A tool is a program or application that software developers use to create, debug, or maintain other programs and applications. The term usually refers to relatively simple programs that can be combined together to accomplish a task.
The history of software tools began with the first computers in the early 1950s that used linkers, loaders, and control programs. Tools became famous with Unix in the early 1970s with tools like grep, awk and make that were meant to be combined flexibly with pipes.

In computing, an environment is the overall system, software, or interface in which a program runs, such as a runtime environment or environment variable, or through which a user operates the system, such as an integrated development environment in which the user develops software or a desktop environment.
Types of Tools & Environments

- **Integrated development environments (IDEs)**
  - combine the features of many tools into one complete package;
  - often used for development of enterprise-level applications.
  - e.g.
    - Delphi
    - C++ Builder
    - Microsoft Visual Studio
    - Xcode
    - Eclipse

- **Revision control**
  - Software configuration management
  - e.g.
    - SCM, SCCS
    - RCS, CVS
    - SVN, Git
    - Monotone, GNU arch
    - SourceSafe, PVCS
    - ClearCase, Bonsai

- **Testing**
  - used to help identify the correctness, completeness, security, and quality of developed computer software
Types of Tools & Environments

- **Compilation and linking tools**
  - e.g.
    - GNU toolchain (Make, automake, gcc)
    - Microsoft Visual Studio
    - CodeWarrior
    - Xcode

- **Editors**
  - e.g.
    - emacs

Types of Tools & Environments

- **Scripting**
  - e.g.
    - Shell
    - Perl
    - REXX

- **Bug Databases**
  - e.g.
    - gnats
    - Bugzilla
    - Trac
Types of Tools & Environments

- **Debuggers**
  - e.g.
    - `gdb`
    - GNU Binutils

- **Online Code Sharing Tools**
  - e.g.
    - Sourceforge
    - Krugle
    - ByteMyCode

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Types of Tools & Environments

- **A software development kit (SDK or "devkit")**
  - typically a set of development tools that allows a software engineer to create applications for
    - certain software package, software framework,
    - hardware platform, computer system,
    - video game console, operating system or similar.
  - e.g.
    - The DirectX SDK from Microsoft
    - The Java SDK from Sun Microsystems
    - The Net Yaroze from Sony
Types of Tools & Environments

- **CASE Tools**
  - Computer-aided software engineering (CASE) is the use of software tools to assist in the development and maintenance of software.
  - Tools used to assist in this way are known as CASE Tools.
  - All aspects of the software development lifecycle can be supported by CASE tools.

- Sometimes CASE tools are separated in two groups:
  - Upper CASE: Tools for the analysis and design phase of the software development lifecycle
  - Lower CASE: Tools to support data base schema generation, program generation, implementation, testing, configuration management

- e.g.
  - ClearCase
  - EasyCase
What we have at the Department

- You may apply to your Assistants, Mr. İsmail Öztürk, Admins:
  - .Net Framework 1.1 SDK 1306.4
  - .Net Framework 1.1 SDK SP3
  - Access 2003
  - Exchange server 2003 Enterprise Edition
  - InfoPath 2003
  - MapPoint 2004

MELL Developer Edition for MSDNAA
- MSDN Library (Visual Studio .NET)
- MSDN library for Visual Studio 2005
- OneNote 2003
- Project professional 2002
- Project professional 2003
- Project Server 2003
- SQL Server 2000 Enterprise edition
- SQL Server 2005 32 bit ve 64 bit Developer edition
- SQL Server 2005 Express edition
- Virtual Pc 2004
- Visio for Enterprise Architects
- Visio Professional 2003

- Visual Basic 2005 express Edition
- Visual C# 2005 express Edition
- Visual C++ 2005 express Edition
- Visual J# 2005 express Edition
- Visual SourceSafe 2005
- Visual SourceSafe 6.0d
- Visual Studio .NET 2003 Pro
- Visual Studio .NET Academic Student Tools 2003
- Visual Studio .NET Pro 2002
- Visual Studio 2005 Pro
- Visual Studio 2005 Team Foundation Server
- Visual Studio 2005 Team Test Load agent
- Visual Studio 2005 Tools for the Microsoft Office System
- Visual Web Developer Express Edition

- Windows 2000 Advanced server with SP4
- Windows Server 2003 Enterprise Edition
- Windows services for UNIX 3.0
+ **Linux tools:**

- **IDE & RAD**
  - Eclipse, Netbeans (5.0 / 5.5 beta), Jbuilder, Anjuta, Kdevelop, Monodevelop, Code::Blocks, Boa-creator

- **UML**
  - Umbrello, DIA(dia2code, autodia), Tcm, also UML support in Netbeans 5.5 beta

- **Unit**
  - junit, kunittest, nunit, gnunit2, dejagnu

- **You may apply to your Assistant Oral Dalay:**
  - Rational Rose
What we have at the University (licensed)

- You may apply to your Assistants
  - Visual_SourceSafe_6.0c
  - Visual_Studio_.NET_2002
  - Visual_Studio_.NET_2003
  - Visual_Studio_.NET_Component_Update
  - Visual_Studio_.NET_Visio_2002
  - Visual_Studio_6.0

Examples

- UML Products by Company
  "http://www.objectsbydesign.com/tools/umltools_byCompany.html"
- Software tools
  http://www.rspa.com/spi/CASE.html
- CASE Tools
  http://www.cs.queensu.ca/Software-Engineering/tools.html
- List of UML tools