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## Technical Description

**Introduction:** This document provides a detailed technical description of the system architecture and components. It is intended for use by developers, testers, and other stakeholders involved in the project.

**System Overview:** The system is designed to provide a secure and scalable environment for data storage and retrieval. It consists of several key components, including a database layer, an application layer, and a user interface.

**Architecture:** The system is built using a microservices architecture, which allows for independent development and deployment of different components. This approach provides flexibility and scalability, enabling the system to grow as needed.

**Components:** The system is composed of the following main components:

- Database Layer:** The database layer is responsible for storing and retrieving data. It is implemented using a relational database management system (RDBMS).

- Application Layer:** The application layer handles the business logic and data processing. It is implemented using a programming language such as Java or Python.

- User Interface:** The user interface provides a means for users to interact with the system. It is implemented using a web browser and a user interface framework.

**Deployment:** The system is deployed to a cloud environment, which provides scalability and availability. The deployment process is automated, allowing for easy updates and maintenance.

**Security:** The system is designed with security in mind. It includes features such as user authentication, authorization, and data encryption to protect sensitive information.

**Performance:** The system is optimized for performance, ensuring fast response times and high throughput. This is achieved through techniques such as caching and load balancing.

**Monitoring:** The system includes monitoring and logging capabilities to track its performance and detect any issues. This allows for proactive maintenance and troubleshooting.

**Conclusion:** This technical description provides a comprehensive overview of the system's architecture and components. It is intended to serve as a reference for anyone involved in the project.

**References:** The following references provide additional information on the technologies and concepts discussed in this document:

- Microservices Architecture: A Guide to Building Scalable and Resilient Systems

- Database Design: Principles and Practices

- Cloud Computing: Fundamentals and Applications

- Security: Principles and Practices

QUESTION BANK

Sl. No.	Question	Answer	MCQ	True/False	Short Answer	Long Answer
1	Define a microcontroller.	A microcontroller is a single-chip integrated circuit that contains a central processing unit, memory, and peripheral devices.				
2	What are the main components of a microcontroller?	The main components of a microcontroller are the central processing unit, memory, and peripheral devices.				
3	Explain the role of the central processing unit in a microcontroller.	The central processing unit is the brain of the microcontroller, responsible for executing instructions and controlling the flow of data.				
4	What is the function of memory in a microcontroller?	Memory is used to store data and instructions that the microcontroller needs to execute.				
5	Describe the different types of peripheral devices found in a microcontroller.	Peripheral devices include timers, counters, analog-to-digital converters, and digital-to-analog converters.				

QUESTION BANK

QUESTION BANK



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12/20/2020	DEPOSIT	100.00	500.00	
12/20/2020	DEPOSIT	100.00	600.00	
12/20/2020	DEPOSIT	100.00	700.00	
12/20/2020	DEPOSIT	100.00	800.00	
12/20/2020	DEPOSIT	100.00	900.00	
12/20/2020	DEPOSIT	100.00	1000.00	
12/20/2020	DEPOSIT	100.00	1100.00	
12/20/2020	DEPOSIT	100.00	1200.00	
12/20/2020	DEPOSIT	100.00	1300.00	
12/20/2020	DEPOSIT	100.00	1400.00	
12/20/2020	DEPOSIT	100.00	1500.00	
12/20/2020	DEPOSIT	100.00	1600.00	
12/20/2020	DEPOSIT	100.00	1700.00	
12/20/2020	DEPOSIT	100.00	1800.00	
12/20/2020	DEPOSIT	100.00	1900.00	
12/20/2020	DEPOSIT	100.00	2000.00	

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### QUESTION 11

Question	Answer
11.1.1	1000
11.1.2	500
11.1.3	500
11.1.4	1000
11.1.5	1000

### QUESTION 12

Question	Answer
12.1	1000
12.2	500

### QUESTION 13

Question	Answer	Answer	Answer	Answer	Answer
13.1	1000				
13.2	500				
13.3	500				
13.4	1000				
13.5	1000				

### QUESTION 14

### QUESTION 15

Question	Answer	Answer	Answer	Answer	Answer
15.1	1000				
15.2	500				
15.3	500				
15.4	1000				
15.5	1000				

