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# What is meant by CASE tool? [5]

CASE stands for **Computer-Aided Software Engineering**.

Software programs known as CASE tools offer automated assistance for software development procedures. Design, analysis, coding, testing, documentation, and project management are just a few of the software engineering jobs that these technologies help with. Enhancing productivity as well as the quality and maintainability of software systems is their goal.

# Identify the primary reasons for using a CASE tool. [5]

 **Improved Productivity** – Automation reduces manual work, allowing faster development.

 **Better Documentation** – CASE tools automatically generate accurate and consistent documentation.

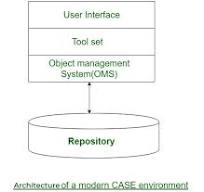
 **Standardization** – They enforce software development standards across the team.

 **Error Reduction** – By automating tasks like syntax checks and model validation, errors are minimized early.

 **Project Management Support** – Many CASE tools include scheduling, resource allocation, and reporting features.

# What is meant by a CASE environment? Also illustrate with a diagram how the environment is [10]

A CASE environment is an integrated set of CASE tools that support the entire software development life cycle (SDLC). It provides an environment for developers to perform design, coding, testing, and maintenance within a single interface or framework.



# **Differentiate in between a CASE environment and a programming environment. [10]**

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| **Feature** | **Case Environment** | **Programming environment** |
| Scope | Entire SDLC | Mainly coding and debugging |
| **Tools** | Modeling, testing, documentation, PM tools | Editor, compiler, debugger |
| **users** | Analysts, designers, testers, managers | Primarily developers |
| **Integration** | High (with repositories and various tools) | Often standalone or loosely connected |
| **Goal** | Improve quality, reduce time and errors in SDLC | Help programmers write and test code |

# Identify the benefits of a CASE environment. [5]

* + **Consistency across projects**
  + **Faster development and deployment**
  + **Improved collaboration** among teams
  + **Better quality and maintainability of software**
  + **Increased traceability and version control**

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# Identify the features of a prototyping CASE tool. [5]

* 1. **Rapid Interface Design** – Allows developers to quickly build and modify user interfaces.
  2. **Simulation Capabilities** – Users can interact with the prototype as if it’s the final system.
  3. **Feedback Integration** – Facilitates iterative refinement based on user feedback.
  4. **Support for Requirements Gathering** – Helps stakeholders clarify needs.
  5. **Reuse of Components** – Encourages reuse of existing modules during prototyping

# Describe the 2 Functionality of CASE tools [10]

**Upper CASE Tools**

* Support the **early stages** of software development like requirements analysis and system design.
* Tools include diagram editors (UML, ERD), documentation generators, and modeling frameworks.
* **Purpose:** Improve the clarity and correctness of initial planning and reduce cost due to early error detection

**Lower CASE Tools**

* Support **later stages** such as coding, testing, deployment, and maintenance.
* Tools include code generators, test case managers, and debugging utilities.
* **Purpose:** Improve code quality, speed up development, and automate repetitive coding and testing tasks.

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