initial_budget, current_budget, remaining_budget, project_id)
- Feedback(feedback_id, project_id, rating, comments, feedback_type, feedback_date)
- Project(project_id, project_name, project_type, project_description, project_location, start_date, end_date, project_status, designer_id, project_manager_id, client_id, budget_id)
- Task(task_id, task_description, task_deadline, task_status, project_id)
- Designer(designer_id, designer_name, designer_experience, designer_email, designer_contact_number, designer_salary)
- Project_Manager(project_manager_id, project_manager_name, project_manager_experience, project_manager_email, project_manager_contact_number, project_manager_salary)
- Material(material_id, material_type, material_name, material_cost, material_description, project_id, supplier_id)
- Supplier(supplier_id, supplier_name, website, supplier_address, supplier_email, supplier_contact_number)
- Invoice(invoice_id, amount, payment_method, invoice_status, project_id)
- Client_Contact (client_id, contact_number) Supplier_Contact (supplier_id, contact_number)
- ProjectManager_Contact (project_manager_id, contact_number) Designer_Contact (designer_id, contact_number) Material_Projects (material_id, project_id)
- Client_Preferences (client_id, style_preference, color_preference, material_preference, floor_preference)

4. DDL AND SQL

DDL Scripts

```
SET search_path=ID_DB;
```

```
CREATE SCHEMA
```

```
ID_DB;CREATE TABLE
```

```
Client (
```

```
    client_id VARCHAR(5) PRIMARY KEY,  
    client_name VARCHAR(50) NOT NULL,  
    client_budget NUMERIC(11, 2) CHECK (client_budget >= 0),  
    client_address TEXT NOT NULL,  
    client_email VARCHAR(100) UNIQUE
```

```
);
```

```
CREATE TABLE Designer (
```

```
    designer_id VARCHAR(5) PRIMARY KEY,  
    designer_name VARCHAR(50) NOT NULL,  
    designer_experience VARCHAR(10),  
    designer_email VARCHAR(100) UNIQUE,  
    designer_salary NUMERIC(10, 2) NOT NULL
```

```
);
```

```
CREATE TABLE Project_Manager (
```

```
    project_manager_id VARCHAR(5) PRIMARY KEY,  
    project_manager_name VARCHAR(50) NOT NULL,  
    project_manager_experience VARCHAR(10),  
    project_manager_email VARCHAR(100) UNIQUE,  
    project_manager_salary NUMERIC(10, 2) NOT NULL
```

```
);
```

```
CREATE TABLE Supplier (
```

```
    supplier_id VARCHAR(5) PRIMARY KEY,  
    supplier_name VARCHAR(50) NOT NULL,  
    website VARCHAR(100) UNIQUE,  
    supplier_address TEXT NOT NULL,  
    supplier_email VARCHAR(100) UNIQUE
```

```
);
```

```
CREATE TABLE Project (
    project_id VARCHAR(5) PRIMARY KEY,
    project_name VARCHAR(100) NOT NULL,
    project_type VARCHAR(50),
    project_description TEXT,
    project_location
    VARCHAR(100),start_date
    DATE,
    end_date DATE,
    project_status
    VARCHAR(50),
    designer_id VARCHAR(5) REFERENCES Designer(designer_id),
    project_manager_id VARCHAR(5) REFERENCES
    Project_Manager(project_manager_id),client_id VARCHAR(5) REFERENCES
    Client(client_id)
);
```

```
CREATE TABLE Budget (
    budget_id VARCHAR(5) PRIMARY KEY,
    initial_budget NUMERIC(10, 2) NOT NULL,
    current_budget NUMERIC(10, 2) NOT NULL,
    remaining_budget NUMERIC(10, 2) NOT NULL,
    project_id VARCHAR(5) REFERENCES Project(project_id)
);
```

```
CREATE TABLE Feedback (
    feedback_id VARCHAR(5) PRIMARY KEY,
    project_id VARCHAR(5) REFERENCES
    Project(project_id),rating INT CHECK (rating >= 1 AND
    rating <= 5), feedback_comments TEXT,
    feedback_type
    VARCHAR(50),feedback_date
    DATE
);
```

```
CREATE TABLE Task (
    task_id VARCHAR(5) PRIMARY KEY,
    task_description TEXT NOT
    NULL,task_deadline DATE,
    task_status VARCHAR(50),
    project_id VARCHAR(5) REFERENCES Project(project_id)
);
```

```
CREATE TABLE Material (
    material_id VARCHAR(5) PRIMARY KEY,
    material_type VARCHAR(50),
    material_name VARCHAR(50) NOT NULL,
    material_cost NUMERIC(9, 2),
    material_description TEXT,
    supplier_id VARCHAR(5) REFERENCES Supplier(supplier_id)
);
```

```
CREATE TABLE Invoice (
    invoice_id VARCHAR(5) PRIMARY KEY,
    amount NUMERIC(10, 2) NOT NULL,
    payment_method VARCHAR(100),
    invoice_status VARCHAR(50),
    project_id VARCHAR(5) REFERENCES Project(project_id)
);
```

```
CREATE TABLE Client_Contact (
    client_id VARCHAR(5) REFERENCES Client(client_id),
    contact_number VARCHAR(10) NOT NULL,
    PRIMARY KEY (client_id, contact_number)
);
```

```
CREATE TABLE Supplier_Contact (
    supplier_id VARCHAR(5) REFERENCES Supplier(supplier_id),
    contact_number VARCHAR(10) NOT NULL,
    PRIMARY KEY (supplier_id, contact_number)
);
```

```
CREATE TABLE Designer_Contact (
    designer_id VARCHAR(5) REFERENCES Designer(designer_id),
    contact_number VARCHAR(10) NOT NULL,
    PRIMARY KEY (designer_id, contact_number)
);
```

```
CREATE TABLE Project_Manager_Contact (
    project_manager_id VARCHAR(5) REFERENCES Project_Manager(project_manager_id),
    contact_number VARCHAR(10) NOT NULL,
    PRIMARY KEY (project_manager_id, contact_number)
);

CREATE TABLE Material_Projects (
    material_id VARCHAR(5) REFERENCES
    Material(material_id), project_id VARCHAR(5)
    REFERENCES Project(project_id), PRIMARY KEY
    (material_id, project_id)
);

CREATE TABLE Client_Preferences (
    client_id VARCHAR(5) REFERENCES Client(client_id),
    style_preference VARCHAR(50),
    color_preference VARCHAR(50),
    material_preference
    VARCHAR(50), floor_preference
    VARCHAR(50), PRIMARY KEY
    (client_id)
);
```

DDL Snapshots:

(data imported from csv file)

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1. select * from client

The screenshot shows the pgAdmin 4 interface. At the top, there's a toolbar with various icons for database management. Below the toolbar is a connection bar showing 'ID_DB/postgres@PostgreSQL 15+'. The main area has two tabs: 'Query' (selected) and 'Query History'. The 'Query' tab contains the following SQL code:

```
1: INSERT INTO client (client_id, client_name, client_budget, client_address, client_email
2: ('C01', 'Aarav Sharma', 5450000, '123, Green Avenue, Ahmedabad, Gujarat', 'aarav.shar
3: ('C02', 'Kavya Patel', 8700000, '45, Tulsi Nagar, Surat, Gujarat', 'kavya.patel_5678@
4: ('C03', 'Rohan Kapoor', 12350000, '789, Silver Street, Vadodara, Gujarat', 'rohan.kap
5: ('C04', 'Priya Singh', 3200000, '321, Rose Garden, Rajkot, Gujarat', 'priya.singh_345
6: ('C05', 'Arjun Mishra', 6500000, '67, Sapphire Road, Gandhinagar, Gujarat', 'arjun.mis
7: select * from client;
8:
9:
10:
11:
```

Below the code, the 'Data Output' tab is selected, displaying a grid of data from the 'client' table:

| | client_id [PK] character varying (5) | client_name character varying (50) | client_budget numeric (11,2) | client_address text | client_email character varying (100) |
|---|---|---------------------------------------|---------------------------------|---|---|
| 1 | C01 | Aarav Sharma | 5450000.00 | 123, Green Avenue, Ahmedabad, Gujarat | aarav.sharma_1234@gmail.com |
| 2 | C02 | Kavya Patel | 8700000.00 | 45, Tulsi Nagar, Surat, Gujarat | kavya.patel_5678@hotmail.com |
| 3 | C03 | Rohan Kapoor | 12350000.00 | 789, Silver Street, Vadodara, Gujarat | rohan.kapoor_9012@yahoo.com |
| 4 | C04 | Priya Singh | 3200000.00 | 321, Rose Garden, Rajkot, Gujarat | priya.singh_3456@outlook.com |
| 5 | C05 | Arjun Mishra | 6500000.00 | 67, Sapphire Road, Gandhinagar, Gujarat | arjun.mishra_7890@protonmail.com |
| 6 | C06 | Naina Reddy | 42500000.00 | 234, Lotus Colony, Bhavnagar, Gujarat | naina.reddy_2345@icloud.com |
| 7 | C07 | Sameer Verma | 8750000.00 | 890, Emerald Lane, Jamnagar, Gujarat | sameer.verma_6789@live.com |
| 8 | C08 | Meera Joshi | 3100000.00 | 456, Jasmine Park, Junagadh, Gujarat | meera.joshi_1234@gmail.com |
| 9 | C09 | Siddharth Chauhan | 15680000.00 | 12, Ruby Street, Anand, Gujarat | siddharth.chauhan_5678@mail.com |

Total rows: 100 of 100 Query complete 00:00:00.163 Ln 7, Col 22

Number of tuples = 100

2. select * from designer

Software Requirements Specification for Interior Design Database Management System

The screenshot shows the pgAdmin 4 interface. At the top, there's a navigation bar with links for Dashboard, Properties, SQL, Statistics, Dependencies, Dependents, Processes, and a connection tab labeled "ID_DB/postgres@PostgreSQL 15". Below the navigation bar is a toolbar with various icons for database management tasks. The main area has two tabs: "Query" and "Query History", with "Query" currently selected. The "Query" tab contains the following SQL code:

```
1 INSERT INTO designer (designer_id, designer_name, designer_experience, designer_email,
2 ('D01', 'Mohan Suri', '4 years', 'mohan.suri_1234@gmail.com', 625000),
3 ('D02', 'Anjali Kapoor', '5 years', 'anjali.kapoor_5678@hotmail.com', 675000),
4 ('D03', 'Rakesh Verma', '5 years', 'rakesh.verma_9012@yahoo.com', 710000),
5 ('D04', 'Nisha Malhotra', '7 years', 'nisha.malhotra_2345@outlook.com', 890000),
6 ('D05', 'Vikram Iyer', '5 years', 'vikram.iyer_6789@protonmail.com', 735000);
7 select * from designer;
8
9
10
```

Below the query editor is a "Data Output" tab which displays the results of the query as a table. The table has five columns: "designer_id" [PK] character varying (5), "designer_name" character varying (50), "designer_experience" character varying (10), "designer_email" character varying (100), and "designer_salary" numeric (10,2). The data consists of 10 rows, each representing a designer with their ID, name, experience, email, and salary. The total number of rows is 100, and the query was completed at 00:00:00.164.

| | designer_id | designer_name | designer_experience | designer_email | designer_salary |
|---|-------------|----------------|---------------------|---------------------------------|-----------------|
| 1 | D01 | Mohan Suri | 4 years | mohan.suri_1234@gmail.com | 625000.00 |
| 2 | D02 | Anjali Kapoor | 5 years | anjali.kapoor_5678@hotmail.com | 675000.00 |
| 3 | D03 | Rakesh Verma | 5 years | rakesh.verma_9012@yahoo.com | 710000.00 |
| 4 | D04 | Nisha Malhotra | 7 years | nisha.malhotra_2345@outlook.com | 890000.00 |
| 5 | D05 | Vikram Iyer | 5 years | vikram.iyer_6789@protonmail.com | 735000.00 |
| 6 | D06 | Karishma Reddy | 7 years | karishma.reddy_1234@icloud.com | 845000.00 |
| 7 | D07 | Rohit Nair | 9 years | rohit.nair_5678@live.com | 975000.00 |
| 8 | D08 | Swati Mehra | 4 years | swati.mehra_9012@gmail.com | 640000.00 |
| 9 | D09 | Varun Chawla | 10 years | varun.chawla_2345@mail.com | 1015000.00 |

Number of tuples = 100

3. select * from project_manager

Software Requirements Specification for Interior Design Database Management System

The screenshot shows the pgAdmin 4 interface. At the top, there's a navigation bar with links like Dashboard, Properties, SQL, Statistics, Dependencies, Dependents, Processes, and a connection status for 'ID_DB/postgres@PostgreSQL 15+'. Below the navigation bar is a toolbar with various icons for database management tasks.

The main area is divided into two tabs: 'Query' and 'Query History'. The 'Query' tab contains the following SQL code:

```
1 INSERT INTO project_manager (project_manager_id, project_manager_name, project_manager_
2 ('PM01', 'Abhishek Patel', '4 years', 'abhishek.patel_1234@gmail.com', 625000),
3 ('PM02', 'Aishwarya Chatterjee', '5 years', 'aishwarya.chatterjee_5678@hotmail.com',
4 ('PM03', 'Akash Verma', '5 years', 'akash.verma_9012@yahoo.com', 710000),
5 ('PM04', 'Amrita Sharma', '7 years', 'amrita.sharma_3456@outlook.com', 890000),
6 ('PM05', 'Anand Reddy', '5 years', 'anand.reddy_7890@protonmail.com', 735000);
7 select * from project_managers;
```

The 'Data Output' tab is selected, displaying the results of the query in a table format:

| | project_manager_id [PK] character varying (5) | project_manager_name character varying (50) | project_manager_experience character varying (10) | project_manager_email character varying (100) | project_manager_salary numeric (10,2) |
|---|--|--|--|--|--|
| 1 | PM01 | Abhishek Patel | 4 years | abhishek.patel_1234@gmail.com | 625000.00 |
| 2 | PM02 | Aishwarya Chatterjee | 5 years | aishwarya.chatterjee_5678@hotmail.com | 675000.00 |
| 3 | PM03 | Akash Verma | 5 years | akash.verma_9012@yahoo.com | 710000.00 |
| 4 | PM04 | Amrita Sharma | 7 years | amrita.sharma_3456@outlook.com | 890000.00 |
| 5 | PM05 | Anand Reddy | 5 years | anand.reddy_7890@protonmail.com | 735000.00 |
| 6 | PM06 | Anika Das | 7 years | anika.das_2345@icloud.com | 845000.00 |
| 7 | PM07 | Arijun Kapoor | 9 years | arijun.kapoor_6789@live.com | 975000.00 |
| 8 | PM08 | Ayushman Singh | 4 years | ayushman.singh_1234@ymail.com | 640000.00 |
| 9 | PM09 | Bhavna Mishra | 10 years | bhavna.mishra_5678@mail.com | 1015000.00 |

Below the table, the status bar shows 'Total rows: 100 of 100' and 'Query complete 00:00:00.144'. To the right of the table, it says 'Ln 7, Col 31'.

Number of tuples = 100

4. select * from supplier

Software Requirements Specification for Interior Design Database Management System

The screenshot shows the pgAdmin 4 interface. The top bar includes tabs for Dashboard, Properties, SQL, Statistics, Dependencies, Dependents, Processes, and the current connection ID_DB/postgres@PostgreSQL 15+. Below the tabs is a toolbar with various icons for database management. The main area has two tabs: 'Query' (selected) and 'Query History'. The 'Query' tab contains the following SQL code:

```
1 INSERT INTO supplier (supplier_id, supplier_name, website, supplier_address, supplier_email)
2 ('S01', 'WoodCraft Interiors', 'WoodCraftInteriors.com', 'WoodCraft Interiors - 123,
3 ('S02', 'StoneSense Decor', 'StoneSenseDecor.com', 'StoneSense Decor - 456, Park Aver
4 ('S03', 'MetalMaster Designs', 'MetalMasterDesigns.com', 'MetalMaster Designs - 789,
5 ('S04', 'GlassGenius Creations', 'GlassGeniusCreations.com', 'GlassGenius Creations -
6 ('S05', 'Hardwood Haven', 'HardwoodHaven.com', 'Hardwood Haven - 567, Woodland Avenue
7 select * from supplier;
8 |
```

The 'Data Output' tab below displays the results of the query as a table:

| | supplier_id | supplier_name | website | supplier_address | supplier_email |
|---|-------------|-------------------------|----------------------------|---|----------------------------------|
| 1 | S01 | WoodCraft Interiors | WoodCraftInteriors.com | WoodCraft Interiors - 123, Main Street, Ahmedab... | woodcraft_interiors@gmail.co... |
| 2 | S02 | StoneSense Decor | StoneSenseDecor.com | StoneSense Decor - 456, Park Avenue, Surat, Guja... | stonesense_decor@hotmail.co... |
| 3 | S03 | MetalMaster Designs | MetalMasterDesigns.com | MetalMaster Designs - 789, Industrial Road, Vadod... | metalmaster_designs@yahoo... |
| 4 | S04 | GlassGenius Creations | GlassGeniusCreations.com | GlassGenius Creations - 234, Design Street, Rajkot... | glassgenius_creations@outlook... |
| 5 | S05 | Hardwood Haven | HardwoodHaven.com | Hardwood Haven - 567, Woodland Avenue, Gandhin... | hardwood_haven@protonmail... |
| 6 | S06 | LaminateLux Interiors | LaminateLuxInteriors.com | LaminateLux Interiors - 890, Texture Lane, Bhavn... | laminatelux_interiors@icloud... |
| 7 | S07 | TileTrends Studio | TileTrendsStudio.com | TileTrends Studio - 123, Ceramic Plaza, Jamnagar... | tiletrends_studio@live.com |
| 8 | S08 | CarpetCouture Creations | CarpetCoutureCreations.com | CarpetCouture Creations - 456, Fabric Road, Anand... | carpetcouture_creations@ymail... |

Total rows: 80 of 80 Query complete 00:00:00.107 Ln 8, Col 1

Number of tuples = 80

5. select * from project

Software Requirements Specification for Interior Design Database Management System

The screenshot shows the pgAdmin 4 interface. At the top, there's a navigation bar with links like Dashboard, Properties, SQL, Statistics, Dependencies, Dependents, Processes, and a connection status for ID_DB/postgres@PostgreSQL 15*. Below the navigation bar is a toolbar with various icons for database management tasks.

The main area is divided into two tabs: "Query" and "Query History". The "Query" tab contains the following SQL code:

```
1 INSERT INTO project (project_id, project_name, project_type, project_description, proje
2 ('P01', 'Holistic Health Home', 'Hotel or Hospitality Space', 'A place for holistic w
3 ('P02', 'Saffron Heights Apartment Complex', 'Home', 'Luxury living with stunning vie
4 ('P03', 'Rajasthan Crafts Bazaar', 'Healthcare Facility', 'Rich craft heritage on dis
5 ('P04', 'Taj Mahal Luxury Getaway', 'Entertainment Venue', 'Ultimate luxury near the
6 ('P05', 'Divine Bollywood Theater', 'Educational Facility', 'Bollywood magic on stage
7 select * from project;
```

Below the code, there are tabs for "Data Output", "Messages", and "Notifications". The "Data Output" tab displays the results of the query as a table:

| project_id | project_name | project_type | project_description | project_location |
|------------|-----------------------------------|----------------------------|-------------------------------------|------------------|
| 1 | Holistic Health Home | Hotel or Hospitality Space | A place for holistic wellness. | Morbi |
| 2 | Saffron Heights Apartment Complex | Home | Luxury living with stunning views. | Junagadh |
| 3 | Rajasthan Crafts Bazaar | Healthcare Facility | Rich craft heritage on display. | Modasa |
| 4 | Taj Mahal Luxury Getaway | Entertainment Venue | Ultimate luxury near the Taj Mahal. | Bharuch |
| 5 | Divine Bollywood Theater | Educational Facility | Bollywood magic on stage. | Nadiad |
| 6 | Goan Beach Retreat | Entertainment Venue | Tranquil beachside escape. | Himatnagar |
| 7 | Maharaja's Hotel & Spa | Healthcare Facility | Opuлence and rejuvenation combined. | Gandhinagar |
| 8 | Himalayan Wellness Retreat | Healthcare Facility | Wellness in the Himalayas. | Morbi |

At the bottom of the interface, there are status messages: "Total rows: 150 of 150" and "Query complete 00:00:00.140". To the right, it says "Ln 7, Col 23".

