

# EINFÜHRUNG

Flussgraphen in DynamicNodes

# **Flussgraphentheorie und visuelles Programmieren**

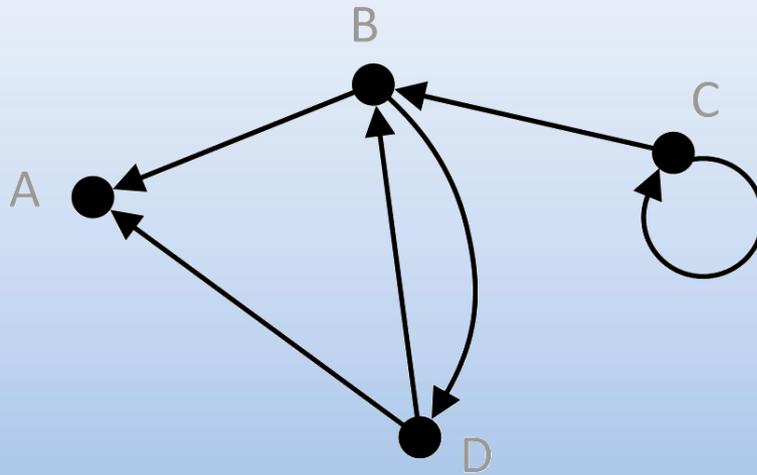
Was sind Graphen und wie kann man visuell Programmieren?

## Modernes Programmieren

The screenshot shows the Visual Studio IDE with the following components:

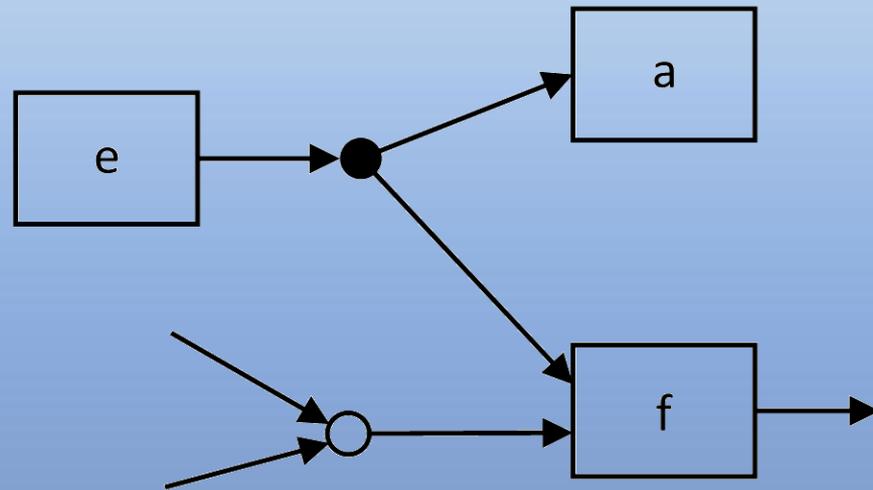
- Project Explorer (Left):** Shows the project structure for 'DynamicNodes2'. The 'Nodes' folder is expanded, showing various interfaces and classes like `Configuration.cs`, `DataTypesTools.cs`, `DelegateOutPortExt.cs`, `EventHandling.cs`, `FieldInPortExt.cs`, `FireHandler.cs`, `GenericDataTypeManager.cs`, `Graph.cs`, `GraphFlagChangedEventArgs.cs`, `IConfiguration.cs`, `IExtensible.cs`, `IExtension.cs`, `IFlag.cs`, `IGraph.cs`, `IGraphStorage.cs`, `InPortDataTypeProvider.cs`, `InNode.cs`, `InPort.cs`, `InPortDataTypeGroup.cs`, `InPortInfoAttribute.cs`, `InPortPersistenceExt.cs`, `IOutPortDataTypeProvider.cs`, `IRuntime.cs`, `IThreadManager.cs`, `LogTools.cs`, `MessageBus.cs`, `MessageWriter.cs`, `Node.cs`, `NodeFactory.cs`, `NodeInfoAttribute.cs`, `OutPort.cs`, and `OutPortInfoAttribute.cs`.
- Code Editor (Center):** Displays the `Node.cs` file. The `LoadDeclarativePorts()` method is visible, with line numbers 55 to 225. The code includes comments in German and C# code for loading declarative ports and fields. A `#region Private Methods` block is also present.
- File Structure (Right):** Shows the file structure of the `Node.cs` file, including private methods like `LoadDeclarativePorts()`, `CheckPreventions()`, `ActivationPhase1()`, `ActivationPhase2()`, and `IsActivationRequired()`, and public methods like `AddPort()`, `RemovePort()`, `GetAddress()`, `GetInPortById()`, `GetOutPortById()`, `GetPortById()`, `Isolate()`, `Dispose()`, and `IsDisposed()`.
- Type Hierarchy (Right):** Shows the type hierarchy for the `Node` class. A message indicates that no type hierarchies are open and provides instructions to use ReSharper to view the type hierarchy.
- Toolbox (Bottom Left):** Shows the 'Allgemein' group, which is currently empty. A message states: 'In dieser Gruppe sind keine verwendbaren Steuerelemente vorhanden. Ziehen Sie ein Element auf diesen Text, um es der Toolbox hinzuzufügen.'
- Errors List (Bottom Center):** Shows 0 errors, 0 warnings, and 0 messages.
- Status Bar (Bottom):** Shows 'Z 210 S 13'.

