# Defect Identification

## 🔹 Definition

**# Source**: **Chatgpt (GPT-5-Standard) at [8/18/2025]**

**Defect Identification** is the process of **finding and recognizing defects (bugs, errors, or inconsistencies)** in a software product during the testing activities.  
 It ensures that issues are discovered **before the product reaches end-users**.

## **⚙️ How Defects Are Identified**

**# Source**: **Chatgpt (GPT-5-Standard) at [8/18/2025]**

Defects can be found through:

1. **Static Testing (Without Execution)**
   * Reviews, walkthroughs, and inspections of:  
     + Requirements documents
     + Design specifications
     + Code reviews
   * Example: A missing requirement in the Software Requirements Specification (SRS).
2. **Dynamic Testing (With Execution)**
   * Running test cases and comparing actual vs. expected results.
   * Example: Tester executes the "Login with valid credentials" test → Actual result = *Error 500* → Defect identified.
3. **Exploratory Testing**
   * Testers explore the system without predefined scripts to discover unexpected behavior.
4. **Automation Test Failures**
   * Automated regression suites identify broken functionality after new changes.
5. **User Feedback / UAT**
   * Defects may also be reported during **User Acceptance Testing (UAT)**.

## **🎯 Objective of Defect Identification**

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* Ensure **quality** by detecting errors early.
* Prevent **costly failures** in production.
* Provide a **basis for defect reporting & management**.
* Reduce **risk of system malfunction** for end users.

## **📊 Example**

**# Source**: **Chatgpt (GPT-5-Standard) at [8/18/2025]**

* Requirement: “System should accept passwords with at least 8 characters.”
* Actual: System accepts 5-character passwords.
* **Defect Identified**: Requirement violation (security risk).

✅ **In short:** **Defect Identification** = the act of **finding errors** in software (via reviews, static/dynamic testing, or automation) before release, so they can be logged, tracked, and fixed.