Number of tuples = 150

6. select * from budget

Software Requirements Specification for Interior Design Database Management System

The screenshot shows the pgAdmin 4 interface. The top bar has tabs for Dashboard, Properties, SQL, Statistics, Dependencies, Dependents, Processes, and a connection labeled ID_DB/postgres@PostgreSQL 15*. Below the tabs is a toolbar with various icons. The main area is divided into two tabs: 'Query' and 'Query History'. The 'Query' tab contains the following SQL code:

```
1 INSERT INTO budget (budget_id, initial_budget, current_budget, remaining_budget, project_id)
2 ('B01', 800000, 720000, 80000, 'P98'),
3 ('B02', 570000, 555000, 15000, 'P26'),
4 ('B03', 2500000, 2525000, -25000, 'P14'),
5 ('B04', 660000, 654000, 6000, 'P51'),
6 ('B05', 260000, 253000, 7000, 'P57');
7 select * from budget;
```

The 'Data Output' tab below shows the results of the query:

| | budget_id | initial_budget | current_budget | remaining_budget | project_id |
|---|-----------|----------------|----------------|------------------|------------|
| 1 | B01 | 800000.00 | 720000.00 | 80000.00 | P98 |
| 2 | B02 | 570000.00 | 555000.00 | 15000.00 | P26 |
| 3 | B03 | 2500000.00 | 2525000.00 | -25000.00 | P14 |
| 4 | B04 | 660000.00 | 654000.00 | 6000.00 | P51 |
| 5 | B05 | 260000.00 | 253000.00 | 7000.00 | P57 |
| 6 | B06 | 1200000.00 | 1170000.00 | 30000.00 | P21 |
| 7 | B07 | 670000.00 | 660000.00 | 10000.00 | P100 |
| 8 | B08 | 570000.00 | 567000.00 | 3000.00 | P132 |
| 9 | B09 | 210000.00 | 204000.00 | 6000.00 | P117 |

Total rows: 150 of 150 Query complete 00:00:00.112 Ln 7, Col 22

Number of tuples =150

7. select * from invoice

Software Requirements Specification for Interior Design Database Management System

The screenshot shows the pgAdmin 4 interface. In the top navigation bar, the connection is set to "ID_DB/postgres@PostgreSQL 15". The main area has two tabs: "Query" and "Scratch Pad". The "Query" tab contains the following SQL code:

```
1 INSERT INTO invoice (invoice_id, amount, payment_method, invoice_status, project_id) V
2 ('I01', 119089, 'Credit Card', 'Paid', 'P98'),
3 ('I02', 20911, 'Debit Card', 'Overdue', 'P98'),
4 ('I03', 243927, 'Bank Transfer', 'Approved', 'P26'),
5 ('I04', 401501, 'Check', 'Cancelled', 'P26'),
6 ('I05', 540572, 'PayPal', 'Processing', 'P26');
7 select * from invoice;
```

Below the code, the "Data Output" tab is active, displaying the results of the query as a table:

| | invoice_id [PK] character varying (5) | amount numeric (10,2) | payment_method character varying (100) | invoice_status character varying (50) | project_id character varying (5) |
|---|--|--------------------------|---|--|-------------------------------------|
| 1 | I01 | 119089.00 | Credit Card | Paid | P98 |
| 2 | I02 | 20911.00 | Debit Card | Overdue | P98 |
| 3 | I03 | 243927.00 | Bank Transfer | Approved | P26 |
| 4 | I04 | 401501.00 | Check | Cancelled | P26 |
| 5 | I05 | 540572.00 | PayPal | Processing | P26 |
| 6 | I06 | 34893.00 | Apple Pay | Delivered | P26 |
| 7 | I07 | 63391.00 | Google Pay | Refunded | P26 |
| 8 | I08 | 15663.00 | Online Wallet | Partial Payment | P26 |
| 9 | I09 | 15053.00 | Cash on Delivery | On Hold | P14 |

Total rows: 470 of 470 Query complete 00:00:00|151 Ln 7, Col 23

Number of tuples =470

8. select * from feedback

Software Requirements Specification for Interior Design Database Management System

The screenshot shows the pgAdmin 4 interface. At the top, there's a navigation bar with links like Dashboard, Properties, SQL, Statistics, Dependencies, Dependents, Processes, and a connection tab labeled ID_DB/postgres@PostgreSQL 15+. Below the navigation bar is a toolbar with various icons for database management tasks. The main area is divided into two panes: 'Query' on the left and 'Scratch Pad' on the right. The 'Query' pane contains a SQL script with numbered comments explaining the insertions into the 'feedback' table. The 'Scratch Pad' pane is currently empty. Below these panes is a 'Data Output' section which displays the results of the query. The results are presented in a table with columns: feedback_id, project_id, rating, feedback_comments, feedback_type, and feedback_date. The data shows 150 rows of feedback entries, each with a unique feedback_id, corresponding project_id, rating (1 to 5), detailed comments, a feedback type (Survey, Email Feedback, etc.), and a specific date.

| feedback_id | project_id | rating | feedback_comments | feedback_type | feedback_date |
|-------------|------------|--------|--|-----------------------|---------------|
| F01 | P98 | 1 | The interior design was simply stunning, exceeding our expectation. | Survey | 2015-12-01 |
| F02 | P26 | 3 | We are extremely satisfied with the interior design. It reflects our vision perfectly. | Email Feedback | 2016-09-24 |
| F03 | P14 | 4 | The attention to detail in the design was impressive. Every corner was thoughtfully planned. | Phone Survey | 2018-05-19 |
| F04 | P51 | 5 | The interior design project added a touch of elegance and sophistication to our home. | Website Feedback | 2019-11-07 |
| F05 | P57 | 2 | The design team truly captured our vision. Our home feels like a new space. | Social Media Feedback | 2020-03-15 |
| F06 | P21 | 1 | The interior design project breathed new life into our old house. | Google Form | 2017-08-29 |
| F07 | P100 | 4 | We appreciate the innovative design choices. It's a great addition to our neighborhood. | App Feedback | 2021-02-11 |
| F08 | P132 | 5 | The interior design transformed our commercial space into a welcoming environment. | Chat Support | 2016-07-06 |
| F09 | P117 | 3 | The design perfectly balanced aesthetics and functionality. | Email Feedback | 2022-10-28 |

Number of tuples =150

9. select * from material

Software Requirements Specification for Interior Design Database Management System

The screenshot shows the pgAdmin 4 interface. The top bar has tabs for Dashboard, Properties, SQL, Statistics, Dependencies, Dependents, Processes, and the current connection ID_DB/postgres@PostgreSQL 15+. The main area is the Query Pad, which contains the following SQL code:

```
1 INSERT INTO material (material_id, material_type, material_name, material_description,
2 ('M01', 'wood', 'oak', 'High-quality oak wood', 10000, 'S01'),
3 ('M02', 'wood', 'walnut', 'Beautiful walnut wood', 8000, 'S02'),
4 ('M03', 'wood', 'pine', 'Durable pine wood', 150000, 'S03'),
5 ('M04', 'wood', 'reclaimed wood', 'Sustainable reclaimed wood', 74000, 'S04'),
6 ('M05', 'textiles', 'wool', 'Cozy and warm wool fabric', 90000, 'S05');
? select * from material;
```

Below the Query Pad is the Data Output tab, which displays the results of the query as a table:

| | material_id | material_type | material_name | material_cost | material_description | supplier_id |
|---|-------------|---------------|-----------------|---------------|-----------------------------------|-------------|
| 1 | M01 | wood | oak | 10000.00 | High-quality oak wood | S01 |
| 2 | M02 | wood | walnut | 8000.00 | Beautiful walnut wood | S02 |
| 3 | M03 | wood | pine | 150000.00 | Durable pine wood | S03 |
| 4 | M04 | wood | reclaimed wood | 74000.00 | Sustainable reclaimed wood | S04 |
| 5 | M05 | textiles | wool | 90000.00 | Cozy and warm wool fabric | S05 |
| 6 | M06 | textiles | cotton | 32000.00 | Soft and breathable cotton fabric | S06 |
| 7 | M07 | textiles | silk | 30920.00 | Luxurious silk fabric | S07 |
| 8 | M08 | textiles | polyester | 80000.00 | Durable synthetic fabrics | S08 |
| 9 | M09 | metals | stainless steel | 10000.00 | Durable stainless steel material | S09 |

Total rows: 29 of 29 Query complete 00:00:00.148 Ln 7, Col 24

Number of tuples = 29

10. select * from material_projects

Software Requirements Specification for Interior Design Database Management System

The screenshot shows the pgAdmin 4 interface. The top bar includes tabs for Dashboard, Properties, SQL, Statistics, Dependencies, Dependents, Processes, and the current connection ID_DB/postgres@PostgreSQL 15+. The main area has a toolbar with various icons for file operations, search, and database management. Below the toolbar is a dropdown menu set to 'ID_DB/postgres@PostgreSQL 15'. The interface is divided into two panes: 'Query' on the left and 'Scratch Pad' on the right. The 'Query' pane contains the following SQL code:

```
1: INSERT INTO material_project (material_id, project_id) VALUES
2: ('M11', 'P11'),
3: ('M02', 'P118'),
4: ('M13', 'P125'),
5: ('M12', 'P36'),
6: ('M08', 'P96'),
7: ('M18', 'P30'),
8: ('M21', 'P73'),
9: ('M01', 'P101'),
10: ('M21', 'P100');
11: select * from material_projects;
```

The 'Data Output' tab is selected in the bottom navigation bar. It displays the results of the last query in a grid format:

| | material_id | project_id |
|----|-------------|------------|
| 1. | M11 | P11 |
| 2. | M02 | P118 |
| 3. | M13 | P125 |
| 4. | M12 | P36 |
| 5. | M08 | P96 |
| 6. | M18 | P30 |
| 7. | M21 | P73 |
| 8. | M01 | P101 |
| 9. | M21 | P100 |

Below the table, the status bar shows 'Total rows: 1000 of 1050' and 'Query complete 00:00:00.062'. The bottom right corner of the data output pane indicates 'Ln 11, Col 33'.

Number of tuples = 1050

11. select * from client_preferences

Software Requirements Specification for Interior Design Database Management System

The screenshot shows the pgAdmin 4 interface. At the top, there's a navigation bar with links for Dashboard, Properties, SQL, Statistics, Dependencies, Dependents, Processes, and a connection tab labeled "ID_DB/postgres@PostgreSQL 15". Below the navigation bar is a toolbar with various icons for database management tasks. The main area is divided into two panes: "Query" and "Scratch Pad". The "Query" pane contains a SQL script:

```
1 INSERT INTO client_preference (client_id, style_preference, color_preference, material,
2 ('C01', 'Contemporary', 'Metallic', 'Metal', 'Tile'),
3 ('C02', 'Minimalist', 'Bold', 'Wood', 'Carpet'),
4 ('C03', 'Traditional', 'Pastel', 'Stone', 'Hardwood'),
5 ('C04', 'Modern', 'Neutral', 'Glass', 'Laminate'),
6 ('C05', 'Modern', 'Metallic', 'Wood', 'Carpet');
7 select * from client_preferences;
```

The "Data Output" pane below displays the results of the query as a table:

| client_id | style_preference | color_preference | material_preference | floor_preference |
|-----------|------------------|------------------|---------------------|------------------|
| 1 C01 | Contemporary | Metallic | Metal | Tile |
| 2 C02 | Minimalist | Bold | Wood | Carpet |
| 3 C03 | Traditional | Pastel | Stone | Hardwood |
| 4 C04 | Modern | Neutral | Glass | Laminate |
| 5 C05 | Modern | Metallic | Wood | Carpet |
| 6 C06 | Rustic | EARTHY | Metal | Tile |
| 7 C07 | Traditional | BOLD | Metal | Carpet |
| 8 C08 | Contemporary | PASTEL | Stone | Laminate |
| 9 C09 | Modern | PASTEL | Stone | Hardwood |

At the bottom of the Data Output pane, it says "Total rows: 100 of 100" and "Query complete 00:00:00.106". To the right, it shows "Ln 7, Col 34".

Number of tuples =100

12. select * from project_manager_contact

Software Requirements Specification for Interior Design Database Management System

The screenshot shows the pgAdmin III interface. At the top, there's a menu bar with 'Dashboard', 'Properties', 'SQL', 'Statistics', 'Dependencies', 'Dependents', 'Processes', and a connection tab labeled 'ID_DB/postgres@PostgreSQL 15'. Below the menu is a toolbar with various icons for database management. The main area has tabs for 'Query' (which is selected) and 'Query History'. A scratch pad tab is also visible. The 'Query' tab contains the following SQL code:

```
1 INSERT INTO project_manager_contact (project_manager_id, contact_number) VALUES
2 ('PM01', '8064996712'),
3 ('PM01', '7389802016'),
4 ('PM02', '8171737369'),
5 ('PM02', '8492402844'),
6 ('PM03', '9353646668');
7 select * from project_manager_contact;
```

Below the code, the 'Data Output' tab is selected, showing a table with two columns: 'project_manager_id' and 'contact_number'. The data is as follows:

| project_manager_id | contact_number |
|--------------------|----------------|
| PM01 | 8064996712 |
| PM01 | 7389802016 |
| PM02 | 8171737369 |
| PM02 | 8492402844 |
| PM03 | 9353646668 |
| PM03 | 9839383803 |
| PM04 | 9701796129 |
| PM04 | 7605148167 |
| PM05 | 7224265048 |

At the bottom of the data output window, it says 'Total rows: 175 of 175' and 'Query complete 00:00:00.070'. To the right, it says 'Ln 7, Col 39'.

Number of tuples =175

13. select * from supplier_contact

Software Requirements Specification for Interior Design Database Management System

The screenshot shows the pgAdmin 4 interface. The top bar includes tabs for Dashboard, Properties, SQL, Statistics, Dependencies, Dependents, Processes, and the current connection ID_DB/postgres@PostgreSQL 15+. The main window has two panes: 'Query' on the left containing the SQL code, and 'Scratch Pad' on the right which is currently empty. Below the Query pane is a toolbar with various icons. The bottom section is titled 'Data Output' and displays a table of data from the 'supplier_contact' table. The table has two columns: 'supplier_id' and 'contact_number'. The data consists of 130 rows, each with a unique supplier ID and its corresponding contact number. The total row count is 130 of 130, and the query was completed at 00:00:00.062. The status bar at the bottom right indicates 'Ln 7, Col 32'.

```
1 INSERT INTO supplier_contact (supplier_id, contact_number) VALUES
2 ('S01', '7548657142'),
3 ('S02', '9591685790'),
4 ('S02', '7316193841'),
5 ('S03', '7411996347'),
6 ('S04', '8617260380');
7 select * from supplier_contact;
```

| supplier_id | contact_number |
|-------------|----------------|
| S01 | 7548657142 |
| S02 | 9591685790 |
| S02 | 7316193841 |
| S03 | 7411996347 |
| S04 | 8617260380 |
| S04 | 7176034028 |
| S05 | 9281825222 |
| S05 | 7976216141 |
| S06 | 9742097082 |
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Number of tuples =130

14. select * from designer_contact

Software Requirements Specification for Interior Design Database Management System

The screenshot shows the pgAdmin III interface. The top window is a query editor with the title bar "ID_DB/postgres@PostgreSQL_15*". It contains a toolbar with various icons for database management. Below the toolbar is a dropdown menu showing "ID_DB/postgres@PostgreSQL_15" and a "No limit" setting. The main area of the query window shows a SQL script:

```
1 INSERT INTO designer_contact (designer_id, contact_number) VALUES
2 ('D01', '8647774887'),
3 ('D01', '8459726286'),
4 ('D02', '8870642381'),
5 ('D02', '9611387620'),
6 ('D02', '9709221261');
7 select * from designer_contact;
```

The bottom window is a "Data Output" viewer titled "Messages". It displays a table with two columns: "designer_id" and "contact_number". The table has 9 rows of data:

| | designer_id | contact_number |
|---|-------------|----------------|
| 1 | D01 | 8647774887 |
| 2 | D01 | 8459726286 |
| 3 | D02 | 8870642381 |
| 4 | D02 | 9611387620 |
| 5 | D02 | 9709221261 |
| 6 | D03 | 8984136316 |
| 7 | D03 | 7735783970 |
| 8 | D04 | 7717744182 |
| 9 | D04 | 7527158633 |

Below the table, the status bar shows "Total rows: 193 of 193" and "Query complete 00:00:00.119".

Number of tuples =193

15. select * from client_contact

Software Requirements Specification for Interior Design Database Management System

The screenshot shows the pgAdmin 4 interface. The top bar includes tabs for Dashboard, Properties, SQL, Statistics, Dependencies, Dependents, Processes, and the current connection ID_DB/postgres@PostgreSQL 15*. Below the top bar is a toolbar with various icons for database management. The main area has two panes: the left pane is titled 'Query' and contains a SQL script, and the right pane is titled 'Scratch Pad'. The SQL script in the Query pane is:

```
1 INSERT INTO client_contact (client_id, contact_number) VALUES
2 ('C01', '9318285864'),
3 ('C01', '7251845763'),
4 ('C01', '9861062264'),
5 ('C02', '7986100485'),
6 ('C02', '7380319223');
7 select * from client_contact;
```

The Data Output pane below shows the results of the query:

| | client_id | contact_number |
|---|-----------|----------------|
| 1 | C01 | 9318285864 |
| 2 | C01 | 7251845763 |
| 3 | C01 | 9861062264 |
| 4 | C02 | 7986100485 |
| 5 | C02 | 7380319223 |
| 6 | C03 | 7161823203 |
| 7 | C03 | 8431241578 |
| 8 | C03 | 9682252426 |
| 9 | C04 | 9888062940 |

Total rows: 210 of 210 Query complete 00:00:00.050 Ln 7, Col 30

Number of tuples =210

16. select * from task

Software Requirements Specification for Interior Design Database Management System

The screenshot shows the pgAdmin 4 interface. At the top, there's a navigation bar with links for Dashboard, Properties, SQL, Statistics, Dependencies, Dependents, Processes, and a connection tab labeled "ID_DB/postgres@PostgreSQL 15+". Below the navigation bar is a toolbar with various icons for database management tasks. The main area has two tabs: "Query" (which is selected) and "Query History". The "Query" tab contains the following SQL code:

```
1 INSERT INTO task (task_id, task_description, task_deadline, task_status, project_id) VA
2 ('T01', 'Handle regulatory compliance.', '2017-07-22', 'Completed', 'P26'),
3 ('T02', 'Update product packaging.', '2018-05-22', 'Completed', 'P138'),
4 ('T03', 'Set up trade shows.', '2017-03-25', 'Completed', 'P107'),
5 ('T04', 'Maintain production equipment.', '2017-08-01', 'Completed', 'P64'),
6 ('T05', 'Optimize warehouse layout.', '2022-05-29', 'In Progress', 'P26');
7 select * from task;
```

Below the code, there's a "Data Output" section which displays the results of the query as a table:

| task_id | task_description | task_deadline | task_status | project_id |
|---------|--------------------------------|---------------|-------------|------------|
| 1 | Handle regulatory compliance. | 2017-07-22 | Completed | P26 |
| 2 | Update product packaging. | 2018-05-22 | Completed | P138 |
| 3 | Set up trade shows. | 2017-03-25 | Completed | P107 |
| 4 | Maintain production equipment. | 2017-08-01 | Completed | P64 |
| 5 | Optimize warehouse layout. | 2022-05-29 | In Progress | P26 |
| 6 | Analyze sales strategies. | 2018-04-26 | Completed | P21 |
| 7 | Set up pay-per-click ads. | 2017-01-14 | Completed | P105 |
| 8 | Update product listings. | 2023-07-30 | In Progress | P73 |
| 9 | Develop sales training. | 2024-01-16 | In Progress | P57 |

At the bottom of the Data Output section, it says "Total rows: 450 of 450 Query complete 00:00:00.064". On the right side of the interface, there's a status bar with "Ln 7, Col 20".

Number of tuples =450

SQL Queries:

1. Find the client with the highest budget.

```
select * from client  
order by client_budget desc  
limit 1
```

Software Requirements Specification for Interior Design Database Management System

Query Query History 

```
1 set search_path = id_db;
2 select * from client
3 order by client_budget desc
4 limit 1
5
```

Data Output Messages Notifications 

| | client_id [PK] character varying (5) | client_name character varying (50) | client_budget numeric (11,2) | client_address text | client_email character varying (100) |
|---|---|---------------------------------------|---------------------------------|-----------------------------------|---|
| 1 | C31 | Ankit Mathur | 94700000.00 | 123, Green Avenue, Anand, Gujarat | ankit.mathur_2345@gmail.com |

Total rows: 1 of 1 Query complete 00:00:00.108 Ln 4, Col 8

2. Retrieve information for a specific client.

```
SELECT * FROM Client WHERE client_id = 'C34';
```

Software Requirements Specification for Interior Design Database Management System

The screenshot shows the pgAdmin 4 interface for PostgreSQL 15. The top bar includes tabs for Dashboard, Properties, SQL, Statistics, Dependencies, Dependents, Processes, and the current connection tab, which is ID_DB/postgres@PostgreSQL 15. Below the tabs is a toolbar with various icons for database management. The main area has two tabs: 'Query' and 'Query History', with 'Query' selected. A query window contains the following SQL code:

```
1 SELECT * FROM Client WHERE client_id = 'C34';  
2
```

Below the query window is a 'Data Output' tab, which displays the results of the query in a table format:

| | client_id | client_name | client_budget | client_address | client_email |
|---|-----------|--------------|---------------|------------------------------------|----------------------------------|
| 1 | C34 | Divya Khatri | 8200000.00 | 321, Jasmine Park, Modasa, Gujarat | divya.khatri_5678@rocketmail.com |

At the bottom of the interface, status messages indicate "Total rows: 1 of 1" and "Query complete 00:00:00.054".