## Flussgraphen



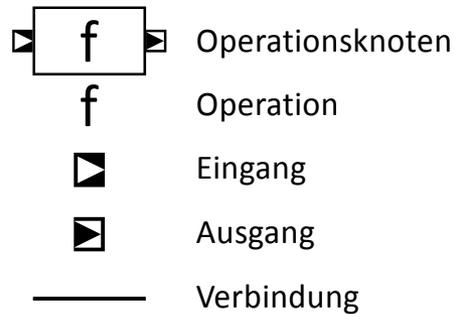
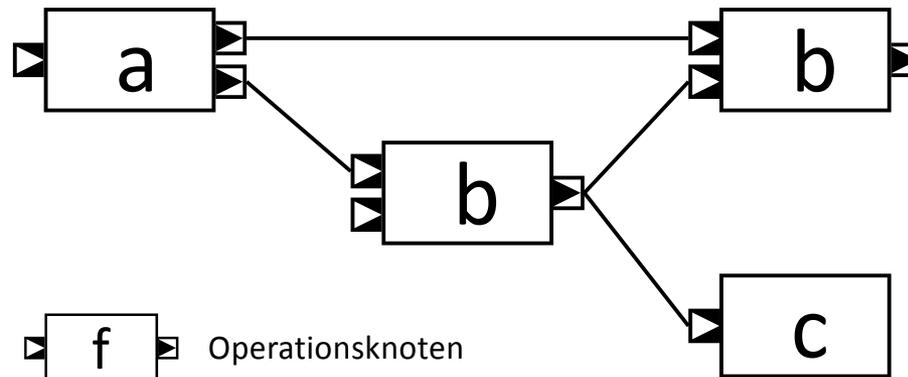
Gerichteter Graph

Flussgraph



## DynamicNodes Flussgraph

In der Theorie



## DynamicNodes Flussgraph

In der Praxis

The screenshot displays the DynamicNodes 2 software interface. The main window, titled "DynamicNodes 2 [nicht gespeichert]\*", shows a workflow graph with several nodes connected by lines. The nodes include "Pixel-Grabber", "Einfaches Muster", "Schachbrettmuster", "Rendern", and "Bildbetrachter Bildansicht 1". A "Schnell-Info" panel on the right shows the "Anschlüsse" (connections) for the selected node, listing "Ausgänge" (outputs) and "Eingänge" (inputs). The "Eingänge" section shows "pixels" with the type "DynamicNode.Types.In" and "useAlpha" set to "False". Below the graph, a preview window labeled "Bildansicht 1" shows a rendered image of a colorful, circular pattern. The interface also includes a "Knotenbibliothek" (node library) on the left, a status bar at the bottom with a message "Letzte Meldung: Der Graph ist gestorben.", and a taskbar at the very bottom showing the system clock and other open applications.

DynamicNodes 2 [nicht gespeichert]\*

File Ansicht ?

Knotenbibliothek

Unbenannt

Schnell-Info

Anschlüsse

Ausgänge

image System.Drawing.Bitmap

Eingänge

pixels DynamicNode.Types.In

useAlpha False

image

Bildansicht 1

100%

Letzte Meldung: Der Graph ist gestorben.

Zeit: 13.06.2007 16:24:25

Computer DN - Datei-Browser mono mono DynamicNodes 2 [nicht gesp... 16:24

## Marke (Token)

- Kapselt Daten für Transport im Flussgraphen
- Besteht aus
  - Status
    - Gültig (valid)
    - Ungültig (invalid)
    - Leer (not set)
  - Markenwert: Daten oder nichts
  - Stream: Verknüpfung mit einer Token-Sequenz
  - Stream-Index: Sequenz-Nummer

<http://dynamicnodes.mastersign.de/>