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Category	Sub-Category	Value	Unit	Color
Category 1	Sub-Category 1	10	Unit 1	Blue
Category 1	Sub-Category 2	15	Unit 2	Blue
Category 1	Sub-Category 3	10	Unit 3	Blue
Category 1	Sub-Category 4	12	Unit 4	Blue
Category 1	Sub-Category 5	18	Unit 5	Blue
Category 2	Sub-Category 1	10	Unit 1	Blue
Category 2	Sub-Category 2	15	Unit 2	Blue
Category 2	Sub-Category 3	10	Unit 3	Blue
Category 2	Sub-Category 4	12	Unit 4	Blue
Category 2	Sub-Category 5	18	Unit 5	Blue





Item	Description	Quantity	Unit	Price
1	...	...	...	...
2	...	...	...	...
3	...	...	...	...

Item	Description	Quantity	Unit	Price
4	...	...	...	...
5	...	...	...	...
6	...	...	...	...



**Notes:**

1. All dimensions are in millimeters unless otherwise specified.
2. Surface finish shall be Ra 0.8.
3. Material shall be 304 stainless steel.
4. All parts shall be heat treated to HRC 20-22.
5. All parts shall be polished to a mirror finish.
6. All parts shall be passivated.
7. All parts shall be inspected and certified.
8. All parts shall be stored in a dry, clean environment.
9. All parts shall be protected from corrosion.
10. All parts shall be marked with the part number.

**Assembly Instructions:**

1. Assemble the housing and shaft.
2. Install the bearing on the shaft.
3. Install the spring on the shaft.
4. Assemble the housing and shaft.
5. Tighten the screws to the specified torque.
6. Check the operation of the assembly.
7. Adjust the tension of the spring.
8. Check the alignment of the shaft.
9. Check the clearance between the housing and shaft.
10. Check the operation of the assembly.

## 1. Introduction

The purpose of this document is to provide a comprehensive overview of the project's objectives, scope, and deliverables. It serves as a reference point for all stakeholders involved in the project.

## 2. Project Objectives

The primary objectives of this project are to:

### 2.1. Objectives

1. Develop a robust and scalable software solution that meets the requirements of the client.

2. Ensure the solution is secure, reliable, and easy to use.

3. Deliver the project on time and within budget.

### 2.2. Deliverables

The project will deliver the following key components:

### 2.3. Milestones

The project will follow a structured timeline with the following milestones:

### 2.4. Roles and Responsibilities

The project team consists of the following roles and responsibilities:

### 2.5. Risk Management

The project team will identify, assess, and mitigate risks throughout the project lifecycle. Key risks include:

### 2.6. Communication

Effective communication is essential for the success of this project. The project team will maintain regular communication with the client and stakeholders.

### 2.7. Conclusion

This document provides a clear and concise overview of the project's goals and expectations. It is intended to serve as a guide for all project participants.

## 3. Scope

The project scope includes the development and deployment of the software solution, as well as the provision of training and support to the end users.

## 4. Deliverables

The project will deliver the following key components:

### 4.1. Software Solution

The software solution will be developed using modern technologies and frameworks to ensure scalability and performance.

### 4.2. Training and Support

The project team will provide comprehensive training and support to the end users.

### 4.3. Documentation

The project team will maintain detailed documentation throughout the project lifecycle.

### 4.4. Security

The software solution will be designed with security in mind, following industry best practices.

### 4.5. Performance

The software solution will be optimized for performance and reliability.

### 4.6. Usability

The software solution will be designed to be user-friendly and easy to use.

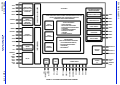
### 4.7. Integration

The software solution will be integrated with existing systems and data sources.

### 4.8. Testing

The software solution will undergo rigorous testing to ensure quality and reliability.

### 4.9. Deployment



**QUESTION**  
The following table shows the number of people who attended a concert in each of the five years from 2018 to 2022.

Year	Number of people
2018	1200
2019	1500
2020	1800
2021	2100
2022	2400

Calculate the mean number of people who attended the concert in each of the five years.

**ANSWER**

Mean =  $\frac{1200 + 1500 + 1800 + 2100 + 2400}{5}$

Mean =  $\frac{9000}{5}$

Mean = 1800

The mean number of people who attended the concert in each of the five years is 1800.