3. List the names and email addresses of clients with budgets over 1000000.

```
select client_name, client_address, client_budget from client  
where client_budget > 1000000
```

Software Requirements Specification for Interior Design Database Management System

The screenshot shows the pgAdmin 4 interface. At the top, there's a navigation bar with links like Dashboard, Properties, SQL, Statistics, Dependencies, Dependents, Processes, and a connection tab labeled ID_DB/postgres@PostgreSQL 15*. Below the navigation bar is a toolbar with various icons for database management tasks. The main area is divided into two tabs: 'Query' and 'Query History'. The 'Query' tab contains the following SQL code:

```
1 select client_name, client_address, client_budget from client
2 where client_budget > 1000000;
3
```

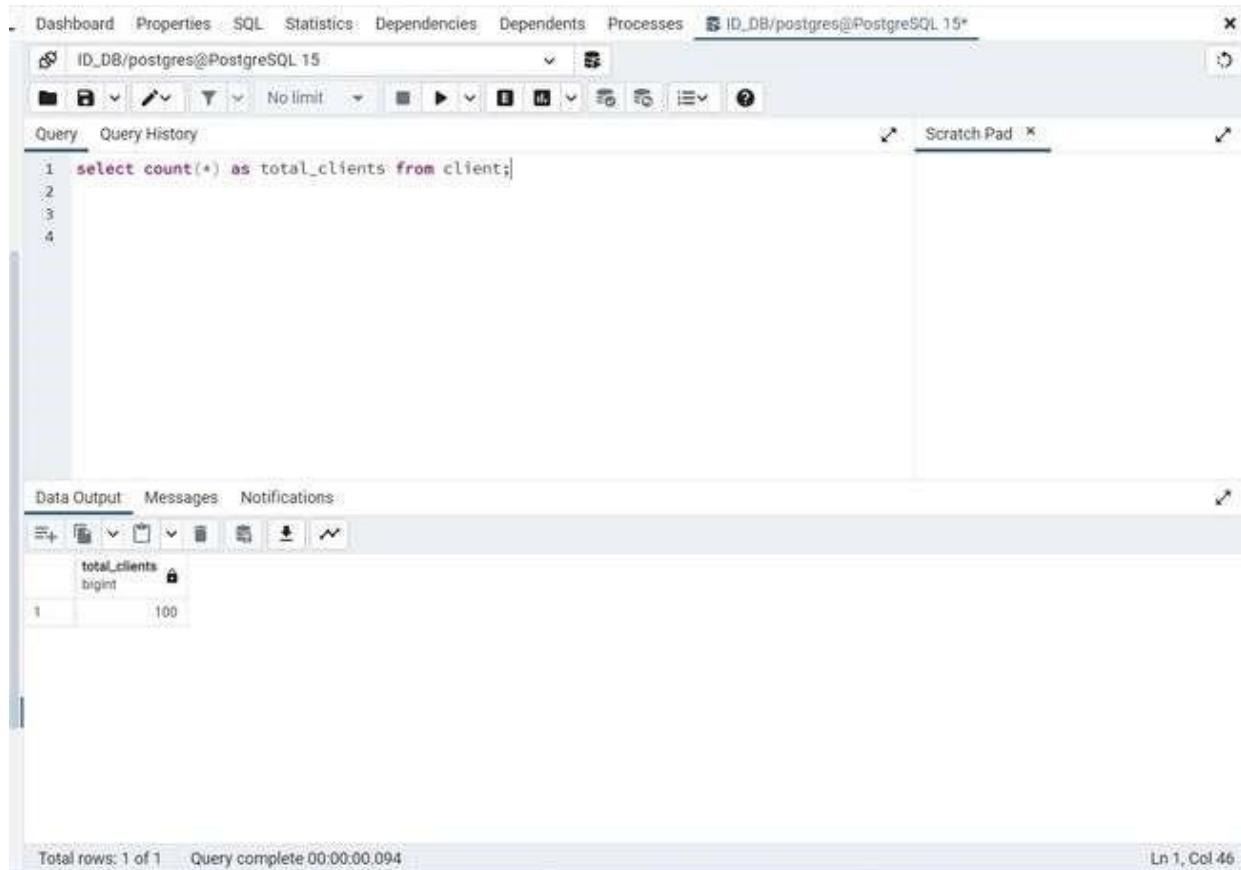
Below the code, the 'Data Output' tab is selected, showing a table with three columns: client_name, client_address, and client_budget. The data consists of 9 rows, each representing a client entry. The last row of the table shows a summary message: 'Total rows: 71 of 71 Query complete 00:00:00.060'. The status bar at the bottom right indicates 'Ln 3, Col 1'.

| | client_name | client_address | client_budget |
|---|-------------------|---------------------------------------|---------------|
| 1 | Aarav Sharma | 123, Green Avenue, Ahmedabad, Gujarat | 5450000.00 |
| 2 | Rohan Kapoor | 789, Silver Street, Vadodara, Gujarat | 12350000.00 |
| 3 | Priya Singh | 321, Rose Garden, Rajkot, Gujarat | 3200000.00 |
| 4 | Naina Reddy | 234, Lotus Colony, Bhavnagar, Gujarat | 42500000.00 |
| 5 | Sameer Verma | 890, Emerald Lane, Jamnagar, Gujarat | 8750000.00 |
| 6 | Siddharth Chauhan | 12, Ruby Street, Anand, Gujarat | 15600000.00 |
| 7 | Rishi Khanna | 345, Amber Road, Mehsana, Gujarat | 72800000.00 |
| 8 | Pooja Tiwari | 876, Orchid Avenue, Valsad, Gujarat | 4150000.00 |
| 9 | Shruti Sharma | 789, Silver Street, Nadiad, Gujarat | 36500000.00 |

4. Retrieve the total number of clients.

```
select count(*) as total_clients from client
```

Software Requirements Specification for Interior Design Database Management System



The screenshot shows the pgAdmin 4 interface. At the top, there's a navigation bar with links for Dashboard, Properties, SQL, Statistics, Dependencies, Dependents, Processes, and a connection tab labeled "ID_DB/postgres@PostgreSQL 15". Below the navigation bar is a toolbar with various icons for database management tasks. The main area is divided into two panes: "Query" on the left and "Scratch Pad" on the right. The "Query" pane contains the following SQL code:

```
1 select count(*) as total_clients from client;
```

The "Data Output" pane below the queries shows the results of the executed query:

| | total_clients | bigint |
|---|---------------|--------|
| 1 | 100 | |

At the bottom of the interface, status messages indicate "Total rows: 1 of 1" and "Query complete: 00:00:00.094".

5. Retrieve all clients sorted by their budgets in descending order.

```
SELECT * FROM Client ORDER BY client_budget DESC;
```

Software Requirements Specification for Interior Design Database Management System

The screenshot shows the pgAdmin 4 interface. At the top, there's a navigation bar with links for Dashboard, Properties, SQL, Statistics, Dependencies, Dependents, Processes, and a connection tab labeled 'ID_DB/postgres@PostgreSQL 15+'. Below the navigation bar is a toolbar with various icons for database management tasks. The main area is divided into two panes: 'Query' on the left and 'Scratch Pad' on the right. The 'Query' pane contains the SQL query: 'SELECT * FROM Client ORDER BY client_budget DESC;'. The 'Scratch Pad' pane is currently empty. Below the query pane, there are tabs for Data Output, Messages, and Notifications. The 'Data Output' tab is selected, displaying a table of client data. The table has columns: client_id, client_name, client_budget, client_address, and client_email. The data shows 100 rows of client information, ordered by budget in descending order. The last row of the table is highlighted. At the bottom of the data output pane, it says 'Total rows: 100 of 100 Query complete 00:00:00.129' and 'Ln 2, Col 1'.

| | client_id [PK] character varying (5) | client_name character varying (50) | client_budget numeric (11,2) | client_address text | client_email character varying (100) |
|---|---|---------------------------------------|---------------------------------|--------------------------------------|---|
| 1 | C31 | Ankit Mathur | 94700000.00 | 123, Green Avenue, Anand, Gujarat | ankit.mathur_2345@gmail.com |
| 2 | C71 | Rajan Reddy | 92100000.00 | 456, Orchid Avenue, Amreli, Gujarat | rajan.reddy_2345@gmail.com |
| 3 | C51 | Rahul Khurana | 76200000.00 | 890, Rose Garden, Jamnagar, Gujarat | rahul.khurana_2345@gmail.com |
| 4 | C91 | Vikrant Kumar | 72900000.00 | 456, Mangold Lane, Patan, Gujarat | vikrant.kumar_6789@icloud.com |
| 5 | C11 | Rishi Khanna | 72800000.00 | 345, Amber Road, Mehsana, Gujarat | rishi.khanna_2345@gmail.com |
| 6 | C37 | Rishi Malhotra | 68900000.00 | 876, Merigold Lane, Lathi, Gujarat | rishi.malhotra_6789@yahoo.com |
| 7 | C77 | Sunil Raghavan | 64300000.00 | 456, Tulsi Negar, Porbendar, Gujarat | sunil.raghavan_6789@mail.com |
| 8 | C25 | Karthik Raghavan | 60750000.00 | 567, Lotus Colony, Palitana, Gujarat | karthik.raghavan_9012@mail.com |
| 9 | C53 | Aryan Kapoor | 57800000.00 | 12, Ruby Street, Anand, Gujarat | aryan.kapoor_1234@yahoo.com |

6. Retrieve clients located in a specific city.

```
SELECT * FROM Client WHERE client_address LIKE '%Ahmedabad%';
```

Software Requirements Specification for Interior Design Database Management System

The screenshot shows the pgAdmin 4 interface. At the top, there's a navigation bar with tabs: Dashboard, Properties, SQL, Statistics, Dependencies, Dependents, Processes, and one currently active labeled "ID_DB/postgres@PostgreSQL 15". Below the navigation bar is a toolbar with various icons for database management tasks. The main area is divided into two panes: "Query" on the left and "Scratch Pad" on the right. The "Query" pane contains the following SQL code:

```
1 SELECT * FROM Client WHERE client_address LIKE '%Ahmedabad%';
2
```

The "Data Output" tab is selected at the bottom, showing the results of the query in a grid format. The columns are: client_id, client_name, client_budget, client_address, and client_email. There is one row of data:

| | client_id | client_name | client_budget | client_address | client_email |
|---|-----------|--------------|---------------|---------------------------------------|-----------------------------|
| 1 | C01 | Aarav Sharma | \$450000.00 | 123, Green Avenue, Ahmedabad, Gujarat | aarav.sharma_1234@gmail.com |

At the bottom of the interface, status messages are displayed: "Total rows: 1 of 1" and "Query complete 00:00:00.053".

7. Calculate the sum of budgets of all clients.

```
SELECT SUM(client_budget) AS total_budget FROM Client;
```

Software Requirements Specification for Interior Design Database Management System

The screenshot shows the pgAdmin 4 interface. At the top, there's a menu bar with options like Dashboard, Properties, SQL, Statistics, Dependencies, Dependents, Processes, and a connection tab labeled 'ID_DB/postgres@PostgreSQL 15*'. Below the menu is a toolbar with various icons for database management tasks. The main area has tabs for 'Query' and 'Query History', with 'Query' currently selected. A scratch pad tab is also visible. The query editor contains the following SQL code:

```
1 SELECT SUM(client_budget) AS total_budget FROM Client;
```

Below the query editor is a 'Data Output' tab which displays the results of the query:

| total_budget |
|-----------------|
| numeric |
| 1 1627070000.00 |

At the bottom of the interface, status messages indicate 'Total rows: 1 of 1' and 'Query complete 00:00:00.121'.

8. Retrieve clients whose email addresses have a specific domain.

```
SELECT * FROM Client WHERE client_email LIKE  
'% @gmail.com';
```

Software Requirements Specification for Interior Design Database Management System

The screenshot shows the pgAdmin 4 interface. At the top, there's a navigation bar with links for Dashboard, Properties, SQL, Statistics, Dependencies, Dependents, Processes, and a connection tab labeled 'ID_DB/postgres@PostgreSQL 15+'. Below the navigation bar is a toolbar with various icons for database management tasks. The main area is divided into two panes: 'Query' on the left and 'Scratch Pad' on the right. The 'Query' pane contains the following SQL code:

```
1 SELECT * FROM Client WHERE client_email LIKE '%@gmail.com';
2
```

The 'Data Output' pane below displays the results of the query, showing 11 rows of client data:

| client_id | client_name | client_budget | client_address | client_email |
|-----------|-----------------|---------------|--|--------------------------------|
| C01 | Aarav Sharma | 5450000.00 | 123, Green Avenue, Ahmedabad, Gujarat | aarav.sharma_1234@gmail.com |
| C11 | Rishi Khanna | 7280000.00 | 345, Amber Road, Mehsana, Gujarat | rishi.khanna_2345@gmail.com |
| C21 | Abhinav Nair | 2600000.00 | 987, Rose Garden, Surendranagar, Gujarat | abhinav.nair_2345@gmail.com |
| C31 | Ankit Mathur | 9470000.00 | 123, Green Avenue, Anand, Gujarat | ankit.mathur_2345@gmail.com |
| C35 | Pranav Saxena | 420000.00 | 789, Lotus Colony, Veraval, Gujarat | pranav.saxena_9012@gmail.com |
| C42 | Nandini Chauhan | 12900000.00 | 987, Sunflower Road, Mundra, Gujarat | nandini.chauhan_6789@gmail.com |
| C51 | Rahul Kharana | 7620000.00 | 890, Rose Garden, Jamnagar, Gujarat | rahul.kharana_2345@gmail.com |
| C61 | Vivek Malhotra | 950000.00 | 678, Sunflower Road, Gandhidham, Gujarat | vivek.malhotra_2345@gmail.com |
| C71 | Rajan Reddy | 9210000.00 | 456, Orchid Avenue, Amreli, Gujarat | rajan.reddy_2345@gmail.com |

Total rows: 11 of 11 Query complete 00:00:00.048 Ln 2, Col 1

9. Retrieve clients with budgets within a specified range.

```
SELECT * FROM Client WHERE client_budget BETWEEN 1000000 AND 5000000;
```

Software Requirements Specification for Interior Design Database Management System

The screenshot shows the pgAdmin 4 interface. At the top, there's a navigation bar with links like Dashboard, Properties, SQL, Statistics, Dependencies, Dependents, Processes, and a connection tab labeled ID_DB/postgres@PostgreSQL 15+. Below the navigation bar is a toolbar with various icons for database management tasks. The main area is divided into two tabs: 'Query' (which is active) and 'Scratch Pad'. The 'Query' tab contains the following SQL code:

```
1 SELECT * FROM Client WHERE client_budget BETWEEN 1000000 AND 5000000;
```

Below the code, the 'Data Output' tab is selected, showing a table with 11 rows of data. The columns are: client_id, client_name, client_budget, client_address, and client_email. The data is as follows:

| | client_id | client_name | client_budget | client_address | client_email |
|----|-----------|----------------|---------------|--|----------------------------------|
| 1. | C04 | Priya Singh | 3200000.00 | 321, Rose Garden, Rajkot, Gujarat | priya.singh_3456@outlook.com |
| 2. | C12 | Pooja Tiwari | 4150000.00 | 876, Orchid Avenue, Valsad, Gujarat | pooja.tiwari_6789@hotmail.com |
| 3. | C21 | Abhinav Nair | 2600000.00 | 987, Rose Garden, Surendranagar, Gujarat | abhinav.nair_2345@gmail.com |
| 4. | C24 | Anjali Sharma | 3900000.00 | 123, Jasmine Park, Patan, Gujarat | anjali.sharma_5678@outlook.co... |
| 5. | C36 | Tara Bajaj | 2750000.00 | 234, Sapphire Road, Wadhwan, Gujarat | tara.bajaj_2345@hotmail.com |
| 6. | C45 | Rohit Kapoor | 2100000.00 | 789, Orchid Avenue, Palanpur, Gujarat | rohit.kapoor_9012@yahoo.com |
| 7. | C50 | Aaradhya Gupta | 4300000.00 | 234, Tulsi Nagar, Rajkot, Gujarat | aaradhya.gupta_9012@mail.com |
| 8. | C58 | Neha Sharma | 2950000.00 | 789, Silver Street, Nadia, Gujarat | neha.sharma_1234@gmail.com |
| 9. | C64 | Aditi Agarwal | 3500000.00 | 234, Tulsi Nagar, Anjar, Gujarat | aditi.agarwal_5678@outlook.com |

At the bottom left of the data output area, it says 'Total rows: 11 of 11'. At the bottom right, it says 'Query complete 00:00:00.089' and 'Ln 2, Col 1'.

10. Get a count of clients in each unique location.

```
SELECT client_address, COUNT(*) AS  
client_countFROM Client  
GROUP BY client_address;
```

Software Requirements Specification for Interior Design Database Management System

The screenshot shows the pgAdmin 4 interface. At the top, there's a navigation bar with links for Dashboard, Properties, SQL, Statistics, Dependencies, Dependents, Processes, and a connection tab labeled 'ID_DB/postgres@PostgreSQL 15*'. Below the navigation bar is a toolbar with various icons for database management tasks. The main area has two tabs: 'Query' (which is selected) and 'Query History'. The 'Query' tab contains the following SQL code:

```
1 SELECT client_address, COUNT(*) AS client_count
2 FROM Client
3 GROUP BY client_address;
4
```

Below the code, the 'Data Output' tab is active, displaying the results of the query in a grid format. The columns are 'client_address' (text type) and 'client_count' (bigint type). The data shows 52 rows, with most entries having a count of 2, except for one entry with a count of 3. The results are as follows:

| | client_address | client_count |
|---|---------------------------------------|--------------|
| 1 | 456, Emerald Lane, Junagadh, Gujarat | 2 |
| 2 | 567, Silver Street, Mahesana, Gujarat | 2 |
| 3 | 123, Green Avenue, Bhuj, Gujarat | 2 |
| 4 | 789, Silver Street, Nadiad, Gujarat | 2 |
| 5 | 567, Lotus Colony, Palitana, Gujarat | 2 |
| 6 | 234, Topaz Lane, Bhuj, Gujarat | 2 |
| 7 | 12, Amber Road, Gondal, Gujarat | 2 |
| 8 | 345, Pearl Street, Keshod, Gujarat | 2 |
| 9 | 12, Ruby Street, Anand, Gujarat | 3 |

Total rows: 52 of 52 Query complete 00:00:00.051 Ln 4, Col 1

11. Retrieve clients with names longer than 13 characters.

```
SELECT * FROM Client WHERE LENGTH(client_name) > 13;
```

Software Requirements Specification for Interior Design Database Management System

The screenshot shows the pgAdmin 4 interface. At the top, there's a navigation bar with links: Dashboard, Properties, SQL, Statistics, Dependencies, Dependents, Processes, and a connection tab labeled ID_DB/postgres@PostgreSQL 15*. Below the navigation bar is a toolbar with various icons for database management tasks. The main area has tabs for Query and Query History, with the Query tab currently selected. A scratch pad tab is also visible. The Query pane contains the following SQL code:

```
1 SELECT * FROM Client WHERE LENGTH(client_name) > 13;
```

Below the Query pane is a Data Output pane displaying the results of the query. The results are presented in a table with the following columns: client_id, client_name, client_budget, client_address, and client_email. The data consists of 21 rows, each representing a client record. The table includes column headers and row numbers (1 through 9). The last two rows of the table show "Total rows: 21 of 21" and "Query complete 00:00:00.057".

| | client_id | client_name | client_budget | client_address | client_email |
|---|-----------|-------------------|---------------|--|-------------------------------------|
| 1 | C09 | Siddharth Chauhan | 15600000.00 | 12, Ruby Street, Anand, Gujarat | siddharth.chauhan_5678@mail.com |
| 2 | C18 | Jyoti Malhotra | 7500000.00 | 321, Lotus Colony, Porbandar, Gujarat | jyoti.malhotra_1234@gmail.com |
| 3 | C25 | Karthik Raghavan | 60750000.00 | 567, Lotus Colony, Palitana, Gujarat | karthik.raghavan_9072@mail.com |
| 4 | C29 | Suresh Singhania | 18450000.00 | 234, Topaz Lane, Bhachau, Gujarat | suresh.singhania_5678@ymail.com |
| 5 | C32 | Anisha Choudhary | 9800000.00 | 567, Silver Street, Mahesana, Gujarat | anisha.choudhary_6789@outlook.co... |
| 6 | C37 | Rishi Malhotra | 68900000.00 | 876, Marigold Lane, Lathi, Gujarat | rishi.malhotra_6789@yahoo.com |
| 7 | C38 | Kritika Sharma | 7800000.00 | 345, Ruby Street, Umreth, Gujarat | kritika.sharma_1234@outlook.com |
| 8 | C42 | Nandini Chauhan | 12900000.00 | 987, Sunflower Road, Mundra, Gujarat | nandini.chauhan_6789@gmail.com |
| 9 | C48 | Niharika Joshi | 31500000.00 | 567, Sunflower Road, Gandhidham, Gujarat | niharika.joshi_1234@live.com |

12. Retrieve clients with budgets higher than the average budget of all clients.

```
SELECT * FROM Client  
WHERE client_budget > (SELECT AVG(client_budget) FROM Client);
```

Software Requirements Specification for Interior Design Database Management System

The screenshot shows the pgAdmin 4 interface. At the top, there's a menu bar with options like Dashboard, Properties, SQL, Statistics, Dependencies, Dependents, Processes, and a connection tab for 'ID_DB/postgres@PostgreSQL 15+'. Below the menu is a toolbar with various icons for database management. The main area has tabs for 'Query' (which is selected) and 'Query History'. A scratch pad tab is also visible. The 'Query' tab contains the following SQL code:

```
1 SELECT * FROM Client
2 WHERE client_budget > (SELECT AVG(client_budget) FROM Client);
3
```

