

COMPUTER AIDED SOFTWARE ENGINEERING (CASE)

- Nowadays everything has to go faster. Because of the increasing speed of changing market-demands new products replace old ones much earlier than before.
- Thus the production lines have to be developed faster too.
- A very important role in this development is software engineering.
- In past, software systems were build using traditional development techniques.
- This is too much costly and time consuming.

CASE

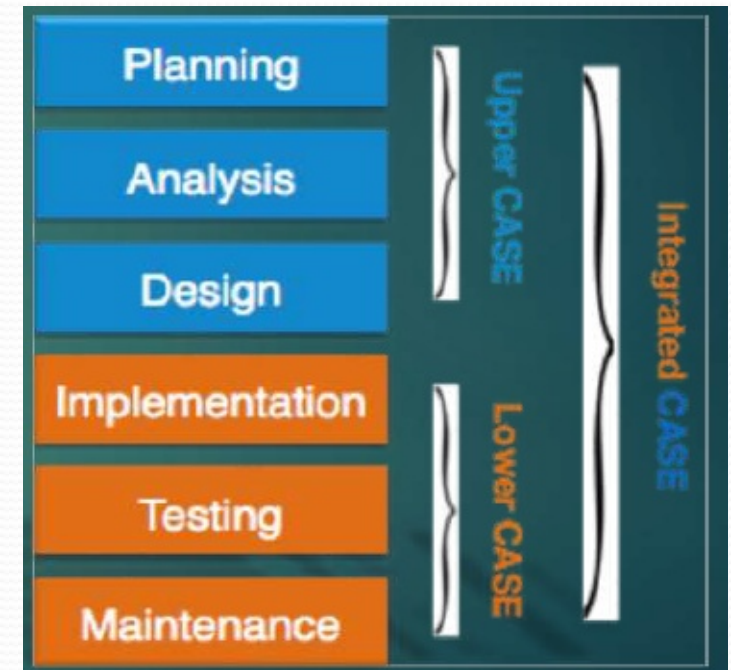
- To speed up the software system building process, a new concept of designing software is introduced in the 70's, called Computer Aided Software Engineering (CASE).
- Computer Aided Software Engineering (CASE) is the use of software tools to help in the development and maintenance of software.
- Software systems that are intended to provide Automated Support for software process activities.
- Automated Support is that we use some software to develop another software

Need of CASE tools

- Software developers always looking for such CASE tools that help them in many different ways during the different development stages of software.
- They can understand the software and prepare a good end product that efficiently fulfill the user requirements.
- CASE tools provide the ways that can fulfill the requirements of software developers.
- These tools provide computerized setting to software developers to analyze a problem and then design its system model.

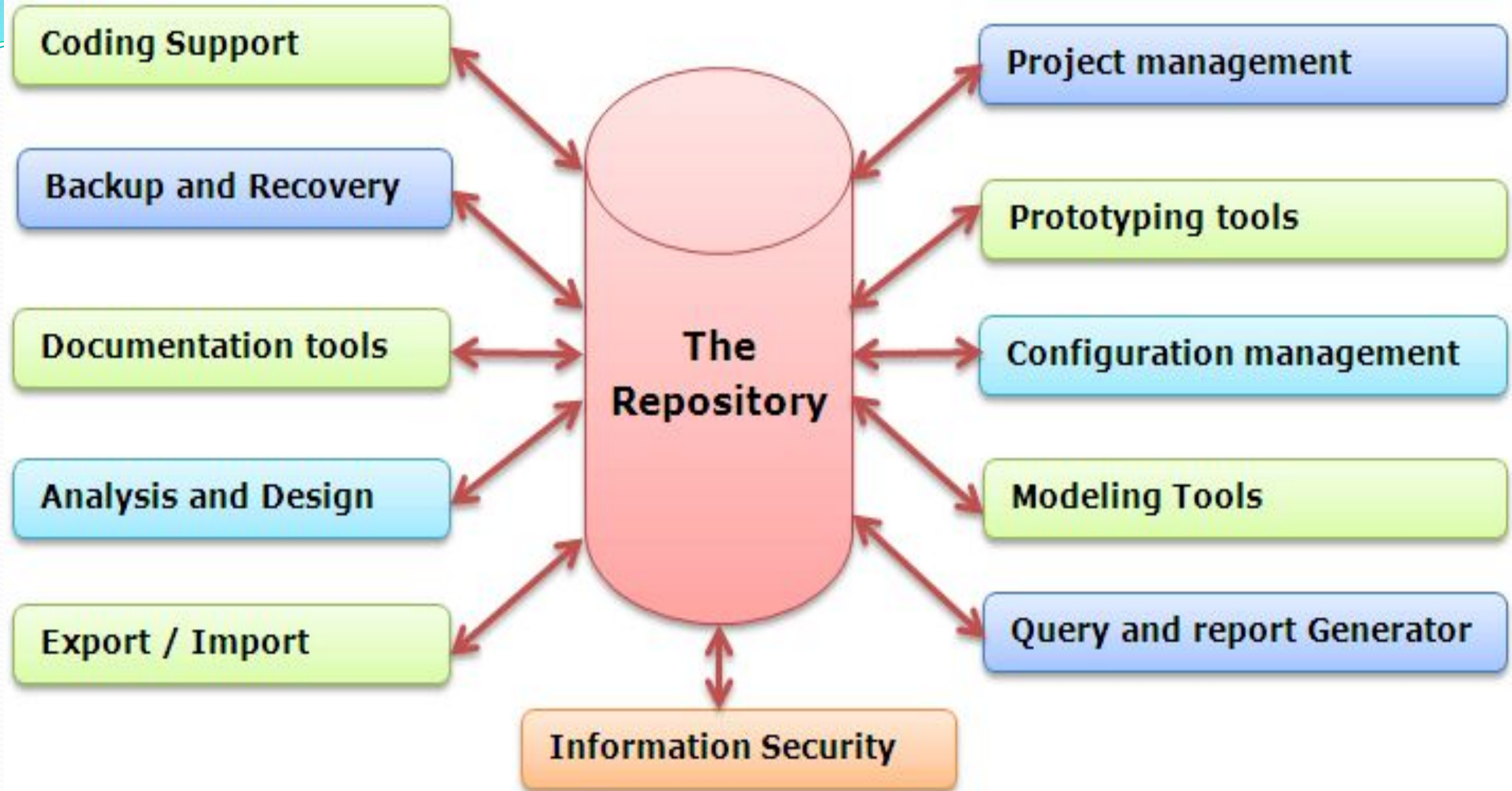
CASE (Continue...)

