

# **AGGREGATE FUNCTIONS AND REPORTS**

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## **ABSTRACT**

In this paper, Topic 1 describes three aggregate functions and provides business examples where they are used. The successful implementation of aggregate functions in electronic engineering relies on a thorough understanding of design principles, comprehensive testing procedures, and diligent maintenance practices, which can lead to enhanced performance, increased efficiency, and reduced risk of malfunctions. In Topic 2, we explain the importance of reports to an organization, how they play a crucial role in the success of an organization as they provide valuable insights and information essential for effective decision making, effective communication, and monitoring of progress. We will outline who typically reads the reports, what use is made of reports, who is responsible for delivering the content of reports, and why it is important to understand the intended audience for a report.

## TOPIC 1

An aggregate function is a mathematical computation involving a set of values that results in a single value expressing the significance of the data it is derived from. The aggregate functions mainly used in Electronic Engineering are design, analysis, and testing. They can be explained as follows.

### 1. THE DESIGN FUNCTION

In electronic engineering, the design aggregate function refers to the process of combining multiple electronic components or subsystems into a single, cohesive system or product. This function involves integrating various components such as resistors, capacitors, transistors, and integrated circuits, along with software and firmware, into a single unit that can perform a specific function. The design aggregate function includes several stages, starting with the identification of the required components and subsystems, followed by the selection and integration of these elements, and finally testing and optimizing the system to ensure that it meets the desired performance criteria.

### 2. THE TESTING FUNCTION

The testing aggregate function in electronic engineering refers to the process of evaluating the performance of electronic components, systems, or devices. This function involves several procedures that are designed to determine the functionality, reliability, and overall quality of the electronic product. The testing aggregate function includes various techniques, such as functional testing, stress testing, environmental testing, and performance testing. Functional testing involves checking the basic functions of the electronic product, such as its ability to turn on, off, and other functions that are critical to its operation.

### 3. THE MAINTENANCE FUNCTION

The maintenance function of electronic engineering involves ensuring that electronic systems and components operate reliably and efficiently over time. This involves monitoring the performance of electronic systems and components, identifying and diagnosing faults, and repairing or replacing faulty components. Electronic engineers may also be responsible for developing maintenance schedules and procedures to ensure that electronic systems and components are properly maintained.

#### BUSINESS EXAMPLES WHERE THESE AGGREGATE FUNCTIONS ARE USED

##### i. Design

- ***Product Development*** - Electronic engineers can use their design skills to develop new electronic products that can be used in various industries, such as consumer electronics, healthcare, aerospace, and automotive.
- ***Process Automation*** - Electronic engineers can design automated systems that can help businesses improve their productivity, reduce costs and errors, and enhance the quality of their products.

In conclusion, electronic engineering design function can be used in various ways to help businesses improve their operations, develop new products, and stay ahead of their competition.

##### ii. Testing

- ***Quality Control*** - Electronic engineering testing functions can be used to ensure that a product or component meets the required standards and specifications. This can help improve the quality of the product, reduce defects, and prevent costly recalls.

- ***Product Development*** - Testing functions can be used during the product development stage to identify flaws and areas for improvement. This can help businesses create better products that are more reliable and efficient.

### **iii. Maintenance**

- ***Reducing Downtime*** - Electronic Engineering maintenance functions can help reduce downtime in business operations. By carrying out regular maintenance checks and fixing small problems before they become major issues, businesses can reduce the amount of time their equipment is out of commission, which can save them time and money.
- ***Improving Efficiency*** - Regular maintenance of electronic equipment can help improve its efficiency. Clean equipment runs more efficiently, which can save energy and reduce costs.

## TOPIC 2

### 1. Importance of Reports to an Organization

- **Decision-making** - Reports provide valuable information to decision-makers, enabling them to make informed decisions that can impact the success of the organization.
- **Planning** - Reports help in effective planning by providing data and insights that are crucial in developing strategic plans and setting goals.
- **Communication** - Reports facilitate communication within the organization by providing a means of sharing information with stakeholders, including employees, management, and investors.
- **Performance evaluation** - Reports help in measuring the performance of an organization, its employees, and various departments. This helps in identifying areas that need improvement and making necessary changes.
- **Compliance** - Reports are often required by regulatory bodies and government agencies to ensure compliance with laws and regulations. Failure to provide accurate reports can result in legal penalties and damage to the organization's reputation.

### Who typically reads a report in an Organization?

Reports in an organization are typically read by managers, supervisors, executives, and other decision-makers within the organization who are responsible for making strategic decisions based on the information presented in the report. Other employees who may also read reports include analysts, researchers, and other professionals who require the information to perform their job functions effectively.

## **Uses of Reports**

1. Reports provide important information that helps decision-makers to make informed decisions. They can be used to determine the feasibility of a project, identify trends, and predict outcomes.
2. Reports help in planning by providing data and insights on past and current performances. This information can be used to develop strategic plans for the future.
3. Reports are used to track progress toward goals and objectives. They provide a basis for monitoring the performance of individuals, teams, and the organization as a whole.
4. Reports are a means of communication within and outside the organization. They inform stakeholders, including investors, employees, and customers about the organization's performance.
5. Reports are used to meet legal and regulatory requirements. They provide evidence of compliance with regulations and laws.
6. Reports are used to evaluate employee performance. They provide feedback on areas that need improvement and help in the development of performance improvement plans.

## **Who is responsible for delivering the content of a Report?**

Typically, it is the responsibility of the person or team that generated the report to deliver its content to relevant stakeholders within the organization. However, the method of delivery may vary depending on the nature and purpose of the report, and the preferences and requirements of the stakeholders. It may be delivered in a meeting, a presentation, via email, or through a formal written report. Ultimately, the responsibility lies with the person or team who

generated the report to ensure that its content is accurately and effectively communicated to the relevant stakeholders.

### **Why is it important that you understand the intended audience for a Report?**

1. It helps to determine the tone, style, and content of the report: Different audiences have different needs, expectations, and levels of knowledge. Therefore, understanding the intended audience for a report is crucial in determining the appropriate tone, style, and content of the report that can effectively communicate the message.
2. It improves the effectiveness of the report: A report that is tailored to the needs of the audience is more likely to be effective in achieving its purpose. When the report is designed with the audience in mind, it can be more engaging, informative, and persuasive.
3. It helps to avoid misunderstandings: A report that is not tailored to the needs of the audience can be confusing, irrelevant, or misleading. This can lead to misunderstandings, misinterpretations, and even mistrust between the author and the audience.
4. It enhances the credibility of the author: A report that is designed with the audience in mind demonstrates that the author has taken the time to understand the needs of the audience and has made an effort to communicate in a way that is clear, concise, and relevant. This can enhance the credibility of the author and the report.

In conclusion, understanding the intended audience for a report is important because it helps to determine the tone, style, and content of the report, improves the effectiveness of the report, helps to avoid misunderstandings, and enhances credibility.