Below the query, the 'Data Output' tab is selected, showing a table with the results of the query. The table has columns: client_id, client_name, client_budget, client_address, and client_email. The data is as follows:

| | client_id | client_name | client_budget | client_address | client_email |
|---|-----------|------------------|---------------|--|----------------------------------|
| 1 | C06 | Naina Reddy | 42500000.00 | 234, Lotus Colony, Bhavnagar, Gujarat | naina.reddy_2345@icloud.com |
| 2 | C11 | Rishi Khanna | 72800000.00 | 345, Amber Road, Mehsana, Gujarat | rishi.khanna_2345@gmail.com |
| 3 | C14 | Shruti Sharma | 36500000.00 | 789, Silver Street, Nadiad, Gujarat | shruti.sharma_5678@outlook.com |
| 4 | C16 | Ayesha Khan | 28900000.00 | 456, Marigold Lane, Palanpur, Gujarat | ayesha.khan_2345@icloud.com |
| 5 | C17 | Akshay Desai | 17300000.00 | 678, Sunflower Road, Gandhidham, Gujarat | akshay.desai_6789@live.com |
| 6 | C25 | Karthik Raghavan | 60750000.00 | 567, Lotus Colony, Palitana, Gujarat | karthik.raghavan_9012@mail.com |
| 7 | C29 | Suresh Singhania | 18450000.00 | 234, Topaz Lane, Bhachau, Gujarat | suresh.singhania_5678@gmail.com |
| 8 | C31 | Ankit Mathur | 94700000.00 | 123, Green Avenue, Anand, Gujarat | ankit.mathur_2345@gmail.com |
| 9 | C33 | Sanjay Joshi | 23600000.00 | 456, Tulsi Nagar, Porbandar, Gujarat | sanjay.joshi_1234@protonmail.com |

Total rows: 29 of 29 Query complete 00:00:00.056 Ln 3, Col 1

13. Retrieve clients whose budgets are close to the average budget of all clients (within a certain percentage).

```
SELECT * FROM Client
```

```
WHERE client_budget >= (SELECT AVG(client_budget) * 0.9 FROM Client) AND client_budget <= (SELECT AVG(client_budget) * 1.1 FROM Client);
```

Software Requirements Specification for Interior Design Database Management System

The screenshot shows the pgAdmin 4 interface. At the top, there's a menu bar with options like Dashboard, Properties, SQL, Statistics, Dependencies, Dependents, Processes, and a connection tab for 'ID_DB/postgres@PostgreSQL 15+'. Below the menu is a toolbar with various icons for database management. The main area has tabs for 'Query' (selected), 'Query History', and 'Scratch Pad'. The 'Query' tab contains the following SQL code:

```
1 SELECT * FROM Client
2 WHERE client_budget >= (SELECT AVG(client_budget) * 0.9 FROM Client)
3 AND client_budget <= (SELECT AVG(client_budget) * 1.1 FROM Client);
4
```

Below the code, there are tabs for 'Data Output', 'Messages', and 'Notifications'. The 'Data Output' tab displays a table with six rows of data:

| | client_id | client_name | client_budget | client_address | client_email |
|---|-----------|-------------------|---------------|--|---------------------------------|
| 1 | C09 | Siddharth Chauhan | 15600000.00 | 12, Ruby Street, Anand, Gujarat | siddharth.chauhan_5678@mail.com |
| 2 | C17 | Akshay Desai | 17300000.00 | 678, Sunflower Road, Gandhidham, Gujarat | akshay.desai_6789@live.com |
| 3 | C56 | Nisha Kapoor | 16200000.00 | 876, Orchid Avenue, Valsad, Gujarat | nisha.kapoor_2345@icloud.com |
| 4 | C67 | Akash Yadav | 15800000.00 | 543, Carnation Lane, Navsari, Gujarat | akash.yadav_6789@live.com |
| 5 | C90 | Pooja Mehta | 15300000.00 | 123, Green Avenue, Dwarka, Gujarat | pooja.mehta_2345@protonmail.com |
| 6 | C96 | Rekha Singh | 16500000.00 | 456, Emerald Lane, Junagadh, Gujarat | rekha.singh_2345@gmail.com |

At the bottom of the interface, there are status messages: 'Total rows: 6 of 6' and 'Query complete 00:00:00.124' on the left, and 'Ln 4, Col 1' on the right.

14. Retrieve clients who have projects with the oldest start dates.

```
SELECT C.* FROM Client C
JOIN Project P ON C.client_id = P.client_id
WHERE P.start_date = (SELECT MIN(start_date) FROM Project);
```

Software Requirements Specification for Interior Design Database Management System

The screenshot shows the pgAdmin 4 interface. At the top, there's a navigation bar with links for Dashboard, Properties, SQL, Statistics, Dependencies, Dependents, Processes, and a connection to ID_DB/postgres@PostgreSQL 15+. Below the navigation bar is a toolbar with various icons for database management tasks. The main area contains a query editor window titled 'ID_DB/postgres@PostgreSQL 15' and a scratch pad window. The query editor contains the following SQL code:

```
1 SELECT C.* FROM Client C
2 JOIN Project P ON C.client_id = P.client_id
3 WHERE P.start_date = (SELECT MIN(start_date) FROM Project);
4
```

Below the query editor is a data output grid. The columns are labeled: client_id [PK] character varying (5), client_name character varying (50), client_budget numeric (11,2), client_address text, and client_email character varying (100). There is one row of data:

| | client_id | client_name | client_budget | client_address | client_email |
|---|-----------|--------------|---------------|---------------------------------------|-----------------------------|
| 1 | C23 | Vikas Rajput | 480000.00 | 543, Carnation Lane, Navsari, Gujarat | vikas.rajput_1234@yahoo.com |

At the bottom of the interface, there are tabs for Data Output, Messages, and Notifications. The status bar at the bottom indicates 'Total rows: 1 of 1' and 'Query complete 00:00:00.056'. On the right side of the status bar, it says 'Ln 4, Col 1'.

15. Retrieve clients who have completed project.

```
select client_name, project_status from client c,project p
where c.client_id=p.client_id and p.project_status='Completed';
```

The screenshot shows the pgAdmin 4 interface. At the top, there's a navigation bar with links for Dashboard, Properties, SQL, Statistics, Dependencies, Dependents, Processes, and a connection tab labeled 'ID_DB/postgres@PostgreSQL 15+'. Below the navigation bar is a toolbar with various icons for database management tasks. The main area is divided into two tabs: 'Query' (which is active) and 'Query History'. The 'Query' tab contains the following SQL code:

```
1 select client_name, project_status from client c,project p
2 where c.client_id=p.client_id and p.project_status='Completed';
3
```

Below the code, the 'Data Output' tab is selected, showing a table with two columns: 'client_name' and 'project_status'. The data consists of nine rows, each containing a client name and a status of 'Completed'. The table has a header row with column names. At the bottom of the table, it says 'Total rows: 106 of 106'. The status bar at the bottom right indicates 'Query complete 00:00:00.046'.

16. Retrieve a list of clients along with the total budget of all their projects.

```
SELECT C.client_id, C.client_name, SUM(C.client_budget) AS total_project_budget
FROM Client C
JOIN Project P ON C.client_id = P.client_id
GROUP BY C.client_id, C.client_name;
```

Software Requirements Specification for Interior Design Database Management System

The screenshot shows the pgAdmin 4 interface. At the top, there's a navigation bar with links for Dashboard, Properties, SQL, Statistics, Dependencies, Dependents, Processes, and a connection to ID_DB/postgres@PostgreSQL 15+. Below the navigation bar is a toolbar with various icons for database management tasks. The main area is divided into two panes: 'Query' on the left and 'Scratch Pad' on the right. The 'Query' pane contains the following SQL code:

```
1 SELECT C.client_id, C.client_name, SUM(C.client_budget) AS total_project_budget
2 FROM Client C
3 JOIN Project P ON C.client_id = P.client_id
4 GROUP BY C.client_id, C.client_name;
5
```

The 'Data Output' tab is selected at the bottom, showing a table with three columns: client_id, client_name, and total_project_budget. The data consists of 100 rows, with the first few rows being:

| | client_id | client_name | total_project_budget |
|---|-----------|------------------|----------------------|
| 1 | C67 | Akash Yadav | 15800000.00 |
| 2 | C85 | Rohit Tiwari | 1900000.00 |
| 3 | C53 | Aryan Kapoor | 57800000.00 |
| 4 | C82 | Komal Joshi | 11900000.00 |
| 5 | C25 | Karthik Raghavan | 121500000.00 |
| 6 | C95 | Nitin Kapoor | 7700000.00 |
| 7 | C10 | Ananya Gupta | 440000.00 |
| 8 | C73 | Anil Kumar | 25600000.00 |
| 9 | C02 | Kavya Patel | 1740000.00 |

At the bottom of the output pane, it says 'Total rows: 100 of 100' and 'Query complete 00:00:00.053'. The status bar on the right indicates 'Ln 4, Col 37'.

17. Find the designer with the least salary.

```
select * from designer
order by designer_salary asc
limit 1
```

Software Requirements Specification for Interior Design Database Management System

The screenshot shows a database management interface with a query editor and a results viewer.

Query Editor:

```
1 set search_path = id_db;
2 select * from designer
3 order by designer_salary asc
4 limit 1
5
6
```

Data Output:

| | designer_id [PK] character varying (5) | designer_name character varying (50) | designer_experience character varying (10) | designer_email character varying (100) | designer_salary numeric (10,2) |
|---|---|---|---|---|-----------------------------------|
| 1 | D01 | Mohan Suri | 4 years | mohan.suri_1234@gmail.com | 625000.00 |

Total rows: 1 of 1 Query complete 00:00:00.129 Ln 6, Col 1

18. Calculate the average salary of all designers in the table.

```
SELECT AVG(designer_salary) AS average_salary FROM Designer;
```

Software Requirements Specification for Interior Design Database Management System

The screenshot shows the pgAdmin 4 interface. At the top, there's a navigation bar with links: Dashboard, Properties, SQL, Statistics, Dependencies, Dependents, Processes, and a connection status for 'ID_DB/postgres@PostgreSQL 15+'. Below the navigation bar is a toolbar with various icons for database management tasks. The main area is divided into two panes: 'Query' on the left and 'Scratch Pad' on the right. The 'Query' pane contains the following SQL code:

```
1 SELECT AVG(designer_salary) AS average_salary FROM Designer;
```

Below the query pane, there's a 'Data Output' tab which is currently selected. It displays the results of the query:

| | average_salary |
|---|-------------------|
| 1 | 964400.0000000000 |

At the bottom of the interface, there are status messages: 'Total rows: 1 of 1' and 'Query complete 00:00:00.058'. To the right, it says 'Ln 2, Col 1'.

19. Retrieve designers with exactly 5 years of experience.

```
SELECT * FROM Designer  
WHERE designer_experience = '5 years';
```

Software Requirements Specification for Interior Design Database Management System

The screenshot shows the pgAdmin 4 interface. At the top, there's a toolbar with various icons for database management. Below the toolbar, the connection information is displayed: "ID_DB/postgres@PostgreSQL 15". The main area is divided into two tabs: "Query" and "Query History", with "Query" currently selected. The query entered is:

```
1 SELECT * FROM Designer
2 WHERE designer_experience = '5 years';
3
```

Below the query, the "Data Output" tab is selected, showing the results of the query in a tabular format. The table has five columns: "designer_id", "designer_name", "designer_experience", "designer_email", and "designer_salary". There are two rows of data:

| | designer_id | designer_name | designer_experience | designer_email | designer_salary |
|---|-------------|----------------|---------------------|--------------------------------|-----------------|
| 1 | D02 | Anjali Kapoor | 5 years | anjali.kapoor_5678@hotmail.com | 675000.00 |
| 2 | D29 | Shashank Joshi | 5 years | shashank.joshi_9012@mail.com | 655000.00 |

At the bottom of the interface, status messages are shown: "Total rows: 2 of 2 Query complete 00:00:00.117" and "Ln 3, Col 1".

20. Identify designers with salaries other than 710,000.

```
SELECT * FROM Designer
WHERE designer_salary != 710000;
```

Software Requirements Specification for Interior Design Database Management System

The screenshot shows the pgAdmin 4 interface. At the top, there's a navigation bar with links like Dashboard, Properties, SQL, Statistics, Dependencies, Dependents, Processes, and a connection status bar showing "ID_DB/postgres@PostgreSQL 15". Below the navigation bar is a toolbar with various icons for database management tasks. The main area has two tabs: "Query" and "Query History", with "Query" currently selected. The query window contains the following SQL code:

```
1 SELECT * FROM Designer
2 WHERE designer_salary >= 700000;
3
```

Below the query window is a "Data Output" tab where the results of the query are displayed as a table. The table has five columns: designer_id, designer_name, designer_experience, designer_email, and designer_salary. The data consists of 10 rows, each representing a designer with their name containing 'An' and a salary above 700,000. The results are as follows:

| | designer_id | designer_name | designer_experience | designer_email | designer_salary |
|---|-------------|----------------|---------------------|---------------------------------|-----------------|
| 1 | D01 | Mohan Suri | 4 years | mohan.suri_1234@gmail.com | 625000.00 |
| 2 | D02 | Anjali Kapoor | 5 years | anjali.kapoor_5678@hotmail.com | 675000.00 |
| 3 | D04 | Nisha Malhotra | 7 years | nisha.malhotra_2345@outlook.com | 890000.00 |
| 4 | D05 | Vikram Iyer | 5 years | vikram.iyer_6789@protonmail.com | 735000.00 |
| 5 | D06 | Karishma Reddy | 7 years | karishma.reddy_1234@icloud.com | 845000.00 |
| 6 | D07 | Rohit Nair | 9 years | rohit.nair_5678@live.com | 975000.00 |
| 7 | D08 | Swati Mehra | 4 years | swati.mehra_9012@ymail.com | 640000.00 |
| 8 | D09 | Varun Chawla | 10 years | varun.chawla_2345@mail.com | 1015000.00 |
| 9 | D10 | Alka Baijal | 7 years | alka.baijal_6789@rocketmail.com | 820000.00 |

Total rows: 99 of 99 Query complete 00:00:00.113 Ln 3; Col 1

21. Find designers whose names contain the substring 'An' and have a salary over 700,000.

```
SELECT * FROM Designer
WHERE designer_name LIKE '%An%' AND designer_salary > 700000;
```

Software Requirements Specification for Interior Design Database Management System

The screenshot shows the pgAdmin 4 interface. At the top, there's a navigation bar with links for Dashboard, Properties, SQL, Statistics, Dependencies, Dependents, Processes, and a connection tab labeled "ID_DB/postgres@PostgreSQL 15". Below the navigation bar is a toolbar with various icons for database management tasks. The main area is divided into two panes: "Query" on the left and "Scratch Pad" on the right. The "Query" pane contains the following SQL code:

```
1 SELECT * FROM Designer
2 WHERE designer_name LIKE '%An%' AND designer_salary > 700000;
3
```

The "Data Output" pane below the queries displays the results of the executed SQL statement. The results are presented in a table with the following columns: designer_id, designer_name, designer_experience, designer_email, and designer_salary. The data is as follows:

| | designer_id | designer_name | designer_experience | designer_email | designer_salary |
|---|-------------|------------------|---------------------|-----------------------------------|-----------------|
| 1 | D38 | Anupama Vashisth | 9 years | anupama.vashisth_2345@gmail.com | 1020000.00 |
| 2 | D40 | Anjali Saxena | 8 years | anjali.saxena_1234@rocketmail.com | 870000.00 |
| 3 | D52 | Anjana Sareen | 7 years | anjana.sareen_9012@yahoo.com | 835000.00 |
| 4 | D84 | Anurag Sharma | 10 years | anurag.sharma_3456@outlook.com | 1145000.00 |
| 5 | D87 | Ankit Kapoor | 9 years | ankit.kapoor_6789@live.com | 1050000.00 |
| 6 | D91 | Anshul Bajaj | 11 years | anshul.bajaj_2345@gmail.com | 1450000.00 |

At the bottom of the Data Output pane, it says "Total rows: 6 of 6" and "Query complete 00:00:00.074". To the right, there's a status bar with "Ln 3, Col 1".

22. Find the project manager with the most salary

```
select * from project_manager
```

```
order by project_manager_salary desc
```

```
limit 1
```

Software Requirements Specification for Interior Design Database Management System

The screenshot shows a database management interface with a query editor and a results viewer.

Query Editor:

```
1 set search_path = id_db;
2 select * from project_manager
3 order by project_manager_salary desc
4 limit 1
5 |
```

Data Output:

| | project_manager_id [PK] character varying (5) | project_manager_name character varying (50) | project_manager_expertise character varying (10) | project_manager_email character varying (100) | project_manager_salary numeric (10,2) |
|---|--|--|---|--|--|
| 1 | PM66 | Ishika Kapoor | 11 years | ishika.kapoor_5678@hotmail.com | 1480000.00 |

Total rows: 1 of 1 Query complete 00:00:00.126 Ln 5, Col 1

23. Retrieve project managers with unique salary values.

```
SELECT DISTINCT project_manager_salary FROM Project_Manager;
```

Software Requirements Specification for Interior Design Database Management System

The screenshot shows the pgAdmin 4 interface. At the top, there's a toolbar with various icons for database management. Below the toolbar, the connection information is displayed: ID_DB/postgres@PostgreSQL 15*. The main area has two tabs: 'Query' (selected) and 'Query History'. In the 'Query' tab, the following SQL code is written:

```
1 SELECT DISTINCT project_manager_salary FROM Project_Manager;
```

Below the query window, the 'Data Output' tab is selected, showing the results of the query. The results are presented in a table with one column labeled 'project_manager_salary' and a type of 'numeric (10,2)'. The data consists of nine rows of salary values:

| | project_manager_salary |
|---|------------------------|
| 1 | 805000.00 |
| 2 | 1360000.00 |
| 3 | 1230000.00 |
| 4 | 960000.00 |
| 5 | 1470000.00 |
| 6 | 1080000.00 |
| 7 | 1140000.00 |
| 8 | 1380000.00 |
| 9 | 920000.00 |

At the bottom of the results pane, it says 'Total rows: 78 of 78' and 'Query complete 00:00:00.588'. There is also a note 'Ln 2, Col 1'.

24. Retrieve project managers with names starting with 'A' or 'B'.

```
SELECT * FROM Project_Manager  
WHERE project_manager_name LIKE 'A%' OR project_manager_name LIKE 'B%';
```

Software Requirements Specification for Interior Design Database Management System

The screenshot shows the pgAdmin 4 interface. At the top, there's a toolbar with various icons for database management. Below the toolbar, the title bar displays the connection information: ID_DB/postgres@PostgreSQL 15*. The main area is divided into two panes: the left pane is labeled 'Query' and contains the SQL code, while the right pane is labeled 'Scratch Pad'. The 'Query' pane contains the following SQL command:

```
1 SELECT DISTINCT project_manager_salary FROM Project_Manager;
```

The 'Data Output' tab is selected at the bottom, showing the results of the query. The results are presented in a table with one column labeled 'project_manager_salary' and a type of 'numeric (10,2)'. The data consists of nine rows of salary values:

| | project_manager_salary |
|---|------------------------|
| 1 | 805000.00 |
| 2 | 1360000.00 |
| 3 | 1230000.00 |
| 4 | 960000.00 |
| 5 | 1470000.00 |
| 6 | 1080000.00 |
| 7 | 1140000.00 |
| 8 | 1380000.00 |
| 9 | 920000.00 |

Below the table, the status bar indicates 'Total rows: 78 of 78' and 'Query complete 00:00:00.588'. The bottom right corner of the data output pane shows 'Ln 2, Col 1'.

25. Find the supplier with the most expensive materials.

```
select * from material,supplier  
where supplier.supplier_id = material.supplier_id  
order by material_cost desc  
limit 1
```

Software Requirements Specification for Interior Design Database Management System

The screenshot shows a database management interface with a query editor and a results viewer.

Query:

```
1 set search_path = id_db;
2 select * from material,supplier
3 where supplier.supplier_id = material.supplier_id
4 order by material_cost desc
5 limit 1
```

Data Output:

| | material_id | material_type | material_name | material_cost | material_description | supplier_id |
|---|-------------|---------------|---------------|---------------|-------------------------------------|-------------|
| 1 | M19 | glass | stained | 179000.00 | Stained glass with artistic designs | S19 |

Total rows: 1 of 1 Query complete 00:00:00.102 Ln 5, Col 8

26. Find the supplier with the least expensive materials.

```
select * from material,supplier
where supplier.supplier_id = material.supplier_id
order by material_cost
limit 1
```

Software Requirements Specification for Interior Design Database Management System

The screenshot shows a PostgreSQL query tool interface. At the top, there's a toolbar with icons for file operations like Open, Save, and Print. Below the toolbar, the 'Query' tab is selected, showing the following SQL code:

```
1 set search_path = id_db;
2 select * from material,supplier
3 where supplier.supplier_id = material.supplier_id
4 order by material_cost
5 limit 1
```

Below the code, the 'Data Output' tab is selected, displaying a table with the following data:

| | material_id | material_type | material_name | material_cost | material_description | supplier_id |
|----|-------------|---------------|---------------|---------------|-----------------------|-------------|
| 1. | M02 | wood | walnut | 8000.00 | Beautiful walnut wood | S02 |

At the bottom of the interface, status information is displayed: 'Total rows: 1 of 1' and 'Query complete 00:00:00.078'. To the right, it says 'Ln 4, Col 24'.