**QUESTION**

The following table shows the number of people who attended a concert in each of the five years from 2018 to 2022.

Year	Number of people
2018	1200
2019	1500
2020	1800
2021	2100
2022	2400

Calculate the standard deviation of the number of people who attended the concert in each of the five years.

**ANSWER**

Standard deviation =  $\sqrt{\frac{1}{5}[(1200 - 1800)^2 + (1500 - 1800)^2 + (1800 - 1800)^2 + (2100 - 1800)^2 + (2400 - 1800)^2]}$

Standard deviation =  $\sqrt{\frac{1}{5}[-600^2 + (-300)^2 + 0^2 + 300^2 + 600^2]}$

Standard deviation =  $\sqrt{\frac{1}{5}[360000 + 90000 + 0 + 90000 + 360000]}$

Standard deviation =  $\sqrt{\frac{1}{5} \times 900000}$

Standard deviation =  $\sqrt{180000}$

Standard deviation = 424.26

The standard deviation of the number of people who attended the concert in each of the five years is 424.26.

**QUESTION**

The following table shows the number of people who attended a concert in each of the five years from 2018 to 2022.

Year	Number of people
2018	1200
2019	1500
2020	1800
2021	2100
2022	2400

Calculate the variance of the number of people who attended the concert in each of the five years.

**ANSWER**

Variance =  $\frac{1}{5}[(1200 - 1800)^2 + (1500 - 1800)^2 + (1800 - 1800)^2 + (2100 - 1800)^2 + (2400 - 1800)^2]$

Variance =  $\frac{1}{5}[-600^2 + (-300)^2 + 0^2 + 300^2 + 600^2]$

Variance =  $\frac{1}{5} \times 900000$

Variance = 180000

The variance of the number of people who attended the concert in each of the five years is 180000.

**QUESTION**

The following table shows the number of people who attended a concert in each of the five years from 2018 to 2022.

Year	Number of people
2018	1200
2019	1500
2020	1800
2021	2100
2022	2400

Calculate the coefficient of variation of the number of people who attended the concert in each of the five years.

**ANSWER**

Coefficient of variation =  $\frac{\text{Standard deviation}}{\text{Mean}}$

Coefficient of variation =  $\frac{424.26}{1800}$

Coefficient of variation = 0.2357

The coefficient of variation of the number of people who attended the concert in each of the five years is 0.2357.



Figure 1: Schematic diagram of the process flow.

## Introduction

This document provides a comprehensive overview of the project's objectives, scope, and the methodology used for its development. It is intended for all stakeholders involved in the project, including team members, management, and external partners.

### Background

The project was initiated in response to the growing demand for a more efficient and user-friendly system to manage our operations. The current system is outdated and lacks essential features required for modern business operations.

### Project Objectives

The primary objectives of this project are to:

### Scope

The project scope includes the development of a new system that will cover all core business processes, from customer acquisition to sales and reporting. It will also include training for end-users and a comprehensive testing phase.

The project is expected to be completed within a timeline of 12 months, with a budget of \$500,000. Regular communication and reporting will be maintained throughout the project duration.

### Methodology

The project will follow a structured methodology, including requirements gathering, system design, development, testing, and deployment. Agile practices will be adopted to allow for flexibility and iterative improvements.

### Team Structure

The project team consists of a Project Manager, a Business Analyst, a System Architect, a Development Team, a QA Team, and a User Acceptance Testing (UAT) Team. Each team member has specific responsibilities and roles defined in the project charter.

### Risks and Mitigation

Key risks identified include budget overruns, scope creep, and delays in resource availability. Mitigation strategies include regular budget reviews, strict change control, and proactive resource management.

### Conclusion

The project is well-planned and has a high potential for success. It is crucial that all team members remain committed and communicate effectively to ensure the project meets its objectives.

### Next Steps

The next steps include finalizing the requirements, starting the design phase, and initiating the development process. A detailed project plan will be provided to guide the team through the next stages.

### Appendix

The appendix contains additional information, including a detailed project schedule, a list of stakeholders, and a glossary of terms used throughout the document.

### References

References include industry best practices, relevant research papers, and internal company documents that informed the project's development.

