Integrierte Entwicklungsumgebung

Eine **integrierte Entwicklungsumgebung** (Abkürzung **IDE**, von engl. *integrated development environment*, auch *integrated design environment*) ist ein Anwendungsprogramm zur Entwicklung von Software.

Integrierte Entwicklungsumgebungen können funktional zu einer Gruppe zusammengefasst werden und verfügen in der Regel über folgende Komponenten:
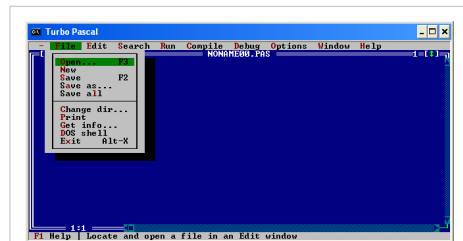
- Texteditor
- Compiler bzw. Interpreter
- Linker
- Debugger
- Quelltextformatierungsfunktion

Umfangreichere integrierte Entwicklungsumgebungen enthalten oft weitere hilfreiche Komponenten wie Versionsverwaltung, Projektmanagement, UML-Modellierung oder die Möglichkeit der einfachen Erstellung von grafischen Benutzeroberflächen (auch GUI genannt). Meist wird nur eine Programmiersprache unterstützt. Es gibt aber auch Anwendungen, die mehrere spezielle IDEs unter einer gemeinsamen Benutzeroberfläche zusammenfassen.
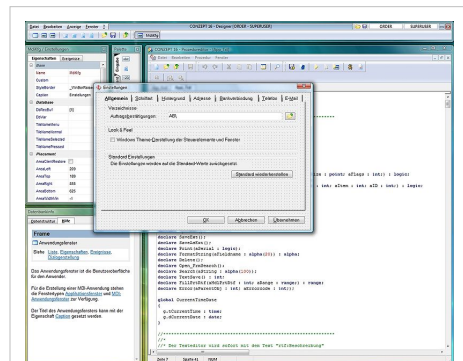
In erster Linie sind integrierte Entwicklungsumgebungen hilfreiche Werkzeuge, die dem Software-Entwickler häufig wiederkehrende Aufgaben abnehmen und einen schnellen Zugriff auf wichtige Funktionen bieten. Der Entwickler kann sich dadurch ganz auf seine eigentliche Aufgabe, die Programmierung, konzentrieren.

Integrierte Entwicklungsumgebungen kamen in der ersten Hälfte der 80er Jahre auf und lösten die damals übliche Praxis ab, Editor, Compiler, Linker und Debugger als vier getrennte Produkte anzubieten, die vom Benutzer über die Kommandozeile ausgeführt wurden. Eine der ersten erfolgreichen IDEs war Turbo Pascal. Daneben waren und sind Integrierte Entwicklungsumgebungen der 4. Generation wie z. B. Natural bis heute im Markt erfolgreich. Während die ersten IDEs noch Text-basiert arbeiteten, ging der Trend vor allem bei den großen Anbietern ab ca. 1990 zunehmend hin zu visuellen Programmierumgebungen. Vor allem für Spezialsprachen gibt es aber auch heute noch verschiedene Text-IDEs.
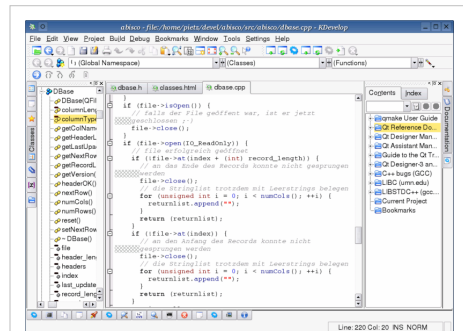
IDEs gibt es für nahezu alle Programmiersprachen und Plattformen. Selbstverständlich gibt es integrierte Entwicklungsumgebungen auch für solche Konzepte, die darauf zielen, mehr oder weniger programmierfrei Anwendungssoftware per Konfiguration zu erstellen (siehe z. B. Universal Application), und somit nicht auf eine Programmiersprache ausgerichtet sind.
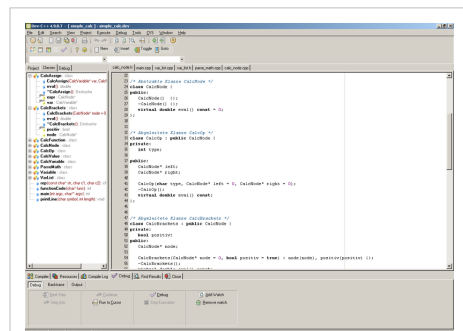