27. Find a supplier by name.

```
SELECT * FROM
Supplier
WHERE supplier_name = 'WoodCraft Interiors';
```

Software Requirements Specification for Interior Design Database Management System

The screenshot shows the pgAdmin 4 interface. At the top, there's a navigation bar with links like Dashboard, Properties, SQL, Statistics, Dependencies, Dependents, Processes, and a connection tab for 'ID_DB/postgres@PostgreSQL 15+'. Below the navigation bar is a toolbar with various icons for database management tasks. The main area is divided into two panes: 'Query' on the left and 'Scratch Pad' on the right. The 'Query' pane contains the following SQL code:

```
1 SELECT * FROM Supplier
2 WHERE supplier_name = 'WoodCraft Interiors';
3
```

The 'Data Output' pane below shows the results of the query:

| | supplier_id | supplier_name | website | supplier_address | supplier_email |
|---|-------------|---------------------|------------------------|---|---------------------------|
| 1 | S01 | WoodCraft Interiors | WoodCraftInteriors.com | WoodCraft Interiors - 123, Main Street, Ahmedabad, Gujarat, India - 3800... | woodcraft_interiors@gn... |

At the bottom of the interface, status messages indicate 'Total rows: 1 of 1' and 'Query complete 00:00:00.318'.

28. Retrieve suppliers with multiple contact numbers.

```
SELECT * FROM Supplier
WHERE supplier_id IN (
    SELECT supplier_id
    FROM
        Supplier_Contact
    GROUP BY supplier_id
    HAVING COUNT(*) >
        1
);
```

Software Requirements Specification for Interior Design Database Management System

The screenshot shows the pgAdmin 4 interface. At the top, there's a navigation bar with links for Dashboard, Properties, SQL, Statistics, Dependencies, Dependents, Processes, and a connection tab labeled 'ID_DB/postgres@PostgreSQL 15+'. Below the navigation bar is a toolbar with various icons for database management tasks.

The main area is divided into two panes. The left pane is titled 'Query' and contains the following SQL code:

```
1 SELECT * FROM Supplier
2 WHERE supplier_id IN (
3     SELECT supplier_id
4     FROM Supplier_Contact
5     GROUP BY supplier_id
6     HAVING COUNT(*) > 1
7 );
8
```

The right pane is titled 'Scratch Pad' and is currently empty.

Below the query pane, there are tabs for 'Data Output', 'Messages', and 'Notifications'. The 'Data Output' tab is selected and displays a table with the following data:

| | supplier_id | supplier_name | website | supplier_address |
|---|-------------|-------------------------|----------------------------|---|
| 1 | S02 | StoneSense Decor | StoneSenseDecor.com | StoneSense Decor - 456, Park Avenue, Surat, Gujarat, India - 395007 |
| 2 | S04 | GlassGenius Creations | GlassGeniusCreations.com | GlassGenius Creations - 234, Design Street, Rajkot, Gujarat, India - 360001 |
| 3 | S05 | Hardwood Haven | HardwoodHaven.com | Hardwood Haven - 567, Woodland Avenue, Gandhinagar, Gujarat, India - 382001 |
| 4 | S07 | TileTrends Studio | TileTrendsStudio.com | TileTrends Studio - 123, Ceramic Plaza, Jamnagar, Gujarat, India - 361001 |
| 5 | S08 | CarpetCouture Creations | CarpetCoutureCreations.com | CarpetCouture Creations - 456, Fabric Road, Anand, Gujarat, India - 388001 |
| 6 | S09 | TextileLuxe Supply | TextileLuxeSupply.com | TextileLuxe Supply - 789, Illumination Street, Mehsana, Gujarat, India - 384001 |
| 7 | S10 | ModernWood Masters | ModernWoodMasters.com | ModernWood Masters - 234, Craft Avenue, Junagadh, Gujarat, India - 362003 |
| 8 | S12 | MetalMajesty Interiors | MetalMajestyInteriors.com | MetalMajesty Interiors - 890, Metal Works, Bhuj, Gujarat, India - 370001 |

At the bottom of the interface, there are status messages: 'Total rows: 49 of 49' and 'Query complete 00:00:00.152' on the left, and 'Ln 8, Col 1' on the right.

29. Find the projects that are in progress.

select * from project

where project_status = 'Ongoing'

Software Requirements Specification for Interior Design Database Management System

Query Query History

```
1 set search_path = id_db;
2 select * from project
3 where project_status = 'Ongoing'
```

Data Output Messages Notifications

| | project_id [PK] | project_name | project_type | project_descr | project_locati | start_date | end_date | project_status | designer_id | project mana | client |
|---|-----------------|--------------|--------------|---------------|----------------|------------|------------|----------------|-------------|--------------|--------|
| 1 | P09 | Raj Palac... | Retail Store | Regal livi... | Bhuj | 2023-10-19 | 2024-04-19 | Ongoing | D94 | PM20 | C74 |
| 2 | P10 | Corporate... | Home | Business... | Godhra | 2024-01-31 | 2024-07-31 | Ongoing | D88 | PM32 | C58 |
| 3 | P19 | Lotus Blo... | Retail Store | Comfort ... | Porbandar | 2021-01-09 | 2021-07-09 | Ongoing | D26 | PM77 | C39 |
| 4 | P20 | Varanasi... | Restaura... | Silk treas... | Modasa | 2017-05-20 | 2017-11-20 | Ongoing | D81 | PM96 | C16 |
| 5 | P25 | Ayurvedic... | Office | Balancing... | Jamnagar | 2024-07-06 | 2025-01-06 | Ongoing | D55 | PM26 | C28 |
| 6 | P29 | Ayurveda ... | Entertain... | Education... | Nadiad | 2023-06-15 | 2023-12-15 | Ongoing | D12 | PM33 | C19 |

Total rows: 44 of 44 Query complete 00:00:00.115 Ln 3, Col 32

30. Retrieve projects that started in a particular year.

```
SELECT * FROM Project  
WHERE EXTRACT(YEAR FROM start_date) = 2020;
```

Software Requirements Specification for Interior Design Database Management System

The screenshot shows the pgAdmin 4 interface. At the top, there's a toolbar with various icons for database management. Below the toolbar, the title bar displays "ID_DB/postgres@PostgreSQL 15*". The main area has two tabs: "Query" (selected) and "Query History". The "Query" tab contains the following SQL code:

```
1 SELECT * FROM Project
2 WHERE EXTRACT(YEAR FROM start_date) = 2020;
3
```

Below the code, the "Data Output" tab is selected, showing a table with 12 rows of project data. The columns are: project_id, project_name, project_type, project_description, project_location, start_date, and end_date. The data includes various projects like "Taj Mahal Luxury Getaway", "TechPark Corporate Campus", and "IT Innovators Educational Institute".

| project_id | project_name | project_type | project_description | project_location | start_date | end_date |
|------------|-------------------------------------|----------------------------|-------------------------------|------------------|------------|------------|
| P04 | Taj Mahal Luxury Getaway | Entertainment Venue | Ultimate luxury near the T... | Bharuch | 2020-12-14 | 2021-06-14 |
| P12 | Taj Mahal Academy | Educational Facility | Learn at the Taj Mahal's d... | Bharuch | 2020-04-12 | 2020-10-12 |
| P18 | Tropical Paradise Beach Resort | Educational Facility | Paradise by the sea... | Botad | 2020-07-29 | 2021-01-29 |
| P26 | Mumbai Street Delights Café | Office | Taste Mumbai's vibrant c... | Jamnagar | 2020-02-27 | 2020-08-27 |
| P36 | Rajasthani Folk Entertainment V... | Restaurant/Cafe | Celebrating Rajasthan's f... | Godhra | 2020-07-21 | 2021-01-21 |
| P48 | TechPark Corporate Campus | Healthcare Facility | Dynamic corporate works... | Rajkot | 2020-01-20 | 2020-07-20 |
| P58 | Silicon Valley South Office Park | Office | Thriving tech hub in the S... | Bharuch | 2020-02-17 | 2020-08-17 |
| P61 | IT Innovators Educational Institute | Hotel or Hospitality Space | Nurturing tech innovators... | Dahod | 2020-09-29 | 2021-03-29 |

Total rows: 12 of 12 Query complete 00:00:00,129 Ln 3, Col 1

31. Retrieve projects of a specific type.

`SELECT * FROM Project`

`WHERE project_type = 'Home';`

Software Requirements Specification for Interior Design Database Management System

The screenshot shows the pgAdmin 4 interface. At the top, there's a toolbar with various icons for dashboard, properties, statistics, dependencies, dependents, processes, and connection details. Below the toolbar is a query editor window containing the following SQL code:

```
1 SELECT * FROM Project
2 WHERE project_type = 'Home';
3
```

Below the query editor is a data output grid displaying the results of the query. The columns are labeled: project_id, project_name, project_type, project_description, project_location, and start_date. The data is as follows:

| | project_id | project_name | project_type | project_description | project_location | start_date |
|---|------------|-----------------------------------|--------------|------------------------------------|------------------|------------|
| 1 | P02 | Saffron Heights Apartment Complex | Home | Luxury living with stunning views. | Junagadh | 2017- |
| 2 | P10 | Corporate Excellence Office Tower | Home | Business excellence hub. | Godhra | 2024- |
| 3 | P41 | Punjabi Spice Café | Home | Spicy delights from Punjab. | Portbandar | 2016- |
| 4 | P52 | Taj Mahal Suites & Spa | Home | Relax and rejuvenate in luxury. | Himatnagar | 2018- |
| 5 | P57 | Vedic Wisdom Educational Center | Home | Learning rooted in ancient wisdom. | Vapi | 2018- |
| 6 | P68 | Vibrant Home Haven | Home | A vibrant and cozy home. | Vapi | 2021- |
| 7 | P72 | InnovateIT Corporate Offices | Home | Innovation at its core. | Gandhidham | 2017- |
| 8 | P77 | Mystic Masala Theater | Home | Mystical cinematic experiences. | Modasa | 2018- |

At the bottom of the interface, it says "Total rows: 18 of 18" and "Query complete 00:00:00.324".

32. Retrieve projects that started within a particular date range.

```
SELECT * FROM Project
WHERE start_date BETWEEN '2021-01-01' AND '2022-12-31';
```

Software Requirements Specification for Interior Design Database Management System

The screenshot shows the pgAdmin 4 interface. At the top, there's a menu bar with options like Dashboard, Properties, SQL, Statistics, Dependencies, Dependents, Processes, and a connection tab labeled 'ID_DB/postgres@PostgreSQL 15+'. Below the menu is a toolbar with various icons for database management. The main area has tabs for 'Query' (which is selected) and 'Query History'. In the 'Query' tab, the following SQL code is written:

```
1 SELECT * FROM Project
2 WHERE start_date BETWEEN '2021-01-01' AND '2022-12-31';
3
```

Below the code, the results are displayed in a table format under the 'Data Output' tab. The table has columns for project_id, project_name, project_type, project_description, project_location, start_date, end_date, and project_status. The data includes 25 rows of project information.

| project_id | project_name | project_type | project_description | project_location | start_date | end_date | project_status |
|------------|---------------------------------|----------------------------|---------------------------------|------------------|------------|------------|----------------|
| P05 | Divine Bollywood Theater | Educational Facility | Bollywood magic on stage | Nadiad | 2022-07-10 | 2023-01-10 | Completed |
| P17 | Cafe Masala Delights | Restaurant/Cafe | Spices and flavors galore | Mehsana | 2022-08-25 | 2023-02-25 | Completed |
| P19 | Lotus Bloom Suites & Spa | Retail Store | Comfort and rejuvenation | Porbandar | 2021-01-09 | 2021-07-09 | Ongoing |
| P24 | Bollywood Magic Theater | Entertainment Venue | Enchanting cinematic experience | Gandhinagar | 2021-04-30 | 2021-10-30 | Completed |
| P32 | TechHub Office Complex | Office | Cutting-edge tech spaces | Anand | 2022-04-09 | 2022-10-09 | Completed |
| P34 | Rajasthan Artisan Bazaar | Hotel or Hospitality Space | Showcase of artisan tales | Navsari | 2021-11-06 | 2022-05-06 | Completed |
| P40 | Jaipur Cultural Heritage School | Educational Facility | Preserving Jaipur's culture | Gandhinagar | 2021-06-16 | 2021-12-16 | Completed |
| P47 | AyuVillage Wellness Center | Healthcare Facility | Holistic wellness haven | Bhuj | 2022-07-05 | 2023-01-05 | Completed |

Total rows: 25 of 25 Query complete 00:00:00.129 Ln 3, Col 1

33. Retrieve the project with the earliest start date.

```
SELECT * FROM Project
WHERE start_date = (SELECT MIN(start_date) FROM Project);
```

Software Requirements Specification for Interior Design Database Management System

The screenshot shows the pgAdmin 4 interface. At the top, there's a navigation bar with links for Dashboard, Properties, SQL, Statistics, Dependencies, Dependents, Processes, and a connection tab labeled 'ID_DB/postgres@PostgreSQL 15'. Below the navigation bar is a toolbar with various icons for database management tasks. The main area has two tabs: 'Query' (selected) and 'Query History'. The 'Query' tab contains the following SQL code:

```
1 SELECT * FROM Project
2 WHERE start_date = (SELECT MIN(start_date) FROM Project);
3
```

Below the query window is a 'Data Output' window. It displays a table with the following columns: project_id, project_name, project_type, project_description, project_location, start_date, end_date, and project_status. There is one row of data:

| project_id | project_name | project_type | project_description | project_location | start_date | end_date | project_status |
|------------|----------------------|----------------------------|--------------------------------|------------------|------------|------------|----------------|
| P01 | Holistic Health Home | Hotel or Hospitality Space | A place for holistic wellness. | Morbi | 2015-02-01 | 2015-08-01 | Completed |

At the bottom of the pgAdmin window, there are status messages: 'Total rows: 1 of 1' and 'Query complete 00:00:00.112'. To the right, it says 'Ln 3, Col 1'.

34. Retrieve projects with descriptions containing a specific keyword.

SELECT * FROM Project

WHERE LOWER(project_description) LIKE '%luxury%';

Software Requirements Specification for Interior Design Database Management System

The screenshot shows the pgAdmin 4 interface. At the top, there's a navigation bar with links for Dashboard, Properties, SQL, Statistics, Dependencies, Dependents, Processes, and a connection tab labeled 'ID_DB/postgres@PostgreSQL 15+'. Below the navigation bar is a toolbar with various icons for database management tasks. The main area is divided into two panes: 'Query' on the left and 'Scratch Pad' on the right. The 'Query' pane contains the following SQL code:

```
1 SELECT * FROM Project
2 WHERE LOWER(project_description) LIKE '%luxury%';
3
```

The 'Data Output' tab is selected at the bottom, showing a table with six rows of project data. The columns are: project_id, project_name, project_type, project_description, project_location, start_date, and end_date. The data is as follows:

| | project_id | project_name | project_type | project_description | project_location | start_date | end_date |
|---|------------|-----------------------------------|----------------------|------------------------------------|-------------------|------------|------------|
| 1 | P02 | Saffron Heights Apartment Complex | Home | Luxury living with stunning views. | Junagadh | 2017-03-04 | 2017-12-31 |
| 2 | P04 | Taj Mahal Luxury Getaway | Entertainment Venue | Ultimate luxury near the Taj Mahal | Bharuch | 2020-12-14 | 2021-06-30 |
| 3 | P23 | Taj Mahal Grand Hotel | Entertainment Venue | Grandeur and luxury combined. | Bhuj | 2016-10-14 | 2017-06-30 |
| 4 | P51 | Taj Mahal Luxury Suites | Educational Facility | Luxury suites near the Taj Mahal. | Vadodara (Baroda) | 2021-09-02 | 2022-06-30 |
| 5 | P52 | Taj Mahal Suites & Spa | Home | Relax and rejuvenate in luxury. | Himatnagar | 2018-12-09 | 2019-06-30 |
| 6 | P104 | Taj Mahal Luxury Suites | Retail Store | Luxury suites near the Taj Mahal. | Valsad | 2023-07-06 | 2024-06-30 |

Total rows: 6 of 6 Query complete 00:00:00.110 Ln 3, Col 1

35. Retrieve projects associated with a specific designer.

SELECT * FROM Project

WHERE designer_id = 'D69';

Software Requirements Specification for Interior Design Database Management System

The screenshot shows the pgAdmin 4 interface. At the top, there's a navigation bar with links for Dashboard, Properties, SQL, Statistics, Dependencies, Dependents, Processes, and a connection tab labeled 'ID_DB/postgres@PostgreSQL 15+'. Below the navigation bar is a toolbar with various icons for database management tasks. The main area is divided into two panes: 'Query' on the left and 'Scratch Pad' on the right. The 'Query' pane contains the following SQL code:

```
1 SELECT * FROM Project
2 WHERE designer_id = 'D69';
3
```

Below the query pane, there are tabs for Data Output, Messages, and Notifications. The Data Output tab is selected and displays a table with the results of the query:

| | project_id | project_name | project_type | project_description | project_location | start_date | end_date |
|---|------------|-----------------------------------|--------------|------------------------------------|------------------|------------|------------|
| 1 | P02 | Saffron Heights Apartment Complex | Home | Luxury living with stunning views. | Junagadh | 2017-03-04 | 2017-05-01 |
| 2 | P44 | TechGenius Office Tower | Retail Store | Hub of tech innovation. | Rajkot | 2019-09-30 | 2020-01-15 |

At the bottom of the interface, status messages indicate 'Total rows: 2 of 2' and 'Query complete 00:00:00.278'. There's also a note 'Ln 3, Col 1'.

36. Find projects in a specific location and of a specific type.

SELECT * FROM Project

WHERE project_location = 'Bharuch' AND project_type = 'Entertainment Venue';

Software Requirements Specification for Interior Design Database Management System

The screenshot shows the pgAdmin 4 interface. At the top, there's a navigation bar with links for Dashboard, Properties, SQL, Statistics, Dependencies, Dependents, Processes, and a connection tab labeled 'ID_DB/postgres@PostgreSQL 15+'. Below the navigation bar is a toolbar with various icons for database management tasks. The main area is divided into two panes: 'Query' on the left and 'Scratch Pad' on the right. The 'Query' pane contains the following SQL code:

```
1 SELECT * FROM Project
2 WHERE project_location = 'Bharuch' AND project_type = 'Entertainment Venue';
3
```

The 'Data Output' tab is selected at the bottom, showing a single row of data from the 'Project' table:

| project_id | project_name | project_type | project_description | project_location | start_date | end_date | status |
|------------|--------------------------|---------------------|-------------------------------------|------------------|------------|------------|--------|
| P04 | Taj Mahal Luxury Getaway | Entertainment Venue | Ultimate luxury near the Taj Mahal. | Bharuch | 2020-12-14 | 2021-06-14 | Active |

At the bottom of the interface, status messages indicate: 'Total rows: 1 of 1' and 'Query complete 00:00:00.096'. There is also a note 'Ln 3, Col 1'.

37. Find the budget with the highest initial budget.

```
select * from budget
order by initial_budget desc
limit 1
```

Software Requirements Specification for Interior Design Database Management System

The screenshot shows a database query interface. At the top, there is a toolbar with icons for Query, History, and other functions. Below the toolbar, a code editor displays the following SQL query:

```
1 set search_path = id_db;
2 select * from budget
3 order by initial_budget desc
4 limit 1
```

Below the code editor is a data grid titled "Data Output". The grid has columns for budget_id, initial_budget, current_budget, remaining_budget, and project_id. A single row of data is shown:

| | budget_id | initial_budget | current_budget | remaining_budget | project_id |
|---|-----------|----------------|----------------|------------------|------------|
| 1 | B87 | 8000000.00 | 8100000.00 | -100000.00 | P78 |

At the bottom of the interface, status information is displayed: "Total rows: 1 of 1" and "Query complete 00:00:00,084". On the right side, it shows "Ln 3, Col 29".

38. Find the budget with the lowest remaining budget.

```
select * from budget
order by remaining_budget
limit 1
```

Software Requirements Specification for Interior Design Database Management System

The screenshot shows a database management interface with a query editor and a results viewer.

Query:

```
1 set search_path = id_db;
2 select * from budget
3 order by remaining_budget
4 limit 1
```

Data Output:

| budget_id | initial_budget | current_budget | remaining_budget | project_id |
|-----------|----------------|----------------|------------------|------------|
| B96 | 1200000.00 | 1080000.00 | -960000.00 | P147 |

Total rows: 1 of 1 Query complete 00:00:00.098 Ln 3, Col 21

39. Calculate the total initial budget for all budgets.

```
SELECT SUM(initial_budget) AS total_initial_budget FROM Budget;
```

Software Requirements Specification for Interior Design Database Management System

The screenshot shows the pgAdmin 4 interface. At the top, there's a navigation bar with links for Dashboard, Properties, SQL, Statistics, Dependencies, Dependents, Processes, and a connection tab labeled "ID_DB/postgres@PostgreSQL 15". Below the navigation bar is a toolbar with various icons for database management tasks. The main area is divided into two panes: "Query" on the left containing the SQL code, and "Scratch Pad" on the right. The "Query" pane contains the following SQL:

```
1 SELECT SUM(initial_budget) AS total_initial_budget FROM Budget;
```

The "Data Output" tab is selected at the bottom, showing the results of the query:

| | total_initial_budget |
|---|----------------------|
| 1 | 131960000.00 |

Below the results, a message box indicates the query was successfully run: "Successfully run: Total query runtime: 211 msec. 1 rows affected." At the bottom of the interface, status messages say "Total rows: 1 of 1" and "Query complete 00:00:00.211".

