

Dr. SNS RAJALAKSHMI COLLEGE OF ARTS & SCIENCE
(Autonomous)
Coimbatore -641049

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DEPARTMENT OF COMMERCE (IT)

COURSE NAME : 21UCI508 - Business Intelligence

III YEAR / V SEMESTER

Unit IV
Types of errors

Unit 4

Types of errors

1. Data Entry Errors

Data entry errors occur when incorrect information is entered into a system due to human mistakes, such as typing errors, misspellings, or incorrect numerical values. These errors usually happen during manual data input. For example, entering a customer's name as "Jonh" instead of "John" or typing "5500" instead of "5000". These small errors can significantly affect data accuracy and the reliability of reports.

2. Omission Errors

Omission errors refer to the absence of important data in a dataset. This could be due to skipped fields during form filling, data not captured by sensors, or system glitches. For instance, a student registration form missing the "email address" or "date of birth" leads to incomplete records.

3. Duplication Errors

Duplication errors happen when the same data is recorded more than once. This could be exact duplicates or partial duplicates with slight differences in spelling or format. An example is a customer registered twice in the system as "Ravi Kumar" and "Ravi K." Duplicate entries waste storage space and lead to confusion in analytics and decision-making.

4. Consistency Errors

Consistency errors arise when the same data appears differently across systems or within different parts of the same dataset. This can lead to conflicting information and confusion.

5. Format Errors

Format errors happen when data does not follow the predefined or expected pattern or format. These errors can occur during data entry or data conversion between systems.

6. Referential Integrity Errors

Referential integrity errors are common in relational databases when data references another record that does not exist. These errors violate the rules of linking tables via primary and foreign keys. For example, a payment record referencing a non-existent invoice ID causes a break in data relationships and logical flow.

7. Timeliness (Outdated) Errors

Timeliness errors occur when the data is no longer current or valid, resulting in outdated information being used for decision-making. For instance, listing an employee as “active” even after resignation or using last year’s product prices in current billing. Such outdated data can cause poor business decisions and loss of trust.

8. Logical Errors

Logical errors arise when the data values entered do not make sense according to business rules or real-world logic. An example is recording a person’s age as 5 years and their employment start date as 10 years ago. These errors often go unnoticed during input but can seriously impact analytics and system automation.

9. Classification Errors

These errors occur when data is placed under the wrong category or label. For example, classifying a “complaint” as “feedback” or tagging a “full-time” employee as “part-time”. Classification errors mislead reports and distort analysis, especially in marketing or HR systems.

10. Measurement Errors

Measurement errors happen when instruments, sensors, or users record incorrect data values due to malfunctions, misreadings, or calibration issues. For instance, a temperature sensor capturing 60°C instead of 26°C due to a defect. These errors often affect scientific, engineering, or IoT-based data systems.

