Problem Statement:

As a Data Analyst, the task is to analyze and derive insights from a dataset containing various features related to tasks, samples, defects, errors, and employee information within a company. The dataset includes the following features:

XYZ Company operates across multiple departments, each responsible for executing various tasks critical to the company's operations. These tasks encompass a wide range of activities, from production processes to administrative functions. However, the company faces challenges in maintaining consistent task quality and efficiency, as evidenced by varying defect rates and error occurrences across departments and employee teams.

The dataset provided for analysis contains detailed records of tasks performed, including timestamps, employee IDs, department IDs, auditor IDs, manager IDs, task types, sample data, defects, and errors encountered during task execution. Additionally, the dataset includes supplementary information such as employee names, auditor names, manager names, department names, and office locations.

Key Features:

- **Date:** The date when the task was recorded.
- **Emp Id:** Employee ID, a unique identifier for each employee.
- **Department Id:** Identification code for the department where the task belongs.
- **Auditor Id:** Identification code for the auditor responsible for auditing the task.
- **Manager Id:** Identification code for the manager overseeing the task.
- **All Task:** A categorical variable indicating the type of task performed.
- **Sample:** Sample data related to the task.
- **Defects:** Number of defects found during the task.
- **Errors:** Number of errors encountered during the task.
- **Auditor Name:** The name of the auditor corresponding to the Auditor Id.
- **Emp Name:** Name of the employee corresponding to the Emp Id.
- **Manager:** Name of the manager corresponding to the Manager Id.
- **Department:** Name of the department corresponding to the Department Id.
- **Office Location:** Location of the office where the task was performed.

The problem at hand involves analyzing this dataset to extract meaningful insights regarding task performance, defect rates, error occurrences, employee productivity, departmental efficiency, and managerial oversight.

Key aspects of the analysis may include:

1. **Task Performance Analysis:** Evaluate the frequency and types of tasks performed over time. Identify trends in task completion rates and variations across departments and auditors.

2. **Defect and Error Analysis:** Investigate the relationship between defects, errors, and task types. Determine which tasks are more prone to defects and errors. Assess the impact of defects and errors on overall productivity.

3. **Employee Productivity and Performance:** Analyze employee performance based on task completion rates, defects, and errors. Identify high-performing employees and areas for improvement.

4. **Managerial Oversight:** Evaluate the effectiveness of managers in overseeing tasks and addressing defects and errors. Assess managerial responsiveness to issues identified during tasks.

5. **Departmental Efficiency:** Compare the performance and efficiency of different departments based on task completion rates, defects, and errors. Identify departments that may require additional resources or process improvements.

6. **Auditor Performance:** Assess the performance of auditors in identifying defects and errors during tasks. Determine whether certain auditors consistently perform better than others.

7. **Location-Based Analysis:** Explore variations in task performance, defects, and errors across different office locations. Identify potential factors contributing to location-specific trends.

DAX Functions Implementation

All task Total

```
All task Total = SUM('Data Sampling'[All Task])
```

Defects Percentages

```
Defect % = DIVIDE(SUM('Data Sampling'[Defects]), SUM('Data Sampling'[Sample]),
```

```
BLANK())
```

Defects Total

```
Defects Total = SUM('Data Sampling'[Defects])
```

Errors Percentage

```
Error % = DIVIDE(SUM('Data Sampling'[Errors]), SUM('Data Sampling'[Sample]), BLANK())
```

Errors Total

```
Errors Total = SUM('Data Sampling'[Errors])
```

Quality Score

```
Quality Score = IF([Defect %] = BLANK(), BLANK(), 1 - [Defect %])
```

Sample Percentages

```
Sample % = DIVIDE(SUM('Data Sampling'[Sample]), SUM('Data Sampling'[All Task]), BLANK())
```

Sample Total

```
Sample Total = SUM('Data Sampling'[Sample])
```