40. Calculate the total budget spent for all budgets.

```
SELECT SUM(initial_budget - current_budget), budget_id AS total_budget_spent
FROM Budget;
GROUP BY budget_id;
```

Software Requirements Specification for Interior Design Database Management System

The screenshot shows the pgAdmin 4 interface. The top bar includes tabs for Dashboard, Properties, SQL, Statistics, Dependencies, Dependents, Processes, and the current connection ID_DB/postgres@PostgreSQL 15*. Below the tabs is a toolbar with various icons. The main area has two tabs: 'Query' (selected) and 'Query History'. The 'Query' tab contains the following SQL code:

```
1 SELECT SUM(initial_budget - current_budget), budget_id AS total_budget_spent
2 FROM Budget
3 group by budget_id;
4
```

The 'Data Output' tab is selected at the bottom, showing the results of the query:

| | sum | total_budget_spent |
|---|------------|--------------------|
| 1 | 13000.00 | B125 |
| 2 | 21000.00 | B50 |
| 3 | -100000.00 | B87 |
| 4 | 27000.00 | B89 |
| 5 | 85000.00 | B38 |
| 6 | 2000.00 | B25 |
| 7 | 180000.00 | B102 |
| 8 | 4000.00 | B137 |
| 9 | 38500.00 | B108 |

Total rows: 150 of 150 Query complete 00:00:00.116 Ltr 4, Col 1

41. Find the budgets with an initial budget higher than the average initial budget.

SELECT * FROM Budget

WHERE initial_budget > (SELECT AVG(initial_budget) FROM Budget);

Software Requirements Specification for Interior Design Database Management System

The screenshot shows the pgAdmin 4 interface. The top bar includes tabs for Dashboard, Properties, SQL, Statistics, Dependencies, Dependents, Processes, and a connection to ID_DB/postgres@PostgreSQL 15*. Below the tabs is a toolbar with various icons. The main area has two tabs: 'Query' (selected) and 'Query History'. The 'Query' tab contains the following SQL code:

```
1 SELECT * FROM Budget
2 WHERE initial_budget > (SELECT AVG(initial_budget) FROM Budget);
3
```

The 'Data Output' tab displays the results of the query:

| | budget_id | initial_budget | current_budget | remaining_budget | project_id |
|---|-----------|----------------|----------------|------------------|------------|
| 1 | B03 | 2500000.00 | 2525000.00 | -25000.00 | P14 |
| 2 | B06 | 1200000.00 | 1170000.00 | 30000.00 | P21 |
| 3 | B10 | 960000.00 | 945000.00 | 15000.00 | P134 |
| 4 | B12 | 930000.00 | 913500.00 | 16500.00 | P15 |
| 5 | B14 | 1400000.00 | 1320000.00 | 80000.00 | P119 |
| 6 | B16 | 2600000.00 | 2530000.00 | 70000.00 | P27 |
| 7 | B21 | 3200000.00 | 3150000.00 | 50000.00 | P55 |
| 8 | B22 | 2400000.00 | 2340000.00 | 60000.00 | P94 |
| 9 | B27 | 2800000.00 | 2700000.00 | 100000.00 | P81 |

Total rows: 40 of 40 Query complete 00:00:00.075 Ln 3. Col 1

42. Find the feedback with the highest rating.

select * from feedback

order by rating desc

Software Requirements Specification for Interior Design Database Management System

Query Query History

```
1 set search_path = fd_db;
2 select * from feedback
3 order by rating desc
```

Data Output Messages Notifications

| | feedback_id [PK] character varying (5) | project_id character varying (5) | rating integer | feedback_comments text |
|---|---|-------------------------------------|-------------------|--|
| 1 | F13 | P60 | 5 | The interior design adds warmth and character to our space. It's now a place we're truly proud of. |
| 2 | F101 | P104 | 5 | The design team understood our preferences and needs, creating a perfect reflection of our vision. |
| 3 | F141 | P85 | 5 | Our space now exudes serenity and tranquility, making it a true sanctuary. |
| 4 | F33 | P68 | 5 | The design makes our home feel more spacious and open. It's a refreshing change from what we had before. |
| 5 | F60 | P03 | 5 | We're in love with the color palette and the choice of materials. It's a visual treat for the eyes. |
| 6 | F91 | P10 | 5 | The creativity and professionalism of the design team have left us in awe. |

Total rows: 150 of 150 Query complete 00:00:00.115 Ln 3, Col 21

43. Find feedback entries submitted before a specific date.

SELECT * FROM Feedback

WHERE feedback_date < '2018-05-19';

Software Requirements Specification for Interior Design Database Management System

The screenshot shows the pgAdmin 4 interface. At the top, there's a toolbar with various icons for database management. Below the toolbar, the title bar displays the connection information: ID_DB/postgres@PostgreSQL 15*. The main area is divided into two panes: 'Query' on the left containing the SQL code, and 'Scratch Pad' on the right where the results will appear. The 'Query' pane contains the following SQL code:

```
1 SELECT * FROM Feedback;
2 WHERE feedback_date < '2018-05-19';
3
```

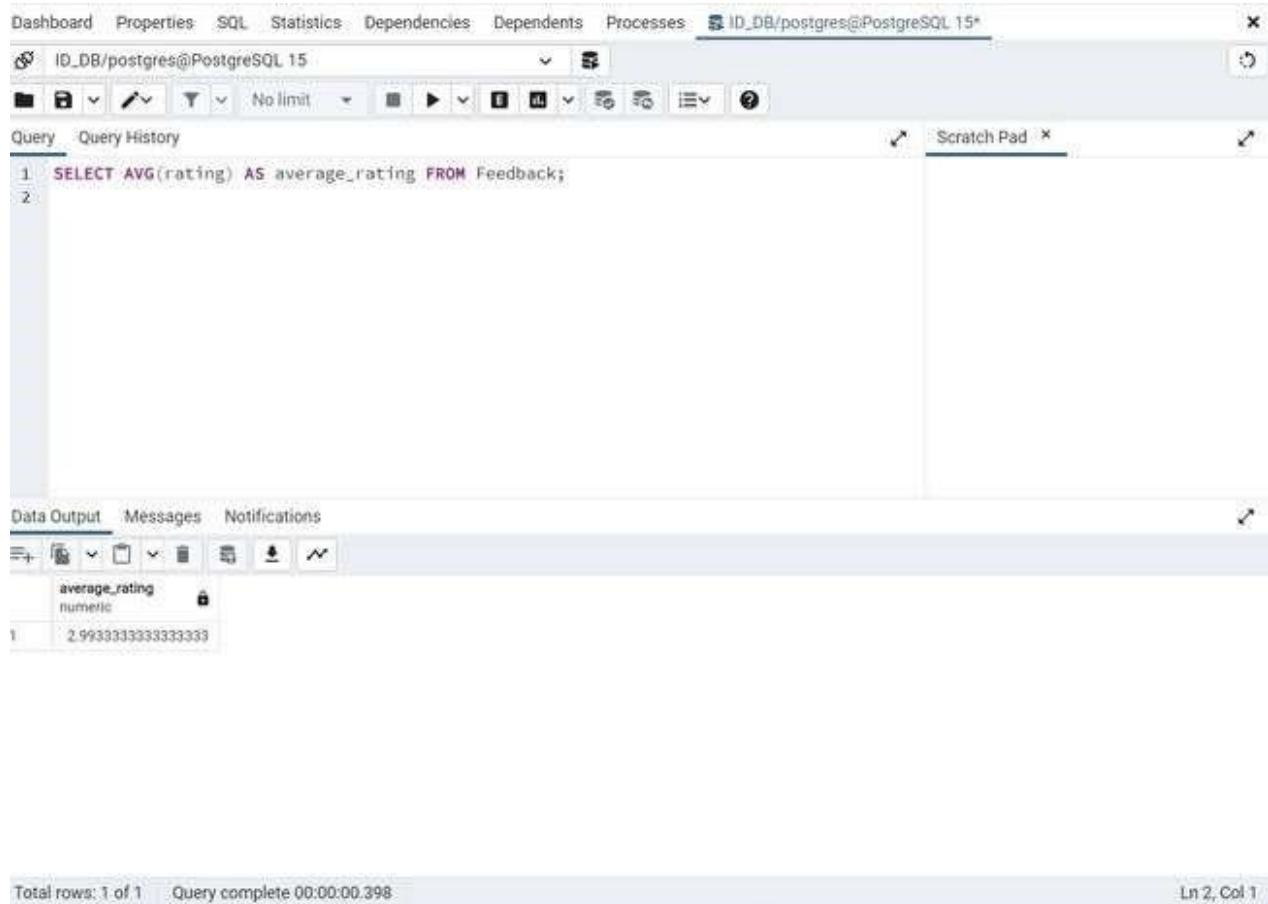
Below the query pane, there are tabs for 'Data Output', 'Messages', and 'Notifications'. The 'Data Output' tab is selected, showing a table with the results of the query. The table has the following columns: feedback_id, project_id, rating, feedback_comments, feedback_type, and feedback_date. The data consists of 75 rows, each representing a feedback entry. The last row of the table shows the total number of rows: Total rows: 75 of 75. The status bar at the bottom indicates the query was completed at 00:00:00.211.

| | feedback_id [PK] character varying (5) | project_id character varying (5) | rating integer | feedback_comments text | feedback_type character varying (50) | feedback_date date |
|---|---|-------------------------------------|-------------------|---|---|-----------------------|
| 1 | F01 | P98 | 1 | The interior design was simply stunn... | Survey | 2015-12-01 |
| 2 | F02 | P26 | 3 | We are extremely satisfied with the in... | Email Feedback | 2016-09-24 |
| 3 | F06 | P21 | 1 | The interior design project breathed n... | Google form | 2017-08-29 |
| 4 | F08 | P132 | 5 | The interior design transformed our c... | Chat Support | 2016-07-06 |
| 5 | F10 | P134 | 2 | The interior design exceeded our exp... | Customer Review | 2018-01-03 |
| 6 | F13 | P60 | 5 | The interior design adds warmth and ... | Email Feedback | 2017-04-30 |
| 7 | F14 | P119 | 3 | The design brought our dream home t... | Website Feedback | 2015-09-20 |
| 8 | F17 | P112 | 1 | Our office space has become more in... | Customer Review | 2017-07-22 |
| 9 | F18 | P113 | 5 | The design combines classic and co... | Social Media Feedback | 2016-03-10 |

44. Calculate the average rating for all feedback entries.

```
SELECT AVG(rating) AS average_rating FROM
Feedback;
```

Software Requirements Specification for Interior Design Database Management System



The screenshot shows the pgAdmin 4 interface. At the top, there's a navigation bar with links for Dashboard, Properties, SQL, Statistics, Dependencies, Dependents, Processes, and a connection tab labeled "ID_DB/postgres@PostgreSQL 15*". Below the navigation bar is a toolbar with various icons for database management tasks. The main area is divided into two panes: "Query" on the left containing the SQL code, and "Scratch Pad" on the right which is currently empty. Under the "Query" tab, the code is:

```
1 SELECT AVG(rating) AS average_rating FROM Feedback;
```

Below the code, the "Data Output" tab is selected, showing the results of the query:

| average_rating |
|---------------------|
| numeric |
| 1 2.993333333333333 |

At the bottom of the interface, status information is displayed: "Total rows: 1 of 1" and "Query complete 00:00:00.398".

45. Retrieve feedback entries with specific project status.

```
SELECT * FROM Feedback  
WHERE feedback_type IN ('Approved', 'Survey');
```

Software Requirements Specification for Interior Design Database Management System

The screenshot shows the pgAdmin 4 interface. At the top, there's a navigation bar with links like Dashboard, Properties, SQL, Statistics, Dependencies, Dependents, Processes, and a connection status for 'ID_DB/postgres@PostgreSQL 15+'. Below the navigation bar is a toolbar with various icons for database management tasks.

The main area has two tabs: 'Query' (selected) and 'Query History'. The 'Query' tab contains the following SQL code:

```
1 SELECT * FROM Feedback
2 WHERE feedback_type IN ('Approved', 'Survey');
3
```

Below the query results is a table titled 'Data Output' showing the results of the query. The table has columns: feedback_id (PK character varying (5)), project_id (character varying (5)), rating (integer), feedback_comments (text), feedback_type (character varying (50)), and feedback_date (date). The data consists of 15 rows, with the last row being a summary:

| | feedback_id | project_id | rating | feedback_comments | feedback_type | feedback_date |
|----------------------|-------------|-----------------------------|--------|--|---------------|---------------|
| 1 | F01 | P98 | 1 | The interior design was simply stunning... | Survey | 2015-12-01 |
| 2 | F15 | P39 | 2 | We were pleasantly surprised by the cre... | Survey | 2018-08-02 |
| 3 | F27 | P81 | 1 | The design has transformed our space i... | Survey | 2016-04-17 |
| 4 | F33 | P68 | 5 | The design makes our home feel more s... | Survey | 2017-03-20 |
| 5 | F48 | P131 | 4 | The design has transformed our space i... | Survey | 2020-07-26 |
| 6 | F50 | P58 | 2 | The interior design is a testament to the... | Survey | 2022-04-18 |
| 7 | F64 | P114 | 3 | Our home now feels like a work of art; th... | Survey | 2019-09-12 |
| 8 | F75 | P95 | 2 | The design exceeded our expectations! I... | Survey | 2017-10-08 |
| 9 | F81 | P105 | 2 | The design captures our love for nature... | Survey | 2019-07-01 |
| Total rows: 15 of 15 | | Query complete 00:00:00.082 | | | | Ln 3, Col 1 |

46. Count the number of feedback entries for each project.

```
SELECT project_id, COUNT(*) AS feedback_count
FROM Feedback
GROUP BY
project_id;
```

Software Requirements Specification for Interior Design Database Management System

The screenshot shows the pgAdmin 4 interface. At the top, there's a menu bar with 'Dashboard', 'Properties', 'SQL', 'Statistics', 'Dependencies', 'Dependents', 'Processes', and a connection tab labeled 'ID_DB/postgres@PostgreSQL 15+'. Below the menu is a toolbar with various icons for database management. The main area has two tabs: 'Query' (which is selected) and 'Query History'. Under 'Query', there is a scratch pad tab. The SQL query entered is:

```
1 SELECT project_id, COUNT(*) AS feedback_count
2 FROM Feedback
3 GROUP BY project_id;
4
```

Below the query, the 'Data Output' tab is selected, showing the results of the query:

| | project_id | feedback_count |
|---|------------|----------------|
| 1 | P62 | 1 |
| 2 | P30 | 1 |
| 3 | P01 | 1 |
| 4 | P137 | 1 |
| 5 | P150 | 1 |
| 6 | P98 | 1 |
| 7 | P36 | 1 |
| 8 | P64 | 1 |
| 9 | P20 | 1 |

At the bottom of the results pane, it says 'Total rows: 150 of 150 Query complete 00:00:00.238 Ln 4, Col 1'.

47. Find feedback entries with ratings that are not equal to a specific value.

SELECT * FROM Feedback

WHERE rating <> 5;

Software Requirements Specification for Interior Design Database Management System

The screenshot shows the pgAdmin 4 interface. At the top, there's a navigation bar with links for Dashboard, Properties, SQL, Statistics, Dependencies, Dependents, Processes, and a connection tab labeled 'ID_DB/postgres@PostgreSQL 15+'. Below the navigation bar is a toolbar with various icons for database management tasks. The main area is divided into two panes: 'Query' on the left and 'Scratch Pad' on the right. The 'Query' pane contains the following SQL code:

```
1 SELECT * FROM Feedback
2 WHERE rating >= 5;
3
```

The 'Data Output' tab is selected at the bottom, showing a table with the results of the query. The table has four columns: 'feedback_id' (PK character varying (5)), 'project_id' (character varying (5)), 'rating' (integer), and 'feedback_comments' (text). The data consists of 121 rows, with the first few rows shown below:

| feedback_id | project_id | rating | feedback_comments |
|-------------|------------|--------|--|
| F01 | P98 | 1 | The interior design was simply stunning, exceeding our expectations. It transformed our space into a modern masterpiece. |
| F02 | P26 | 3 | We are extremely satisfied with the interior design. It reflects our personality and style perfectly. |
| F03 | P14 | 4 | The attention to detail in the design was impressive. Every corner of our home now feels inviting and stylish. |
| F05 | P57 | 2 | The design team truly captured our vision. Our home feels like a work of art, thanks to their creative touch. |
| F06 | P21 | 1 | The interior design project breathed new life into our space. It's now a comfortable and beautiful haven. |
| F07 | P100 | 4 | We appreciate the innovative design choices. It's a fresh and unique approach to interior aesthetics. |
| F09 | P117 | 3 | The design perfectly balanced aesthetics and functionality, making our home both beautiful and practical. |
| F10 | P134 | 2 | The interior design exceeded our expectations. It's a reflection of the luxurious lifestyle we desired. |

At the bottom of the interface, status messages indicate 'Total rows: 121 of 121' and 'Query complete 00:00:00 195'. There is also a note 'Ln 3, Col 1' on the right side.

48. Find the tasks with deadlines in the next 7 days(date is 8/11/23).

select * from task

where task_deadline between current_date and (current_date + interval '7 days');

Software Requirements Specification for Interior Design Database Management System

The screenshot shows a PostgreSQL query editor interface. The top bar has tabs for 'Query' (which is selected) and 'Query History'. Below the tabs is a code editor containing the following SQL query:

```
1 set search_path = id_db;
2 select * from task
3 where task_deadline between current_date and (current_date + interval '7 days');
```

Below the code editor is a toolbar with icons for file operations like new, open, save, and copy. Underneath the toolbar is a table definition:

| task_id | task_description | task_deadline | task_status | project_id |
|----------------------------|------------------|---------------|------------------------|-----------------------|
| [PK] character varying (5) | text | date | character varying (50) | character varying (5) |

At the bottom of the interface, there are status messages: 'Total rows: 0 of 0' and 'Query complete 00:00:00.084' on the left, and 'Ln 3, Col 70' on the right.

49. Count the number of completed tasks for each project.

```
SELECT project_id, COUNT(*) AS completed_tasks
FROM Task
WHERE task_status = 'Completed'
GROUP BY project_id;
```

Software Requirements Specification for Interior Design Database Management System

The screenshot shows the pgAdmin 4 interface. At the top, there's a navigation bar with links for Dashboard, Properties, SQL, Statistics, Dependencies, Dependents, Processes, and a connection tab labeled "ID_DB/postgres@PostgreSQL 15*". Below the navigation bar is a toolbar with various icons for database management tasks. The main area is divided into two tabs: "Query" (which is selected) and "Query History". The "Query" tab contains the following SQL code:

```
1 SELECT project_id, COUNT(*) AS completed_tasks
2 FROM Task
3 WHERE task_status = 'Completed'
4 GROUP BY project_id;
5
```

Below the query tab is a "Data Output" tab where the results of the query are displayed as a table. The table has two columns: "project_id" and "completed_tasks". The data is as follows:

| project_id | completed_tasks |
|------------|-----------------|
| P62 | 1 |
| P01 | 1 |
| P30 | 1 |
| P150 | 2 |
| P98 | 1 |
| P36 | 2 |
| P64 | 2 |
| P81 | 2 |
| P67 | 2 |

At the bottom of the pgAdmin window, there are status messages: "Total rows: 137 of 137" and "Query complete 00:00:00.193". There is also a note "Ln 5, Col 1".

50. Retrieve tasks with the earliest task_deadline.

`SELECT * FROM Task`

`WHERE task_deadline = (SELECT MIN(task_deadline) FROM Task);`

Software Requirements Specification for Interior Design Database Management System

The screenshot shows the pgAdmin III interface. At the top, there's a menu bar with options like Dashboard, Properties, SQL, Statistics, Dependencies, Dependents, Processes, and a connection tab labeled 'ID_DB/postgres@PostgreSQL 15+'. Below the menu is a toolbar with various icons for database management tasks. The main area is divided into two panes: 'Query' on the left containing the executed SQL code, and 'Scratch Pad' on the right which is currently empty. The 'Query' pane contains the following SQL:

```
1 SELECT * FROM Task
2 WHERE task_deadline = (SELECT MIN(task_deadline) FROM Task);
3
```

Below the query pane is a 'Data Output' tab, which is selected. It displays a table with five columns: task_id, task_description, task_deadline, task_status, and project_id. There is one row of data shown:

| | task_id | task_description | task_deadline | task_status | project_id |
|---|---------|------------------------|---------------|-------------|------------|
| 1 | T379 | Monitor market trends. | 2015-01-23 | Completed | P92 |

At the bottom of the interface, there are status messages: 'Total rows: 1 of 1' and 'Query complete 00:00:00.256'. To the right, it says 'Ln 3, Col 1'.