Borland Turbo-Pascal, eine IDE mit zeichenorientierter Benutzerschnittstelle

CONZEPT 16, ein Datenbanksystem mit integrierter Entwicklungsumgebung

KDevelop, eine freie IDE für KDE

Dev-C++, eine freie IDE für Windows

Geschichte

Maestro I (Ursprünglich *Programm-Entwicklungs-Terminal-System PET*) von Softlab war weltweit die erste Integrierte Entwicklungsumgebung für Software. Maestro I wurde weltweit 22.000 mal installiert, davon 6.000 mal in der Bundesrepublik Deutschland [1]. Maestro I war in den 1970er und 1980er Jahren führend auf diesem Gebiet.

Erste Vorstellung einer Entwicklungsumgebung 1975: Harald Wieler, Mitgesellschafter von Softlab, entwickelte seit 1974 einen ersten Prototyp des *PET* auf Basis des Philips X 1150 Datensammelsystemes. Wieler war vorher Architekt (und Programmierer) für

Visual Studio Express Edition, eine kostenlose IDE von Microsoft

Betriebssystementwicklung für Großrechner von Radio Corporation of America und Siemens. Die Entwicklung von Maestro I wurde mit BMFT-Mitteln gefördert mit dem Ziel, einen interaktiven Programmierplatz für monatlich 1000 Mark zu ermöglichen.

> „Eine Woche lang und unermüdlich demonstrierte die charmante Spezialistin des Softlabs, München, Frau Dr. Christiane Floyd – umringt von Trauben von Fachleuten – auf dem Systems-Stand des Software-Hauses das Programm-Entwicklungs-Terminal-System PET"
>
> – 21. November 1975 Computerwoche[2]

In den 1980er Jahren kamen neben den Integrierten Entwicklungsumgebungen für Standardprogrammiersprachen der dritten Generation solche für 4GL-Programmiersprachen wie z. B. Natural auf. Auch diese bieten neben der Programmiersprache in einer interaktiven integrierten Entwicklungsumgebung alle Werkzeuge wie: Analyse- und Designwerkzeug, Texteditor, Maskeneditor, GUI Designer, Compiler bzw. Interpreter, Linker, Debugger, Quelltextformatierungsfunktion.
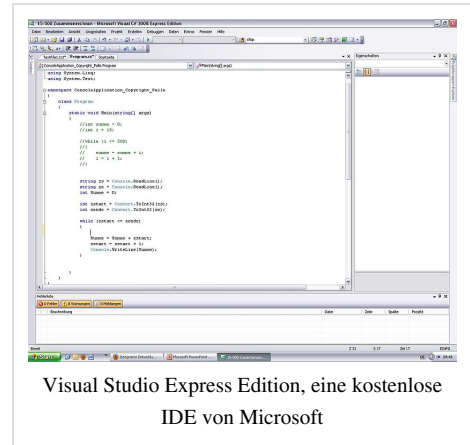
Liste der Entwicklungsumgebungen

In der Liste von Integrierten Entwicklungsumgebungen sind einige proprietäre und freie IDEs aufgeführt. Die Tabelle Entwicklungsumgebungen für die App Programmierung [3] liefert eine Liste aktueller Betriebssysteme von Smartphones und Informationen zur jeweiligen Entwicklungsumgebung.

Einzelnachweise

[1] http://www.computerwoche.de/index.cfm?pid=432&pk=1153269

[2] http://www.computerwoche.de/heftarchiv/1975/47/1205421/

[3] Tabelle Entwicklungsumgebungen für die App Programmierung (http://app-entwickler-verzeichnis.de/faq-app-entwicklung/10-programmierung/32-vergleich-entwicklungsumgebungen-fuer-die-app-programmierung)

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