### Disclaimer

This document is a preliminary draft and is subject to change. It is not intended to be a contract or a legal document. All rights reserved.

### Approval

The project has been approved by the steering committee and the management team. The Project Manager is authorized to proceed with the project.

### Signatures

Signatures of the Project Manager and key stakeholders are required to confirm the project's approval and commitment.

## QUESTION

1. The following table shows the results of a survey of 100 people. The table is divided into four quadrants based on gender and age group.

- Male, 18-30
- Male, 31-45
- Female, 18-30
- Female, 31-45

2. The following table shows the results of a survey of 100 people. The table is divided into four quadrants based on gender and age group.

3. The following table shows the results of a survey of 100 people. The table is divided into four quadrants based on gender and age group.

Age Group	Male	Female	Total
18-30	25	15	40
31-45	15	25	40
Total	40	40	80

- Male, 18-30
- Male, 31-45
- Female, 18-30
- Female, 31-45

Age Group	Male	Female	Total
18-30	25	15	40
31-45	15	25	40
Total	40	40	80

4. The following table shows the results of a survey of 100 people. The table is divided into four quadrants based on gender and age group.

5. The following table shows the results of a survey of 100 people. The table is divided into four quadrants based on gender and age group.

Item	Description	Quantity	Unit	Material Code	Material Name	Material Description	Material Specification	Material Grade	Material Type
1	Steel Plate	10	Sq Ft	101	Steel Plate	Carbon Steel	A36	36	Structural Steel
2	Steel Plate	20	Sq Ft	102	Steel Plate	Carbon Steel	A36	36	Structural Steel
3	Steel Plate	30	Sq Ft	103	Steel Plate	Carbon Steel	A36	36	Structural Steel
4	Steel Plate	40	Sq Ft	104	Steel Plate	Carbon Steel	A36	36	Structural Steel
5	Steel Plate	50	Sq Ft	105	Steel Plate	Carbon Steel	A36	36	Structural Steel
6	Steel Plate	60	Sq Ft	106	Steel Plate	Carbon Steel	A36	36	Structural Steel
7	Steel Plate	70	Sq Ft	107	Steel Plate	Carbon Steel	A36	36	Structural Steel
8	Steel Plate	80	Sq Ft	108	Steel Plate	Carbon Steel	A36	36	Structural Steel
9	Steel Plate	90	Sq Ft	109	Steel Plate	Carbon Steel	A36	36	Structural Steel
10	Steel Plate	100	Sq Ft	110	Steel Plate	Carbon Steel	A36	36	Structural Steel



**Section 1: Introduction**


**Section 2: Objectives**

1. To understand the basic principles of the system.

**Section 3: Methodology**

The methodology used in this study is a combination of theoretical research and practical application. The theoretical part involves a thorough review of existing literature and the practical part involves the implementation of the system in a real-world environment.

## Multiple Choice Question

100/100

Question 10 of 10

100/100



- A single pane
- Two panes
- Three panes
- Four panes



Компания «Океан Электроники» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Поставка оригинальных импортных электронных компонентов напрямую с производств Америки, Европы и Азии, а так же с крупнейших складов мира;
- Широкая линейка поставок активных и пассивных импортных электронных компонентов (более 30 млн. наименований);
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Помощь Конструкторского Отдела и консультации квалифицированных инженеров;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Компания «Океан Электроники» является официальным дистрибьютором и эксклюзивным представителем в России одного из крупнейших производителей разъемов военного и аэрокосмического назначения «JONHON», а так же официальным дистрибьютором и эксклюзивным представителем в России производителя высокотехнологичных и надежных решений для передачи СВЧ сигналов «FORSTAR».



## JONHON

«JONHON» (основан в 1970 г.)

Разъемы специального, военного и аэрокосмического назначения:

(Применяются в военной, авиационной, аэрокосмической, морской, железнодорожной, горно- и нефтедобывающей отраслях промышленности)

«FORSTAR» (основан в 1998 г.)

ВЧ соединители, коаксиальные кабели, кабельные сборки и микроволновые компоненты:

(Применяются в телекоммуникациях гражданского и специального назначения, в средствах связи, РЛС, а так же военной, авиационной и аэрокосмической отраслях промышленности).



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