51. List tasks with a task_status of 'Overdue' and a task_deadline in the past.

SELECT * FROM Task

WHERE task_status = 'Overdue' AND task_deadline < CURRENT_DATE;

Software Requirements Specification for Interior Design Database Management System

The screenshot shows a PostgreSQL database management interface. At the top, there's a navigation bar with links like Dashboard, Properties, SQL, Statistics, Dependencies, Dependents, Processes, and a connection tab labeled "ID_DB/postgres@PostgreSQL 15*". Below the navigation bar is a toolbar with various icons for database operations. The main area has tabs for "Query" and "Query History", with "Query" currently selected. A scratch pad tab is also visible. The query editor contains the following SQL code:

```
1 SELECT * FROM Task
2 WHERE task_status = 'Overdue' AND task_deadline < CURRENT_DATE;
3
```

Below the query editor, there are tabs for "Data Output", "Messages", and "Notifications", with "Data Output" currently selected. The results pane shows the schema for the "Task" table:

| task_id | task_description | task_deadline | task_status | project_id |
|----------------------------|------------------|---------------|------------------------|-----------------------|
| [PK] character varying (5) | text | date | character varying (50) | character varying (5) |

At the bottom of the interface, there are status messages: "Total rows: 0 of 0" and "Query complete 00:00:00.097" on the left, and "Ln 3, Col 1" on the right.

52. Count the number of materials for each material type.

```
SELECT material_type, COUNT(*) AS material_count
FROM Material
GROUP BY material_type;
```

Software Requirements Specification for Interior Design Database Management System

The screenshot shows the pgAdmin 4 interface. At the top, there's a navigation bar with links for Dashboard, Properties, SQL, Statistics, Dependencies, Dependents, Processes, and a connection tab labeled 'ID_DB/postgres@PostgreSQL 15*'. Below the navigation bar is a toolbar with various icons for database management tasks. The main area is divided into two panes: 'Query' on the left and 'Scratch Pad' on the right. The 'Query' pane contains a SQL query:1 SELECT material_type, COUNT(*) AS material_count
2 FROM Material
3 GROUP BY material_type;
4The 'Data Output' tab is selected at the bottom, showing the results of the query in a table format:| material_type | material_count |
| --- | --- |
| tiles | 3 |
| stone | 4 |
| wood | 4 |
| metals | 4 |
| glass | 4 |
| color | 6 |
| textiles | 4 |

Total rows: 7 of 7 Query complete 00:00:00.060 Ln 4, Col 1

53. Find the invoices with the highest amount.

```
select * from invoice
order by amount desc
limit 1
```

Software Requirements Specification for Interior Design Database Management System

Query Query History

```
1 set search_path = id_db;
2 select * from invoice
3 order by amount desc
4 limit 1
```

Data Output Messages Notifications

| | invoice_id | amount | payment_method | invoice_status | project_id |
|---|------------|------------|----------------|----------------|------------|
| 1 | I47 | 2894377.00 | Debit Card | Refunded | P60 |

Total rows: 1 of 1 Query complete 00:00:00:155 Ln 4, Col 8

54. Find the cancelled invoices for a specific project.

```
select * from invoice
where project_id = 'P120' and invoice_status = 'Cancelled'
```

Query Query History

```
1 set search_path = id_db;
2 select * from invoice
3 where project_id = 'P120' and invoice_status = 'Cancelled'
```

Data Output Messages Notifications

| | invoice_id | amount | payment_method | invoice_status | project_id |
|---|------------|-----------|----------------|----------------|------------|
| 1 | I34 | 108989.00 | Google Pay | Cancelled | P120 |

Total rows: 1 of 1 Query complete 00:00:00.119 Ln 3, Col 58

Software Requirements Specification for Interior Design Database Management System

55. Count the number of materials supplied by each supplier.

```
SELECT supplier_id, COUNT(*) AS material_count  
FROM Material  
GROUP BY  
supplier_id;
```

The screenshot shows the pgAdmin 4 interface. The top bar has tabs for Dashboard, Properties, SQL, Statistics, Dependencies, Dependents, Processes, and the current connection ID_DB/postgres@PostgreSQL 15+. Below the tabs is a toolbar with various icons. The main area is divided into two panes: 'Query' (containing the SQL code) and 'Scratch Pad'. The 'Data Output' tab is selected at the bottom, showing a table with two columns: 'supplier_id' and 'material_count'. The table contains 28 rows, each with a value of 1 for 'material_count'. At the bottom of the output pane, it says 'Total rows: 28 of 28 Query complete 00:00:00.052' and 'Ln 4, Col 1'.

| | supplier_id | material_count |
|---|----------------------|-----------------------------|
| 1 | S54 | 1 |
| 2 | S13 | 1 |
| 3 | S23 | 1 |
| 4 | S07 | 1 |
| 5 | S02 | 1 |
| 6 | S14 | 1 |
| 7 | S10 | 1 |
| 8 | S18 | 1 |
| 9 | S20 | 1 |
| | Total rows: 28 of 28 | Query complete 00:00:00.052 |

56. Get materials supplied by more than one supplier.

```
SELECT material_id, material_name  
FROM Material  
GROUP BY material_id, material_name  
HAVING COUNT(DISTINCT supplier_id) >  
1;
```

Software Requirements Specification for Interior Design Database Management System

The screenshot shows the pgAdmin 4 interface. At the top, there's a navigation bar with links for Dashboard, Properties, SQL, Statistics, Dependencies, Dependents, Processes, and a connection tab labeled "ID_DB/postgres@PostgreSQL 15+". Below the navigation bar is a toolbar with various icons for database management tasks. The main area is divided into two panes: "Query" on the left and "Scratch Pad" on the right. The "Query" pane contains the following SQL code:

```
1 SELECT material_id, material_name
2 FROM Material
3 GROUP BY material_id, material_name
4 HAVING COUNT(DISTINCT supplier_id) > 1;
5
```

Below the query pane, there are tabs for "Data Output", "Messages", and "Notifications". The "Data Output" tab is selected and shows the schema of the result set:

| material_id | material_name |
|----------------------------|------------------------|
| [PK] character varying (5) | character varying (50) |

At the bottom of the interface, there's a status bar with the text "Total rows: 0 of 0 Query complete 00:00:00.103" and "Ln 5, Col 1".

57. Retrieve the most common material type.

```
SELECT material_type, COUNT(*) AS
type_count
FROM Material
GROUP BY material_type
ORDER BY type_count
DESC
LIMIT 1;
```

Software Requirements Specification for Interior Design Database Management System

The screenshot shows the pgAdmin 4 interface. At the top, there's a navigation bar with links for Dashboard, Properties, SQL, Statistics, Dependencies, Dependents, Processes, and a connection tab labeled 'ID_DB/postgres@PostgreSQL 15+'. Below the navigation bar is a toolbar with various icons for database management tasks. The main area is divided into two panes: 'Query' on the left and 'Scratch Pad' on the right. The 'Query' pane contains the following SQL code:

```
1 SELECT material_type, COUNT(*) AS type_count
2 FROM Material
3 GROUP BY material_type
4 ORDER BY type_count DESC
5 LIMIT 1;
```

The 'Data Output' tab is selected at the bottom, showing the results of the query:

| material_type | type_count |
|---------------|------------|
| color | 6 |

At the bottom of the interface, status messages indicate 'Total rows: 1 of 1' and 'Query complete 00:00:00.047'. There is also a note 'Ln 6, Col 1'.

58. Find the client with the highest number of contact numbers.

```
SELECT client_id, COUNT(contact_number) AS contact_count
FROM Client_Contact
GROUP BY client_id
ORDER BY contact_count DESC
LIMIT 1;
```

Software Requirements Specification for Interior Design Database Management System

The screenshot shows the pgAdmin 4 interface. At the top, there's a toolbar with various icons for database management. Below the toolbar is a navigation bar with tabs: Dashboard, Properties, SQL, Statistics, Dependencies, Dependents, Processes, and the currently selected tab, ID_DB/postgres@PostgreSQL 15*. Underneath the navigation bar is a query editor window containing the following SQL code:

```
1 SELECT client_id, COUNT(contact_number) AS contact_count
2 FROM Client_Contact
3 GROUP BY client_id
4 ORDER BY contact_count DESC
5 LIMIT 1;
```

Below the query editor is a data output window showing the results of the query:

| client_id | contact_count |
|-----------|---------------|
| C20 | 4 |

At the bottom of the interface, there are status messages: "Total rows: 1 of 1" and "Query complete 00:00:00.051".

59. Count the number of clients with at least two contact numbers.

```
SELECT COUNT(client_id)
```

```
FROM (
```

```
    SELECT client_id
    FROM Client_Contact
    GROUP BY client_id
    HAVING COUNT(*)
    > 1
) AS clients_with_multiple_contacts;
```

Software Requirements Specification for Interior Design Database Management System

The screenshot shows the pgAdmin 4 interface. The top bar has tabs for Dashboard, Properties, SQL, Statistics, Dependencies, Dependents, Processes, and a connection to ID_DB/postgres@PostgreSQL 15*. Below the tabs is a toolbar with various icons. The main area is divided into two panes: 'Query' on the left containing a SQL script, and 'Scratch Pad' on the right which is currently empty. The 'Query' pane contains the following SQL code:

```
1 SELECT COUNT(client_id)
2 FROM (
3     SELECT client_id
4     FROM Client_Contact
5     GROUP BY client_id
6     HAVING COUNT(*) > 1
7 ) AS clients_with_multiple_contacts;
```

Below the Query pane is a 'Data Output' tab, which is selected. It displays the results of the query in a table format:

| count | bigint |
|-------|--------|
| 1 | 79 |

At the bottom of the interface, there is a status bar with the text "Total rows: 1 of 1" and "Query complete 00:00:00.043". To the right of the status bar is a small note "Ln 8, Col 1".

60. Find the materials used in a specific project type.

select material_name

from material as m

join material_project as mp on mp.material_id=m.material_id

join project as p on mp.project_id=p.project_id

where p.project_type = 'Office'

The screenshot shows a PostgreSQL query editor interface. At the top, there is a toolbar with 'Query' and 'Query History' tabs, and a small icon. Below the toolbar is a code editor containing the following SQL query:

```
1 set search_path = id_db;
2 select material_name
3 from material as m
4 join material_project as mp on mp.material_id=m.material_id
5 join project as p on mp.project_id=p.project_id
6 where p.project_type = 'Office'
```

Below the code editor is a 'Data Output' tab, which is currently selected. It displays a table with one column labeled 'material_name'. The table contains the following data:

| material_name |
|------------------------|
| character varying (50) |
| 1 granite |
| 2 frost |
| 3 cotton |
| 4 oak |
| 5 subway tiles |
| 6 ceramic |

At the bottom of the interface, there is a status bar with the text 'Total rows: 161 of 161' and 'Query complete 00:00:00.091' on the left, and 'Ln 2, Col 21' on the right.

61. Find the clients with a specific material preference

select * from client_preferences

where material_preference = 'Metal'

Software Requirements Specification for Interior Design Database Management System

Query Query History

```
1 set search_path = id_db;
2 select * from client_preferences
3 where material_preference = 'Metal'
```

Data Output Messages Notifications

Export Print Copy Paste Find Save

| | client_id [PK] character varying (5) | style_preference character varying (50) | color_preference character varying (50) | material_preference character varying (50) | floor_preference character varying (50) |
|---|---|--|--|---|--|
| 1 | C01 | Contemporary | Metallic | Metal | Tile |
| 2 | C06 | Rustic | Earthy | Metal | Tile |
| 3 | C07 | Traditional | Bold | Metal | Carpet |
| 4 | C17 | Modern | Pastel | Metal | Tile |
| 5 | C20 | Traditional | Earthy | Metal | Carpet |
| 6 | C22 | Minimalist | Pastel | Metal | Carpet |

Total rows: 25 of 25 Query complete 00:00:00.094 Ln 3, Col 36

62. Find the clients who have a project managed by a project manager with more than 5 years of experience.

```
select client_name  
from client natural join project_manager, project  
where project.project_manager_id=project_manager.project_manager_idand  
project.client_id=client.client_id  
and project_manager_experience = '5 year'
```

The screenshot shows a PostgreSQL query editor interface. The top section is labeled "Query" and contains the following SQL code:

```
1 set search_path = id_db;  
2 select client_name  
3 from client natural join project_manager, project  
4 where project.project_manager_id=project_manager.project_manager_id  
5 and project.client_id=client.client_id  
6 and project_manager_experience = '5 years'  
7
```

The bottom section is labeled "Data Output" and displays a table with the results of the query:

| | client_name |
|---|----------------|
| 1 | Vikas Rajput |
| 2 | Pranav Saxena |
| 3 | Abhishek Yadav |
| 4 | Meera Joshi |
| 5 | Rohan Kapoor |

63. Calculate the average rating of feedback for each project.

```
set search_path = id_db;  
select project_id,avg(feedback.rating) from feedback  
group by project_id
```

Software Requirements Specification for Interior Design Database Management System

```
Query  Query History
1 set search_path = id_db;
2 select project_id,avg(feedback.rating) from feedback
3 group by project_id
4
```

Data Output Messages Notifications

| | project_id | avg |
|---|------------|--------------------|
| 1 | P62 | 3.0000000000000000 |
| 2 | P30 | 1.0000000000000000 |
| 3 | P01 | 2.0000000000000000 |
| 4 | P137 | 2.0000000000000000 |
| 5 | P150 | 5.0000000000000000 |
| 6 | P98 | 1.0000000000000000 |

Total rows: 150 of 150 Query complete 00:00:00.086 Ln 2, Col 19

64. List the projects with a budget deficit (remaining_budget < 0).

```
set search_path = id_db;
select budget_id,remaining_budget from budget
where remaining_budget < 0
```

```
Query  Query History
1 set search_path = id_db;
2 select budget_id,remaining_budget from budget
3 where remaining_budget < 0
```

Data Output Messages Notifications

| | budget_id | remaining_budget |
|---|-----------|------------------|
| 1 | B03 | -25000.00 |
| 2 | B49 | -12000.00 |
| 3 | B79 | -7000.00 |
| 4 | B87 | -100000.00 |
| 5 | B96 | -960000.00 |

Total rows: 5 of 5 Query complete 00:00:00.087 Ln 3, Col 16

65. Find the projects where the remaining budget is less than 10% of the initial budget.

```
set search_path = id_db;
select p.project_id,p.project_name
from project as p, budget
where p.project_id=budget.project_id
and (budget.current_budget/budget.initial_budget) <0.10
```

The screenshot shows a PostgreSQL query editor interface. The top section is the 'Query' tab, containing the SQL code for question 65. The bottom section is the 'Data Output' tab, which is currently empty, indicated by the message 'Total rows: 0 of 0'. The status bar at the bottom right shows 'Query complete 00:00:00.139' and 'Ln 5, Col 56'.

```
1 set search_path = id_db;
2 select p.project_id,p.project_name
3 from project as p, budget
4 where p.project_id=budget.project_id
5 and (budget.current_budget/budget.initial_budget) <0.10
```

66. List the clients who have both residential and commercial projects.

```
select c.client_id,c.client_name
from client as c,project as p
where c.client_id=p.client_id
and project_type = 'Home'
union
select c.client_id,c.client_name
from client as c,project as p
where c.client_id=p.client_id
and project_type = 'Office'
```

Software Requirements Specification for Interior Design Database Management System

Query Query History

```
1 set search_path = id_db;
2 select c.client_id,c.client_name
3 from client as c,project as p
4 where c.client_id=p.client_id
5 and project_type = 'Home'
6 union
7 select c.client_id,c.client_name|
8 from client as c,project as p
9 where c.client_id=p.client_id
10 and project_type = 'Office'
```

Data Output Messages Notifications

| | client_id | client_name |
|---|-----------|-------------------|
| 1 | C09 | Siddharth Chauhan |
| 2 | C37 | Rishi Malhotra |
| 3 | C10 | Ananya Gupta |
| 4 | C21 | Abhinav Nair |
| 5 | C03 | Rohan Kapoor |
| 6 | C100 | Preeti Bhatia |

Total rows: 36 of 36 Query complete 00:00:00.075 Ln 7, Col 33

67. Find the projects that have materials from all suppliers.

```
set search_path = id_db;
select p.project_id,p.project_name
from project as p
where not exists (
    select s.supplier_id
    from supplier as s
    except
    select distinct m.supplier_id
    from material as m ,material_project as mp
    where
        m.material_id=mp.material_id
        and p.project_id=mp.project_id
)
```

The screenshot shows a database query editor interface. At the top, there's a toolbar with tabs for 'Query' (which is selected), 'Query History', and other options like 'Data Output', 'Messages', and 'Notifications'. Below the toolbar is a code editor containing the following SQL query:

```
3 from project as p
4 where not exists (
5     select s.supplier_id
6     from supplier as s
7     except
8     select distinct m.supplier_id
9     from material as m ,material_project as mp
10    where m.material_id=mp.material_id
11    and p.project_id=mp.project_id
12 )
```

Below the code editor is a results grid. The first row of the grid contains two columns: 'project_id' and 'project_name'. The 'project_id' column has a note '[PK] character varying (5)' and the 'project_name' column has a note 'character varying (100)'. The rest of the grid is empty.

At the bottom of the interface, there are status messages: 'Total rows: 0 of 0' and 'Query complete 00:00:00.087'. On the right side, there are coordinates 'Ln 8: Col 9'.

68. List the clients who have projects in multiple locations.

```
set search_path = id_db;
select c.client_id,c.client_name, p.project_location
from client as c, project as p
where c.client_id=p.client_id
group by c.client_id,c.client_name,p.project_location
having count(distinct p.project_location) > 1;
```

Software Requirements Specification for Interior Design Database Management System

The screenshot shows a PostgreSQL query editor interface. The top bar has tabs for 'Query' (which is selected) and 'Query History'. Below the tabs is a code editor containing the following SQL query:

```
1 set search_path = id_db;
2 select c.client_id,c.client_name, p.project_location
3 from client as c, project as p
4 where c.client_id=p.client_id
5 group by c.client_id,c.client_name,p.project_location
6 having count(distinct p.project_location) > 1;
```

The results pane below the code editor shows the schema of the query's output:

| client_id | client_name | project_location |
|-----------------------|------------------------|-------------------------|
| character varying (5) | character varying (50) | character varying (100) |

At the bottom of the interface, status information is displayed: 'Total rows: 0 of 0' and 'Query complete 00:00:00.087' on the left, and 'Ln 5, Col 54' on the right.

69. Find the designers who are managing projects with budgets over 5000000.

```
set search_path = id_db;
select d.designer_id,d.designer_name
from designer as d, project as p,budget as b
where d.designer_id=p.designer_id and b.project_id=p.project_id
and initial_budget > 5000000
```

Software Requirements Specification for Interior Design Database Management System

The screenshot shows a PostgreSQL query editor interface. The top section contains a code editor with the following SQL query:

```
1 set search_path = id_db;
2 select d.designer_id,d.designer_name
3 from designer as d, project as p,budget as b
4 where d.designer_id=p.designer_id and b.project_id=p.project_id
5 and initial_budget > 5000000
```

The bottom section displays the results of the query in a table format:

| | designer_id | designer_name |
|---|-------------|---------------|
| 1 | D95 | Aditya Suri |

Below the table, status information is shown: "Total rows: 1 of 1" and "Query complete 00:00:00.082". On the right, it says "Ln 5, Col 29".

70. Increase the budgets of all clients by 10%.

```
set search_path = id_db;
alter table budget
add column new_initial_budget NUMERIC(10,2);
update budget
set new_initial_budget=initial_budget*1.1;
select * from budget
```

Software Requirements Specification for Interior Design Database Management System

The screenshot shows a database management interface with two main panes. The top pane is titled 'Query' and contains the following SQL code:

```
1 set search_path = id_db;
2 alter table budget
3 add column new_initial_budget NUMERIC(10,2);
4 update budget
5 set new_initial_budget=initial_budget*1.1;
6 select * from budget;
```

The bottom pane is titled 'Data Output' and displays a table with six columns: budget_id, initial_budget, current_budget, remaining_budget, project_id, and new_initial_budget. The data is as follows:

| | budget_id [PK] character varying (5) | initial_budget numeric (10,2) | current_budget numeric (10,2) | remaining_budget numeric (10,2) | project_id character varying (5) | new_initial_budget numeric (10,2) |
|---|---|----------------------------------|----------------------------------|------------------------------------|-------------------------------------|--------------------------------------|
| 1 | B01 | 800000.00 | 720000.00 | 80000.00 | P98 | 880000.00 |
| 2 | B02 | 570000.00 | 555000.00 | 15000.00 | P26 | 627000.00 |
| 3 | B03 | 2500000.00 | 2525000.00 | 25000.00 | P14 | 2750000.00 |
| 4 | B04 | 660000.00 | 654000.00 | 6000.00 | P51 | 726000.00 |
| 5 | B05 | 260000.00 | 253000.00 | 7000.00 | P57 | 286000.00 |
| 6 | B06 | 1200000.00 | 1170000.00 | 30000.00 | P21 | 1320000.00 |

Total rows: 150 of 150 Query complete 00:00:00.091 Ln 6, Col 21

71. Update the feedback rating and comments for a specific project.

```
set search_path = id_db;
update feedback
set rating = 5
where feedback_id = 'F01';
select * from feedback
```

Software Requirements Specification for Interior Design Database Management System

The screenshot shows a database interface with a query editor and a results viewer.