- CASE is the use of a computer-assisted method to organize and control the development of software, especially on large, complex projects involving many software components and people.
- Using CASE allows designers, code writers, testers, planners and managers to share a common view of where a project stands at each stage of development.



Why CASE Tools are developed?

- Main purpose of the CASE tools is to decrease the development time and cost and increase the quality of software.
- CASE tools are developed for the following reasons:
 - Firstly Quick Installation
 - Time saving by reducing coding and testing time.
 - Enrich graphical techniques and data flow.
 - Enhanced analysis and design development.
 - Create and manipulate documentation
 - The speed during the system development increased



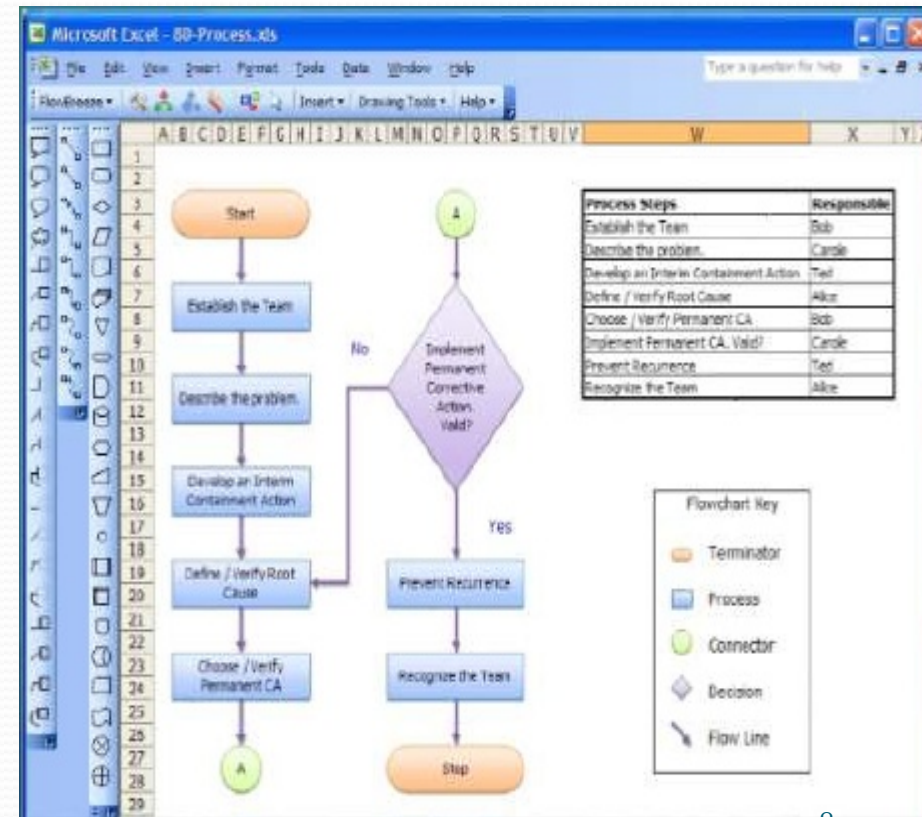
CASE Tools

- Major categories of CASE tools are:
 - Diagram tools
 - Project Management tools
 - Documentation tools
 - Web Development tools
 - Quality Assurance tools



Diagram Tools

- These tools are used to represent system components, data and control flow among various software components and system structure in a graphical form.
- Examples
 - Flow Chart Maker tool
 - DFD's (Data Flow Diagram)
 - ERD's (Entity Relationship Diagram)



Project Management Tools

- These tools are used for project planning, cost and effort estimation, project scheduling and resource planning.
- Examples
 - Creative Pro Office
 - Jira



Documentation Tools

- Documentation tools generate documents for technical users and end users.
- Training Manuals, Installation Manual, User Manuals can be generated by documentation tools.
- Examples
 - DrExplain



Web Development Tools

- These tools assist in designing web pages with all allied elements like forms, text, script, graphic and so on.
- Web tools also provide live preview of what is being developed and how will it look after completion.
- Examples
 - Adobe Edge Inspect
 - Visual Studio Code
 - Sublime text



Quality Assurance Tools

- Quality assurance in a software organization is monitoring the engineering process and methods adopted to develop the software product in order to ensure conformance of quality as per organization standards.
- Examples
 - Jmeter
 - Selenium



Advantages

- CASE tools improve quality and productivity of software.
- Produces system that more closely meet user needs and requirements.
- Produces system with excellent documentation.
- Tools are more effective for large scales systems.
- Produce more flexible system.
- CASE tools reduce the time for error correction and maintenance.

Disadvantages

- Very Complex
- Not easily maintainable
- Good quality CASE tools are very expensive.
- Require training of maintenance staff.
- May be difficult to use with existing system.