Query:

```
1 set search_path = id_db;
2 update feedback
3 set rating = 5
4 where feedback_id = 'F01';
5 select * from feedback;
```

Data Output:

| | feedback_id [PK] character varying (5) | project_id character varying (5) | rating integer | feedback_comments text |
|-----|---|-------------------------------------|-------------------|--|
| 145 | F146 | P13 | 5 | The design perfectly represents our personality and lifestyle, making it a specia... |
| 146 | F147 | P142 | 1 | The interior design adds both functionality and elegance to our space, making i... |
| 147 | F148 | P135 | 4 | The meticulous attention to detail in the design is impressive. |
| 148 | F149 | P62 | 3 | Our space has been transformed into a true work of art, making it a showstopp... |
| 149 | F150 | P04 | 2 | The use of natural materials and earthy tones creates a cozy and relaxing atmo... |
| 150 | F01 | P98 | 5 | The interior design was simply stunning, exceeding our expectations. It transfor... |

Total rows: 150 of 150 Query complete 00:00:00.105 Ln 5, Col 23

72. Distinct the project managers by their salary in three parts i.e. less than 700000, between 700000 and 800000 and greater than 800000.

```
set search_path = id_db;
SELECT CASE
    WHEN project_manager_salary < 700000 THEN '< 700,000'
    WHEN project_manager_salary >= 700000 AND project_manager_salary < 800000 THEN
        '700,000-800,000'
    ELSE 'Over 800,000'
END AS salary_range, COUNT(*) AS count
FROM Project_Manager
GROUP BY salary_range;
```

Software Requirements Specification for Interior Design Database Management System

The screenshot shows a database query interface. The top section contains a code editor with the following SQL query:

```
1 set search_path = id_db;
2 SELECT CASE
3     WHEN project_manager_salary < 700000 THEN '< 700,000'
4     WHEN project_manager_salary >= 700000 AND project_manager_salary < 800000 THEN '700,000-800,000'
5     ELSE 'Over 800,000'
6 END AS salary_range, COUNT(*) AS count
7 FROM Project_Manager
8 GROUP BY salary_range;
```

The bottom section shows the results of the query in a table:

| salary_range | count |
|-----------------|-------|
| < 700,000 | 17 |
| Over 800,000 | 65 |
| 700,000-800,000 | 18 |

At the bottom of the interface, there is a status bar with the text "Total rows: 3 of 3 Query complete 00:00:00.075 Ln 4, Col 101".

73. Delete a specific client and all related information.

```
set search_path = id_db;
select * from client_contact
delete from client_contact where client_id='C01'
delete from feedback where project_id in (select project_id from project where client_id='C01')
delete from client where client_id='C01'
delete from task where project_id in (select project_id from project where client_id='C01')
delete from budget where project_id in (select project_id from project where client_id='C01')
delete from material_project where project_id in (select project_id from project where
client_id='C01')
delete from project where client_id='C01'
```

Software Requirements Specification for Interior Design Database Management System

```
Query  Query History
1 set search_path = id_db;
2 select * from client_contact
3 delete from client_contact where client_id='C01'
4 delete from feedback where project_id in (select project_id from project where client_id='C01')
5 delete from client where client_id='C01'
6 delete from task where project_id in (select project_id from project where client_id='C01')
7 delete from budget where project_id in (select project_id from project where client_id='C01')
8 delete from material_project where project_id in (select project_id from project where client_id='C01')
9 delete from project where client_id='C01'

Data Output  Messages  Notifications
DELETE 2
Query returned successfully in 55 msec.

Total rows: 208 of 208  Query complete 00:00:00.055  Ln 9, Col 1
```

74. Delete all feedback entries for a specific project.

```
set search_path = id_db;
select * from feedback
delete from feedback where project_id = 'P26'
```

```
Query  Query History
1 set search_path = id_db;
2 select * from feedback
3 delete from feedback where project_id = 'P26'
4

Data Output  Messages  Notifications


|   | feedback_id<br>[PK] character varying (5) | project_id<br>character varying (5) | rating<br>integer | feedback_comments<br>text                                                                                        |
|---|-------------------------------------------|-------------------------------------|-------------------|------------------------------------------------------------------------------------------------------------------|
| 1 | F03                                       | P14                                 | 4                 | The attention to detail in the design was impressive. Every corner of our home reflects your expertise.          |
| 2 | F04                                       | P51                                 | 5                 | The interior design project added a touch of elegance and sophistication to our living space.                    |
| 3 | F05                                       | P57                                 | 2                 | The design team truly captured our vision. Our home feels like a work of art, thank you!                         |
| 4 | F06                                       | P21                                 | 1                 | The interior design project breathed new life into our space. It's now a comfortable and functional environment. |
| 5 | F07                                       | P100                                | 4                 | We appreciate the innovative design choices. It's a fresh and unique approach to interior design.                |
| 6 | F08                                       | P132                                | 5                 | The interior design transformed our commercial space into a welcoming and professional environment.              |


Total rows: 147 of 147  Query complete 00:00:00.092  Ln 2, Col 1
```

75. List all projects with their client

```
names.set search_path = id_db;  
select p.project_id,p.project_name,c.client_id,c.client_name from project as p,client as c  
where p.client_id=c.client_id
```

The screenshot shows a PostgreSQL query editor interface. The top section is labeled "Query History" and contains the executed SQL code. The bottom section is labeled "Data Output" and displays the resulting table of project and client information.

| | project_id | project_name | client_id | client_name |
|---|------------|-----------------------------------|-----------|------------------|
| 1 | P01 | Holistic Health Home | C23 | Vikas Rajput |
| 2 | P02 | Saffron Heights Apartment Complex | C64 | Aditi Agarwal |
| 3 | P03 | Rajasthan Crafts Bazaar | C73 | Anil Kumar |
| 4 | P04 | Taj Mahal Luxury Getaway | C32 | Anisha Choudhary |
| 5 | P05 | Divine Bollywood Theater | C67 | Akash Yadav |
| 6 | P06 | Goan Beach Retreat | C35 | Pranav Saxena |

Total rows: 148 of 148 Query complete 00:00:00.106 Ln 2, Col 36

76. Find the designers and their respective project counts.

```
set search_path = id_db;  
select designer_id,count(project_id)  
from project  
group by designer_id
```

Software Requirements Specification for Interior Design Database Management System

The screenshot shows a database management interface with two main panes. The top pane is a query editor with the following SQL code:

```
1 set search_path = id_db;
2 select designer_id, count(project_id)
3 from project
4 group by designer_id;
5
```

The bottom pane displays the results of the query in a tabular format:

| | designer_id | count |
|---|-------------|-------|
| 1 | D54 | 1 |
| 2 | D28 | 1 |
| 3 | D90 | 2 |
| 4 | D23 | 1 |
| 5 | D31 | 1 |
| 6 | D06 | 1 |

Total rows: 99 of 99 Query complete 00:00:00.113 Ln 2, Col 20

77. List materials, their costs, and the names of the suppliers who provide them

```
set search_path = id_db;
select material_id, material_name, material_type, material_cost, material.supplier_id,
supplier_name
from material, supplier
Where material.supplier_id=supplier.supplier_id;
```

Software Requirements Specification for Interior Design Database Management System

The screenshot shows the pgAdmin 4 interface. The top bar has tabs for Dashboard, Properties, SQL, Statistics, Dependencies, Dependents, Processes, and a connection to ID_DB/postgres@PostgreSQL 15*. Below the tabs is a toolbar with various icons. The main area has two tabs: Query and Query History, with the Query tab selected. A scratch pad tab is also visible. The Query tab contains the following SQL code:

```
1 select material_id,material_name,material_type,material_cost, material.supplier_id, sup
2 from material, supplier
3 Where material.supplier_id=supplier.supplier_id;
4
```

The Data Output tab shows a table with the following data:

| | material_id | material_name | material_type | material_cost | supplier_id | supplier_name |
|---|-------------|-----------------|---------------|---------------|-------------|-------------------------|
| 1 | M01 | oak | wood | 10000.00 | S01 | WoodCraft Interiors |
| 2 | M02 | walnut | wood | 8000.00 | S02 | StoneSense Decor |
| 3 | M03 | pine | wood | 15000.00 | S03 | MetalMaster Designs |
| 4 | M04 | reclaimed wood | wood | 74000.00 | S04 | GlassGenius Creations |
| 5 | M05 | wool | textiles | 90000.00 | S05 | Hardwood Haven |
| 6 | M06 | cotton | textiles | 32000.00 | S06 | LaminateLux Interiors |
| 7 | M07 | silk | textiles | 30920.00 | S07 | TileTrends Studio |
| 8 | M08 | polyester | textiles | 80000.00 | S08 | CarpetCouture Creations |
| 9 | M09 | stainless steel | metals | 10000.00 | S09 | TextileLuxe Supply |

Total rows: 29 of 29 Query complete 00:00:00.117 Ln 4, Col 1

78. Find the total cost of materials for each project.

```
set search_path = id_db;
select p.project_id,p.project_name,sum(m.material_cost) as total_material_cost
from project as p,material as m,material_project as mp
where p.project_id=mp.project_id
and m.material_id=mp.material_id
group by p.project_id,p.project_name;
```

Software Requirements Specification for Interior Design Database Management System

The screenshot shows a database query interface. At the top, there is a code editor window titled "Query History" containing the following SQL code:

```
1 set search_path = id_db;
2 select p.project_id,p.project_name,sum(m.material_cost) as total_material_cost
3 from project as p,material as m,material_project as mp
4 where p.project_id=mp.project_id
5 and m.material_id=mp.material_id
6 group by p.project_id,p.project_name;
```

Below the code editor is a "Data Output" tab, which displays the results of the query in a table format:

| | project_id [PK] character varying (5) | project_name character varying (100) | total_material_cost numeric |
|---|--|---|--------------------------------|
| 1 | P62 | Bollywood Nights Entertainment Hub | 164000.00 |
| 2 | P01 | Holistic Health Home | 331000.00 |
| 3 | P30 | Corporate Oasis Office Space | 164000.00 |
| 4 | P137 | Silicon Valley East Office Park | 341000.00 |
| 5 | P150 | AyuVillage Wellness Retreat | 182000.00 |
| 6 | P98 | Lotus Blossom School | 164000.00 |

At the bottom of the interface, there is a status bar with the text "Total rows: 148 of 148" and "Query complete 00:00:00.103". To the right of the status bar, it says "Ln 6, Col 25".

79. Calculate the Total Amount Invoiced for Each Project.
SELECT P.project_name,
SUM(I.amount) AS total_invoiced_amount
FROM Project P
LEFT JOIN Invoice I ON P.project_id = I.project_id
GROUP BY P.project_name;

Software Requirements Specification for Interior Design Database Management System

The screenshot shows the pgAdmin 4 interface. At the top, there's a menu bar with 'Dashboard', 'Properties', 'SQL', 'Statistics', 'Dependencies', 'Dependents', 'Processes', and a connection tab labeled 'ID_DB/postgres@PostgreSQL 15+'. Below the menu is a toolbar with various icons for database management. The main area has two tabs: 'Query' (which is selected) and 'Query History'. A scratch pad tab is also visible. The 'Query' tab contains the following SQL code:

```
1 SELECT P.project_name, SUM(I.amount) AS total_invoiced_amount
2 FROM Project P
3 LEFT JOIN Invoice I ON P.project_id = I.project_id
4 GROUP BY P.project_name;
5
```

Below the code, the 'Data Output' tab is selected, showing a table with the results of the query. The table has two columns: 'project_name' and 'total_invoiced_amount'. The data is as follows:

| project_name | total_invoiced_amount |
|-------------------------------------|-----------------------|
| Silicon Valley West Office Park | 40563.00 |
| Chaat Corner Café | 406434.00 |
| Yoga & Wellness Institute | 92318.00 |
| TechPark Corporate Headquarters | 143238.00 |
| Rajasthani Folk Entertainment Venue | 31276.00 |
| Mumbai Beachfront Retreat | 74095.00 |
| Ayurveda Haven Home | 32224.00 |
| Punjab Spice Café | 178930.00 |
| Corporate Oasis Office Space | 333064.00 |

At the bottom of the data output, it says 'Total rows: 144 of 144 Query complete 00:00:00.297'. To the right, a message box indicates 'Successfully run. Total query runtime: 297 msec. 144 rows affected.' and 'Ln 5, Col 1'.

80. List Feedback for Projects with a Rating Greater Than 3.

```
SELECT P.project_name, F.rating, F.feedback_comments, F.feedback_type
FROM Feedback F
INNER JOIN Project P ON F.project_id = P.project_id
WHERE F.rating > 3;
```

Software Requirements Specification for Interior Design Database Management System

The screenshot shows the pgAdmin 4 interface. At the top, there's a toolbar with various icons for database management. Below the toolbar, the title bar says "ID_DB/postgres@PostgreSQL 15". The main area has two tabs: "Query" and "Query History", with "Query" selected. The query window contains the following SQL code:

```
1 SELECT P.project_name, F.rating, F.feedback_comments, F.feedback_type
2 FROM Feedback F
3 INNER JOIN Project P ON F.project_id = P.project_id
4 WHERE F.rating > 3;
5
```

Below the query window is a "Data Output" tab which is currently active. It displays a table with the following data:

| | project_name | rating | feedback_comments | feedback_type |
|---|-----------------------------------|--------|--|---------------|
| 1 | Rajasthan Crafts Bazaar | 5 | We're in love with the color palette and the choice of materials. It's a visual treat. | SMS Feedba |
| 2 | Divine Bollywood Theater | 5 | The interior design is a true representation of our personality and lifestyle. | Phone Suppl |
| 3 | Goan Beach Retreat | 4 | The attention to detail in the design is impeccable. It's a work of art. | Phone Suppl |
| 4 | Corporate Excellence Office Tower | 5 | The creativity and professionalism of the design team have left us in awe. | Survey |
| 5 | Rajasthani Cuisine Café | 5 | Our space now feels like a cozy, chic, and inviting haven. | SMS Feedba |
| 6 | Taj Mahal Academy | 5 | We're impressed with the use of colors and textures. It's a visual delight. | Survey |
| 7 | Garden Oasis Hotel & Spa | 5 | The design perfectly represents our personality and lifestyle, making it a special place. | Phone Surve |
| 8 | Lotus Blossom School | 4 | The attention to detail in the design was impressive. Every corner of our home now feels inviting and stylish. | Phone Surve |

At the bottom of the pgAdmin window, it says "Total rows: 60 of 60 Query complete 00:00:00.113 Ln 5, Col 1".

81. stored procedure that calculates the remaining budget for a given project and updates the Budget table.

-- Create a function that calculates the remaining budget and updates the Budget table.

```
CREATE OR REPLACE FUNCTION calculate_remaining_budget(project_id_func varchar)
RETURNS VOID AS $$
```

DECLARE

```
    project_initial_budget numeric;
    project_current_budget numeric;
    project_remaining_budget numeric;
```

BEGIN

```
    -- Retrieve the initial and current budget values for the project.
```

```
    SELECT initial_budget, current_budget
    INTO project_initial_budget, project_current_budget
    FROM Budget
    WHERE project_id = project_id_func;
```

```
    -- Calculate the remaining budget.
```

```
    project_remaining_budget := project_initial_budget - project_current_budget;
```

-- Update the Budget table with the new remaining budget value.

```
UPDATE Budget
SET remaining_budget = project_remaining_budget
WHERE project_id = project_id_func;
END;
$$ LANGUAGE plpgsql;
select calculate_remaining_budget('P01');
```

The screenshot shows the pgAdmin 4 interface with a query editor window. The title bar says "ID_DB/postgres@PostgreSQL 15*". The query tab contains the following PostgreSQL code:

```
1 -- Create a function that calculates the remaining budget and updates the Budget table.
2 CREATE OR REPLACE FUNCTION calculate_remaining_budget(project_id_func varchar)
3 RETURNS VOID AS $$
4 DECLARE
5     project_initial_budget numeric;
6     project_current_budget numeric;
7     project_remaining_budget numeric;
8 BEGIN
9     -- Retrieve the initial and current budget values for the project.
10    SELECT initial_budget, current_budget
11        INTO project_initial_budget, project_current_budget
12        FROM Budget
13        WHERE project_id = project_id_func;
14
15    -- Calculate the remaining budget.
16    project_remaining_budget := project_initial_budget - project_current_budget;
17
```

The "Data Output" tab shows the result of the function creation:

| calculate_remaining_budget | void |
|----------------------------|------|
| 1 | |

At the bottom left, it says "b > Functions > calculate_remaining_budget(project_id_func character varying)". At the bottom right, it says "Ln 15, Col 39".

82. Calculate Total Project Cost using Function.

```
CREATE OR REPLACE FUNCTION calculate_total_project_cost(project_id_func varchar)
RETURNS NUMERIC AS $$
DECLARE
    total_cost NUMERIC := 0;
BEGIN
    -- Calculate the total cost of materials used in the project.
    SELECT SUM(material.material_cost) INTO total_cost
    FROM material_projects,material
    WHERE project_id = project_id_func;

    RETURN
total_cost;END;
```

Software Requirements Specification for Interior Design Database Management System

```
$$ LANGUAGE plpgsql;
select calculate_total_project_cost('P01');
```

The screenshot shows the pgAdmin 4 interface. At the top, there's a toolbar with various icons. Below it is a navigation bar with tabs like Dashboard, Properties, SQL, Statistics, Dependencies, Dependents, Processes, and a connection dropdown set to ID_DB/postgres@PostgreSQL 15+. Underneath the toolbar, there are two tabs: Query and Query History, with Query selected. To the right of the tabs is a Scratch Pad tab. The main area contains the following PostgreSQL code:

```
1 CREATE OR REPLACE FUNCTION calculate_total_project_cost(project_id_func varchar)
2 RETURNS NUMERIC AS $$
3 DECLARE
4     total_cost NUMERIC := 0;
5 BEGIN
6     -- Calculate the total cost of materials used in the project.
7     SELECT SUM(material.material_cost) INTO total_cost
8     FROM material_projects,material
9     WHERE project_id = project_id_func;
10
11    RETURN total_cost;
12 END;
13 $$ LANGUAGE plpgsql;
14 select calculate_total_project_cost('P01');
15
```

Below the code, there's a Data Output tab which is currently active. It shows a single row of results:

| | calculate_total_project_cost |
|---|------------------------------|
| 1 | 10056060.00 |

At the bottom of the pgAdmin window, there are status messages: "Total rows: 1 of 1 Query complete 00:00:00.073" and "Ln 12, Col 5".

83. Check Budget Limits using trigger function.

```
CREATE OR REPLACE FUNCTION check_budget_limits()
RETURNS TRIGGER AS $$
BEGIN
    IF NEW.current_budget > NEW.initial_budget THEN
        RAISE EXCEPTION 'Current budget cannot exceed initial budget';
    END IF;
    RETURN
NEW;END;
$$ LANGUAGE plpgsql;

CREATE TRIGGER
enforce_budget_limits BEFORE UPDATE
ON Budget
FOR EACH ROW
EXECUTE FUNCTION check_budget_limits();
```

Software Requirements Specification for Interior Design Database Management System

```
INSERT INTO Project (project_id, project_name, project_type, project_description,
project_location, start_date, end_date, project_status, designer_id, project_manager_id,
client_id)
```

```
VALUES ('P151','New Project', 'Type', 'Description', 'Location', '2023-01-01', '2023-06-30',
'On-going', 'D01', 'PM01', 'C01');
```

```
INSERT INTO Budget (budget_id, initial_budget, current_budget, remaining_budget, project_id)
VALUES ('B151', 10000, 8000, 2000, 'P151');
```

```
UPDATE Budget
```

```
SET current_budget = 110000
```

```
WHERE budget_id = 'B151';
```

The screenshot shows the pgAdmin 4 interface with a query editor window. The title bar indicates the connection is to 'ID_DB/postgres@PostgreSQL 15+'. The main area contains the following SQL code:

```
1 CREATE OR REPLACE FUNCTION check_budget_limits()
2 RETURNS TRIGGER AS $$ 
3 BEGIN
4     IF NEW.current_budget > NEW.initial_budget THEN
5         RAISE EXCEPTION 'Current budget cannot exceed initial budget';
6     END IF;
7     RETURN NEW;
8 END;
9 $$
 LANGUAGE plpgsql;
10
11 CREATE TRIGGER enforce_budget_limits
12 BEFORE UPDATE ON Budget
13 FOR EACH ROW
14 EXECUTE FUNCTION check_budget_limits();
15
16 INSERT INTO Project (project_id, project_name, project_type, project_description, project_location, start_date, end_date, project_status, designer_id, project_manager_id, client_id)
17 VALUES ('P151', 'New Project', 'Type', 'Description', 'Location', '2023-01-01', '2023-06-30', 'On-going', 'D01', 'PM01', 'C01');
```

Below the code, the 'Messages' tab displays an error message:

```
ERROR: Current budget cannot exceed initial budget
CONTEXT: PL/pgSQL function check_budget_limits() line 4 at RAISE
SQL state: P0001Query returned successfully, in 110 msec.
```

At the bottom of the window, status information is shown:

Total rows: 150 of 150 Query complete 00:00:00.110 Ln 15, Col 1